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THE WEST MIDLANDS ROAD TRANSPORT INDUSTRY

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Doctor of Philosophy

ASTON UNIVERSITY

September 1988

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The West Midlands Road Transport Industry.

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The object of this project was to identify those elements of management practice which characterised successful firms in the West Midlands Road Transport Industry. The intention being to establish the contents of what might be termed a management policy portfolio for growth.

The First Phase was the review of those factors which were generally accepted as having an influence on the success rate of transport firms, in order to ascertain if they explained observed patterns. Secondly, if this were not the case, to instigate a field work study to isolate those policies which were associated with growth organizations.

Investigation of the vehicle movements for the entire West Midlands Fleet over a complete licence cycle suggested that conventional explanations could not fully account for the observed patterns. To carry out the second phase of the study, a sample of growth firms were visited in order to measure their attitudes on a range of factors hypothesised to affect growth.

Field data were analysed to establish management activities over a wide range of areas and the results further investigated through a Principal Components and Cluster Analysis programme.

The outcome of the study indicates that some past observations on the skills and attitudes of transport managers may have to be re-examined. As a result, the project produced a new classification of road transport firms, based not on the conventional categories of long and short haul, or the types of traffics carried, but on the marketing policies and management skills employed within the organization.

ASLIB WORDS: Road Transport: Successful growth policies: Hauliers re-classified:

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DIVISION 1.

This first division is essentially introductory. Its main functions are;

To explain the background to the study.

Examine existing knowledge and investigations on the subject.

To review the objectives and methodology of the project.

## CHAPTER 1. THE ORIGINS OF THE PROJECT.

The study has its roots in the researcher's long standing interest in Business Logistics. It is an area where he has been active since 1967 and consequently to illustrate the path which led to this investigation of the West Midlands Road Road Transport Industry a brief review of the core activities of Business Logistics is believed to be apposite.

Logistics is concerned with the role of place and time characteristics in the cost structure of business activity. A general illustration of this is shown in Exhibit 1.

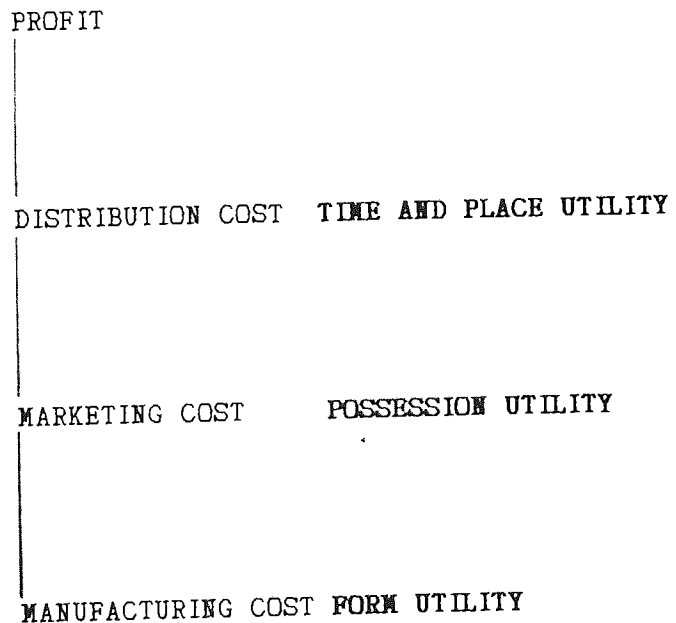


EXHIBIT 1.

Most authorities would agree that a major objective of business enterprise is the generation of satisfied customers, with a resultant profit for the firm. It can be argued that the concept

of " satisfied customers" can be looked at in the light of the utilities which the customer perceives as being generated from the consumption of the business's products and or services.

Most, although not necessarily all of Form Utility creation can be said to take place in the manufacturing process. It is there that the business acquires its raw material and forms it to the specifications, shapes and nature to match the firm's perception of the physical characteristics of the type of product that its customers will desire and purchase.

Possession Utility is generated by the marketing function. The marketing activity informs the consumer of the existence of the product, its special qualities and properties, and brings together the transaction processes of the enterprise and its customers.

The creation and execution of Time and Place Utility is the provence of Business Logistics. In essence a product must not only be of the target quality and price but must also be available at the right place and time. In other words, a product of superb technical specification at a competitive price would be ineffective in the market place if supplies were not provided over a time span comparable to its competitors similar products.

It is seldom the case that the "raw material", the processing point and the customer are at the same location. It is because of this spatial disparity that movement decisions are a key element

in logistics planning. It should be noted at this point that "raw materials" does not necessarily need to mean primary raw materials, but includes whatever component input which is required for the firm's manufacturing process.

The system required to ensure effective satisfaction of the time and place utility is complex, and is one which ultimately relies on the transport function. The choice of mode required to ensure the effective movement of materials involves not only basic cost considerations but the more complex element of time.

This time element and its effect on other operating centres within the organization is at the core of the logistics management function. It is indeed the factor which first attracted the researcher's attention to this particular area. If we regard transport outlays as being divided into two areas, namely rates and costs, the situation may become more clear.

The transport rate associated with a particular transportation mode might be regarded as the price paid for the actual movement of material between any two or more particular points. The transport cost when seen within a Logistics format, includes not only the transport rate but all other associated cost factors. In simple terms, if the key decision concerning the choice of transport mode was simply the transport rate, then most material within the West Midlands would still move by canal barge. It is self evident however, that most goods do not move by canal, this

is due to the fact that the other logistics costs (especially time) are either directly or indirectly weighed in the decision by the management involved. This effect, whether it is openly or tacitly acknowledged by the management concerned, results in the transport decision affecting a wide range of activity centres within the firm.

This position must lead us on to a slightly more rigorous definition of the areas of interest covered by the term, "Business Logistics"

## CHAPTER 2. BUSINESS LOGISTICS

Business Logistics has been defined as "a term employed in manufacturing and commerce to describe the broad range of activities concerned with the efficient movement of finished products from the end of the production line to the consumer, and in some cases includes the movement of raw material from the source of supply to the beginning of the production line. These activities include transportation, warehousing, materials handling, protective packaging, inventory control, plant and warehouse location, order processing, market forecasting, and customer service." Christopher 1981.

We do not need to agree with this definition in every detail to accept the view that the logistics function is a very complex one!

The operating areas and decision factors are indeed involved, but the objective in this report at this stage, is not to enter an in depth exposé of logistics but to emphasise the key role which the transport decision plays in the logistics system.

Most manufacturing systems include the elements shown in Exhibit 2.

"RAW MATERIAL" → PROCESSING → CONSUMER.

### EXHIBIT 2.

By "Raw Material" is meant whatever is required for the firm in question to perform the processes it sees as its function, in to-

days industrial structure more often than not, some other firms finished product.

The logistics activity is focussed on the reality that it is only in exceptional situations that the "Raw Material", the Process Point, and the Consumer, will all be in the same geographical location. Nature and history usually dictate a greater or lesser degree of spatial dispersion. This distance influence is at the core of the time and place utility consideration, and consequently the role of transport within the logistics universe is central. To illustrate these points a basic paradigm of the logistics function after Christopher 1973, is shown in Exhibit 3.

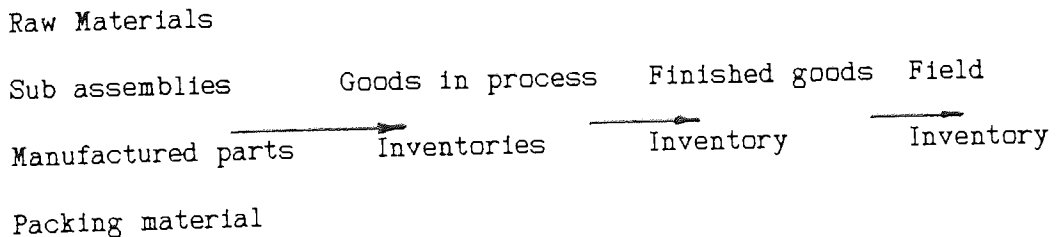


EXHIBIT 3 .

The elements in this paradigm have two characteristics both inter-related and both of crucial importance for the transport operator, these are;

**Function**

**Location**

The function of the various elements, that is the physical needs they satisfy is obviously dependent on them being available to the

consumer at a particular time ,but that availability must be spatially coincidental with the location of the consumer;they must in other words not only be present within the company distribution system but they must be in the right place at the right time-a role provided by transport.The theoretical function of an element within logistics cannot be valid without the physical presence of the material in the right place,or location.

It might therefore be appropriate to examine these two qualities in slightly more detail.

It is obvious from Exhibit 3. that inventories play a key role within any logistics network.The prime role of such stocks is to act as a buffer between variations in demand patterns and production schedules. In this respect they perform a function very analogous to a water reservoir within a water distribution system. They accept goods when demand is low in anticipation of increases in demand later.

Market conditions are quite likely to include demand patterns which are disparate from the "ideal" production plans. The demands of individual customers may be in units which are quite different from the most economical size for movement between production points and inventory holding locations.At the same time the high costs which at least for some product categories,are associated with high inventory levels mean that the distribution channel will attempt to keep such inventory levels as low as possible -



consistent with a given attitude to customer service levels. Since stock is acting as a link between the various patterns of demand and production the time component of its replenishment lead time is vital.

## LEAD TIMES

Replenishment lead time is the time which elapses between the need for new supplies being perceived and their arrival and availability for use. This cycle includes many elements. Christopher 1980 lists the most important as;

Order Transmission times.

Order Preparation times

Transport times.

Transport time is best regarded as the time lapse between the dispatch of an order from the supply point and its receipt at the place of usage.

Order Transmission times includes all the time elements involved in the actual physical movement of the order statement from request point to point of potential fulfilment. A major consideration here-one which will be returned to later is the role of modern IT methods. Even at this early stage it might be more accurate to talk of potential use rather than widespread implementation.

Order Preparation times are again an area where there might be said to exist very wide potential opportunities for improvement although these are really outside the scope of the present discussion. The area referred to is the clerical and management effort absorbed in the actual making up of the documentation necessary for an order. This is an activity where IT applications might achieve major financial savings.

The Time Quality of the transportation mode chosen is a major influence on the overall replenishment lead time and as such on the total inventory levels within the distribution network.

All other things being equal a longer transport cycle will mean higher and more costly inventories than a shorter one. The nature of the transport decision therefore affects inventory costs; highlighting the difference between transport rates and transport costs. Rates being the price for the transport service, costs being the total outlays associated with a particular transport choice. The two are often very different.

#### **INVENTORY AND PDM MANAGEMENT**

As explained by Howard 1979, *"The whole process of physical distribution planning can be seen as a dynamic mechanism with many constituent parts, each more or less vital to the efficient operation of the total system. In a sense the holding of inventory can be likened to the role of lubricant in the functioning of a*

machine. The lubricant is independent of the power source and similarly inventory, which is an idle resource, would seem to make no contribution to the well being of the enterprise. However, without the lubricant the machine would sooner or later grind to a halt, and without inventory an enterprise would be affected in a similar manner". In much the same vein Murphy 1978, says "Given the assumption that the role of distribution management is to achieve a pre-decided customer service level at minimum cost, then as soon as the transport decision is taken the volume of inventories will be affected throughout the distribution system. This is the root function of inventory, it acts as a buffer between fluctuations in demand and production schedules. Effective control of the inventory area can make a significant contribution to the profitability of the firm, just as its neglect can result in a reduction in the overall efficiency of the organization"

Inventory levels are thus acknowledged as being of prime importance in the logistics system. A more effective transportation organization might reduce this time element, with no reduction in customer service levels, hence achieving a lower overall cost of inventory policies. The transport decision is again seen as having an effect on activity centres not at first linked in the manufacturing manager's mind with the choice between various transportation modes. This emphasises the importance of the transport function within the logistics network.

These inventories must, however be physically "held" within the distribution system. The quantity and cost of these stocks will be very much influenced by the time-space-location relationship between the holding points and the firms markets. These relationships will affect the time element in the movement of merchandise from the production point to the depot or warehouse.

### THE WAREHOUSE

The warehouse has two roles to play (at least for our purposes at this stage). On the one hand it holds the surplus goods produced by the production points. In this activity the replenishment lead time from the production point to the warehouse will affect the level of inventories held, and on the other hand the pattern of demand in the market will affect the amount of product that must be kept to meet a particular customer service policy.

If a known quantity of inventory is required within a distribution network to meet a predecided customer service level, then for given space and time relationships between production points and markets, the size and number of the firms warehouses will be significantly affected.

The volume of throughput for any particular configuration of warehouses must affect not only primary (construction) but also operating (secondary) warehouse costs. Consequently it might be held that the total costs of the warehouse network will be influenced

by the scale of the inventory commitment which, as has already been argued, is affected by the basic transport decision.

To summarize this approach; the transport decision through the time element will affect inventory size and costs, these will affect total warehouse costs and there is also likely to be a knock on effect to protective pack costs and to administration costs. The result being called by Murphy 1978, the Logistics or Total Distribution Cost Triangle as in Exhibit 4.

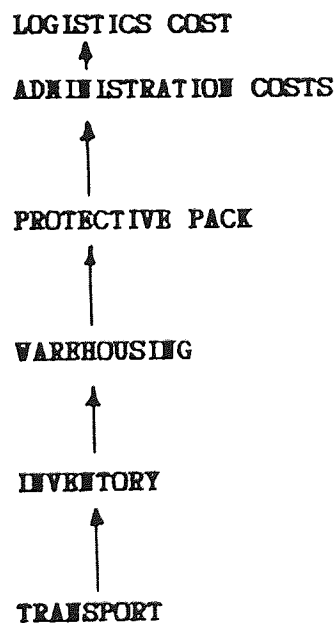


EXHIBIT 4.

The original source of interest in the logistics area arose out of a desire to investigate the factors affecting industrial location in the regions of the United Kingdom most specifically Scotland. Over a period of time it was concluded that a major factor involved was the influence of materials movement choices. This in turn eventually produced interest in the TDC triangle. In

attempting to investigate the TDC factors, the outlook of various American authorities in the field began to assume prime importance. The majority of these tended to confirm that transport was the prime base building block. As knowledge and interest in this general area developed, the researcher formed the belief that it was necessary to pursue a greater depth of interest in the transport factor as an area of study in its own right, as opposed to a building block within the logistics function. This is not to imply that the overall co-ordinating function of the transport decision should be ignored or down graded, merely that certain areas of operational importance in transport appeared to demonstrate gaps in information which it was concluded should be further investigated.

#### **MOVEMENT ROLE OF TRANSPORT**

This brief exposé of the elements of Logistics -as has been already mentioned, is intended only to highlight the belief that complex though the logistics system may be, the key element throughout the network is the transportation decision. This core aspect of transport might be illustrated more clearly by reference to Exhibit 5. after La Londe 1978 .

In this model as opposed to Exhibit 3. the main interest is directed towards the flow aspect of transport's contribution to the logistics network.

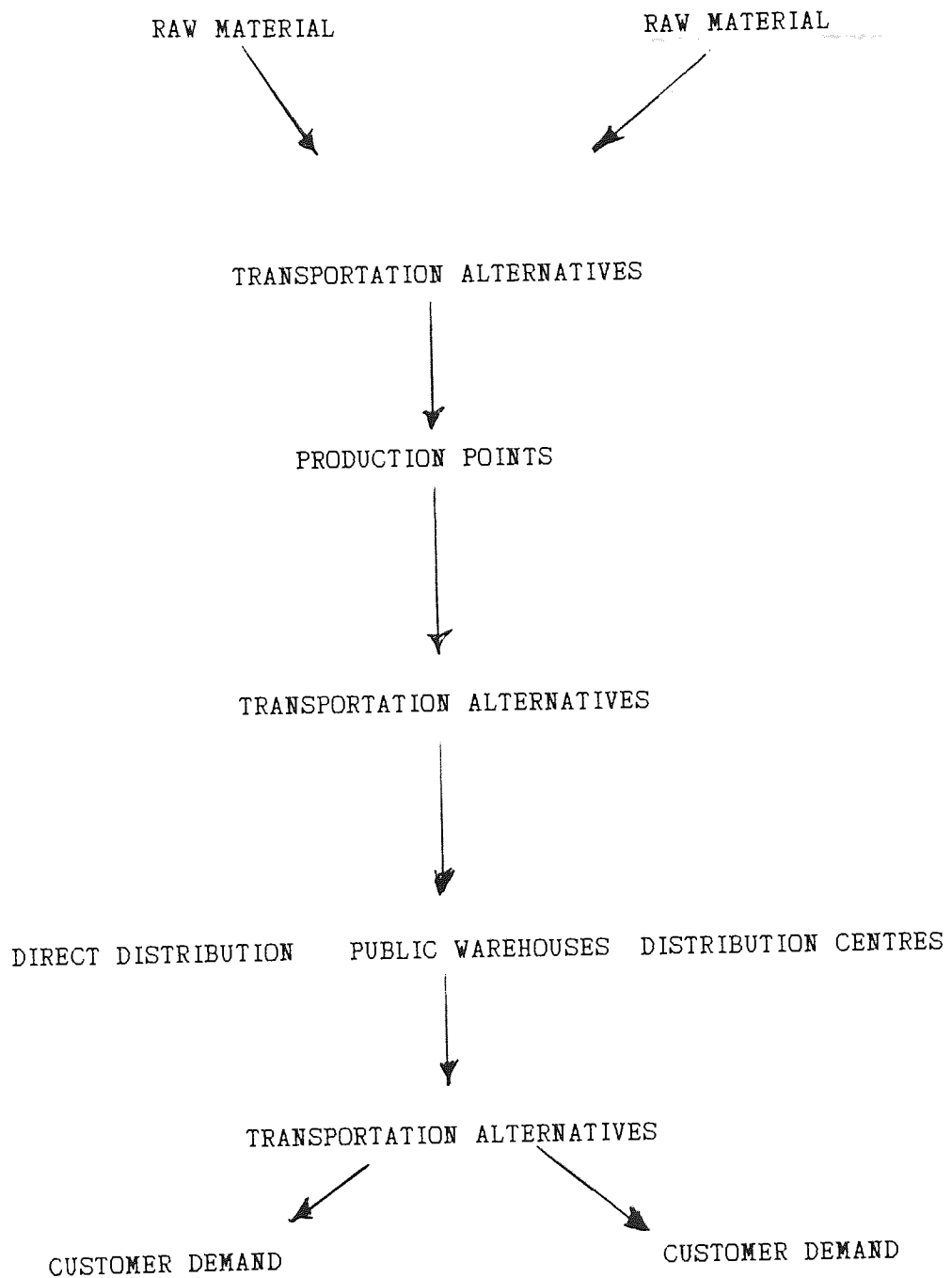
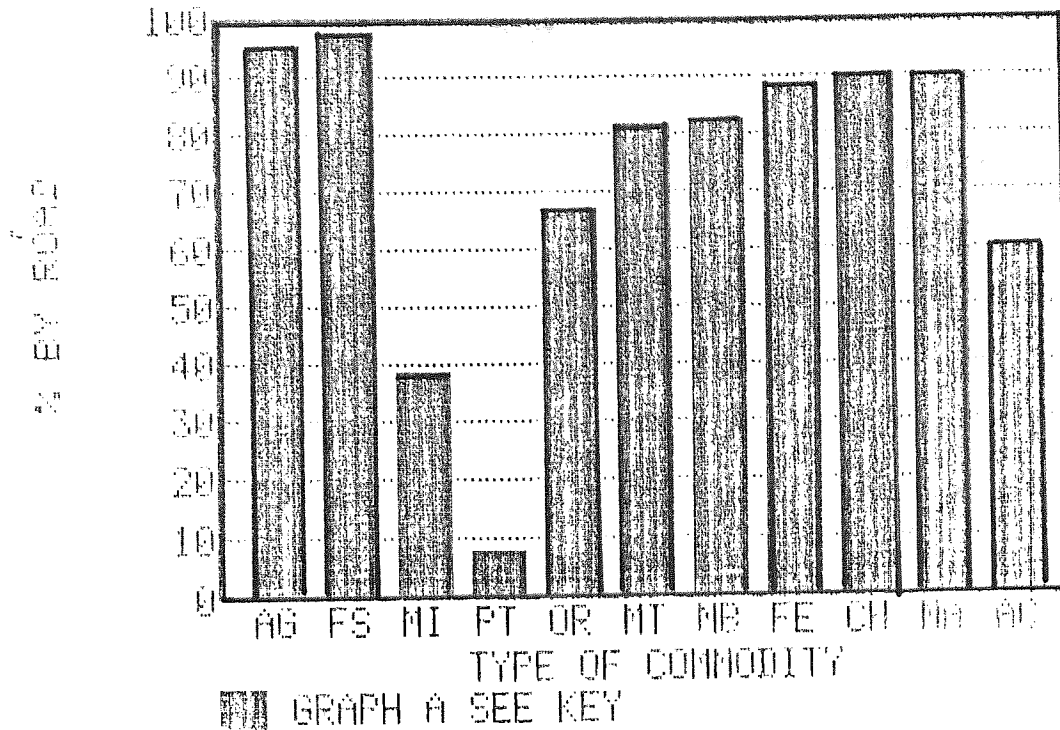


EXHIBIT 5.

There are of course a wide range of transportation modes available to any firm, however experience in the general area resulted in attention being focussed on one mode in particular, road transport.

%GOODS MOVED BY ROAD 1986



- AG= Agricultural Products
- FS= Foodstuffs
- MI= Mineral Products
- PT= Petroleum Products
- OR= Ores
- MT= Metal Products
- MB= Minerals & Building Materials
- FE= Fertilizers
- CH= Chemicals
- MA= Machinery
- AC= All Commodities

Exhibit 6

To show the importance of road transport. The percentage of various commodities moved on the roads.



## IMPORTANCE OF ROAD TRANSPORT

Exhibit 6. illustrates the reason behind this attention, as is obvious the overwhelming majority of merchandise classes moved within the United Kingdom move by road. Given the interest in logistics, the importance of transport choice and the essential nature of road transport, a desire to investigate this sector was almost inevitable. This desire was compounded by what were seen as some important gaps in crucial sectors of knowledge concerning the industry.

Although many investigations have been conducted into the industry they were, prior to 1978, hindered by the licensing system, which made it difficult to distinguish between certain types of operator; most also appeared to neglect the nature of the relationship between management strategies and growth successes.

These two characteristics are central to the basic purpose of the present study. Gwilliams and Mackie 1975, put forward the opinion that the 1970s and 1980s would see a move away from traditional attitudes in this country, based on government control of the road transport industry, towards a position where the market would be the major controlling force, and not a whole framework of complex legislation. A standpoint re-enforced by Hibbs 1982, *"It is commonly assumed, though seldom enunciated and even less often challenged, that there is something special about transport- particularly railway and urban transport- which exempts it from*

the normal 'laws' of economics and necessitates a much greater control by government than would be expected of any other industry."

In other words authorities were putting forward the belief that the transport industry should be more open to competition, entry to the industry would not be controlled on the basis of long standing myths, but rather market forces would determine whether new firms were needed or not. If they were, then they would continue in existence, if not, then they would simply go out of business.

#### **THE BASIC QUESTION**

This system of control or lack of a system, raises an important question. What makes a firm engaged in the transport industry successful? This is the very question which after much searching was felt to be not fully answered by previous work and which led to the present project directed at the professional haulier in the West Midlands Road Transport Industry.

#### **THE HAULIER**

In any attempt to try and increase knowledge of the haulier and his environment, there are some specific areas of background information which must be first addressed.

The reality of the haulier's world is that it has become increasingly more complex over the past ten or so years. This increasing diversity of operating conditions can be categorized into two broad causal areas:-

The apparently endless and rapidly growing mix of customers needs and requirements;

The almost as rapidly growing variety of management methods and vehicle types available to the road transport professional to satisfy these needs. These means becoming ever more technologically based and expensive as their "market satisfaction" capability expands.

### CHAPTER 3. THE SIZE OF THE ROAD TRANSPORT INDUSTRY

Transport is the subject of a derived demand. Road transport-or any other form of transport, is demanded so that goods may be moved for production and or market reasons. It could reasonably be expected therefore that the size of the transport industry is very much influenced by the level of general economic activity.

The object of this thesis is a sector of the road transport industry and thus the project is interested in explanations of the relationship between the size of the transport market and general business levels, and the share which the road sector might expect within this global demand for transport. The specific target of the study is not the industry as a whole however, but the individual enterprise, and the strategies by which it can succeed. It is held therefore that the legitimate interest is not necessarily in the detailed mathematical intricacy of any relevant relationships between economic activity and the overall size of the transport industry but only in the general direction which may result from such relationships.

There are two broad areas of interest, in the first instance the effect of changes in national activity on the total transport market, and secondly, attempts to resolve the modal split question, that is the relative share of the total market going to individual transport modes. This second element is intimately tied

up with the question of competition between modes and ultimately between operators.

## TWO BASIC APPROACHES.

In any approach attempting to indicate the likely direction of demand for transport there are certain basic influences which must be taken account of. The two principal actors are the Central Government and the Industry itself. Government will seek to affect the supply of transport either directly by legislation and regulation or indirectly by decisions affecting infrastructure investment. The industry will influence the level and nature of transport activity through its decisions concerning the quality and level of transport services entering the market.

Although there are a wide range of individual models that have been developed over the years they all contain some common threads. The first and perhaps most important principle centres around the acceptance of freight demand being essentially spatial in nature. Transport systems are defined in a spatial way the variable of interest, that is the demand for transport is also spatially determined. That is to say demand is defined on a region to region or zone to zone basis. The demand for transport in the West Midlands is regarded as being dependant on the need for movements within the region and between the region and other areas.

The fact that transport is a derived demand means that the most important component of demand is the pattern of economic activity within and between the locations being investigated. The demand for transport will be determined by the level of economic activity, the composition of that activity and the geographical relationships between the production and consumption activities of the region.

The supply of transport will obviously be affected by the way in which the industry responds to the costs and profits available in the market place. These will be influenced by the physical transport infrastructure, the cost models employed by the enterprises engaged in the business and their perception of the levels of reward available. The overriding external influence on the supply side is government regulation of which much more will be said later.

#### **AGGREGATED AND DISAGGREGATED MODELS.**

Aggregated models rely on using data concerning composite traffic flows between regions as a basis for forecasting, whereas disaggregated models try to base their forecasts on the investigation of the movements of individual consignments. The literature in this area is very extensive and is of interest to this project only in as much as it points the way towards some of the factors which may be taken into account when investigating those qualities of an enterprise's output which may attract

customers, either to the generalized mode within which it operates, or to that enterprise as opposed to a competitor.

Stopher and Meberg 1976, Domencich and McFadden, 1975, Ben-Akiva 1973, Quandt 1972, and the Dutch Ministry of Transport Study 1977, are all typical of these approaches.

The aggregate approach would involve a variety of stages. A multi sectoral economic model would be developed to forecast the likely supplies and demands of the various sectors of the economy. This is followed by a spatial model to show the spatial relationships between the economic activity sectors and the various regions and or zones under investigation. The next step is the introduction of a freight production and attraction component, which relates the total transport volume of each commodity sector with the gross output of those commodities in each sector. The next stage is to determine the modal split, that is a model is developed to forecast the share of the total transport movement which each mode will obtain. The final step is to transfer these model split estimates into vehicle movements, or whatever the basic unit is for the mode under consideration.

The disaggregated approach is based on the investigation of the choice behaviour of the individual firm. The total demand for transport can be assumed to consist of a number of individual consignments about which the individual originator of the movement must make a series of transport related decisions. Each

decision is made within a set of related alternatives, and a hierarchical decision process is developed. The ultimate objectives of the models used is to allow the estimation of the probability that a shipper will select a particular mode from a given set of alternatives, based on the characteristics of the modes available and the properties of the commodities to be moved together with the market destinations.

#### DIFFERENCES BETWEEN APPROACHES

The main difference between the two methods of tackling the forecasting of demand for freight services rests on the choice of research unit. The major advantage of the aggregated approach is the vast store of readily available data which can be employed. Most of the basic data required for use in such models have already been collected by state bodies. The individual firm is never employed in the studies since all input and outputs are on a global basis. The principal disadvantage of the aggregated approach, and the chief reason why disaggregated models were attempted, is the lack of sensitivity to individual shipper's behaviour which is inherent in aggregated models.

Of more import are the methodological objections which can be raised against the disaggregated models, van Es 1982, concludes "*.. it is doubtful if a complete disaggregated freight demand - supply model system ..... can be developed. This is especially true where the integration between the economic activity models and the*



*derived freight demand functions are concerned. The specification of the freight demand models (choice of variables and sets of alternatives )still cannot be solved by the choice- based demand theory itself."*

This is of great interest for the study at hand. The general aggregate models are conventionally accepted as being able to indicate the general direction of growth within the overall freight market. The approaches which might be able to provide detailed estimates for specific traffics and modes ( the disaggregated method) are held by the Authorities to be basically flawed at their present stage of development. It is however, within the disaggregated universe that the answer to the basic question," In what manner do some hauliers succeed and other fail?" must be pursued.

It remains true, however, that at least some indication of the direction in which overall demand is expected to move can be gleaned from the aggregated approaches.

## CHAPTER 4. ECONOMIES OF SCALE

In general industrial studies it is usually accepted that the existence of economies of scale can act as a positive incentive for firms to grow large. Indeed most authorities would appear to agree that the presence of favourable production factors is a major boost to large firm size profiles for certain industries. The road transport industry has long been subject to argument and counter argument concerning the existence or otherwise of economies of scale. The area is of interest to this project since the position adopted will strongly influence the reasoning behind any search for common factors between successful growth oriented enterprises.

*"Economy of scale and size.... remain suspect at operating level in road transport, where smaller units frequently show levels of flexibility, adaptability, initiative, selectivity, and profit, denied to larger, more general, more 'commodity dispensing' companies."* National Freight Corporation 1971. This statement in many ways sums up the scale problem in the road transport industry, namely that there is a great deal of doubt about the existence of economies of scale, but the review usually stopping short of their outright rejection.

The ECMT convened a round table discussion of the subject in 1975 and came to a similar conclusion. The Round Table examined the subject at some length but eventually concluded *".... it is not in*

*every case possible to present a coherent account of the various arguments since this would not faithfully reflect the variety of contributions to the discussion.....The existence of economies of scale is not always apparent because of certain features peculiar to transport.....The definite existence of economies of scale would therefore seem to apply, when all is said and done, to contract hire work."*

The literature abounds with such apparently contradictory attitudes. Many studies have been undertaken to try to resolve the confusion. The majority adopted a common approach, namely to investigate the variation in costs between firms of different size within the industry. The basic assumption being that if economies of scale exist then smaller firms should experience higher costs than large firms.

Nelson 1956 after an investigation of the New England industry came to the conclusion that " *the size of firm bears little relation to operating costs. Consequently, it can hardly be maintained that there are economies of scale available in the industry,....*". Roberts 1956 on investigating 114 carriers in the United States reached very similar conclusions, " *The evidence adduced for the firms studied establishes the absence of economies of scale in this industry.*"

Some studies especially in the United States, such as those by Warner 1973 , claim that " *their results clearly suggest economies*

of scale." this was supported by an extensive study of 116 haulage firms by Ladenson and Stoga 1976, which concluded that there was evidence to suggest that the optimal firm size was *"greater than the current size of the largest American trucking firms."* Both of these studies were criticised on methodological grounds by Koenker 1977, whose basic arguments centred around input assumptions in both cases. Of especial interest is the fact that Ladenson and Stoga neglected, according to Koenker, to take account of the influence of length of haul and size of load .

The proposition was that larger firms are engaged in markets which have typically larger loads and longer hauls, these require proportionately lower labour inputs and therefore give the appearance of more efficient larger firms if labour output factors are examined. Koenker op. cit. places heavy emphasis on the importance of the length of haul. *"A typical firm whose average length of haul increases by one per cent with the number of shipments unchanged will experience only a 0.35% increase in total costs. A one per cent increase in load weights, shipments remaining constant, would produce a 0.55% increase in costs. Both effects are substantially less than the proportional increase in costs which would be experienced in firms operating at optimal scale from a simple increase in the number of shipments."* Koenker concludes that since the effect of load size and length of haul was so important, exclusion of them from investigations could result in incorrect conclusions regarding the existence of economies of scale.

The investigation of Koenker *ibid*, is of great interest since it supports those of Bayliss and Edwards 1971, that length of haul appears to be of critical influence in the industry. From the point of view of the study in hand the discussion raises the question, that if length of haul is so crucial will this mean that firms with greater average length of haul obtain this quasi scale economy and show faster growth rates than firms engaged in other sectors?.

There are of course, more general arguments concerning economies of scale, these centre around the opportunities available for such economies in vehicle size and in fleet size.

The most extensive study of costs within the road transport industry in the United Kingdom was that by Bayliss and Edwards 1971, which covered the operating costs of some 2,150 haulage fleets and in addition examined in greater detail the operating costs of 4,000 specific vehicles. The survey produced some interesting concepts.

**Vehicle size** The study showed, as might be expected that the annual costs per vehicle increased with vehicle size, predictably the relationship between standing and running costs also changed as the vehicles increased in size. The larger the vehicle the lower the proportion of running costs and the higher the proportion of standing costs. The interesting point was that costs per ton showed substantial reductions with size. The advantages of

larger vehicles were not so apparent when costs were compared on a per mileage basis. Increases in wages and standing costs were not compensated for by correspondingly greater increases in mileage run, and fuel and some other running costs either remained constant or increased with vehicle size. There were nevertheless advantages associated with increasing vehicle size, if the change in cost per mile is compared with the change in vehicle size, then the size change was much greater than the cost per mile change. In some cases a 20% increase in cost per mile being associated with a 50% increase in capacity. It should be noted that such spectacular relationships were found only in the lower weight ranges, the generalization was however valid. Bayliss 1986, used the original data to develop a cost function for the industry and came to the conclusion that there were indeed significant benefits related to vehicle size. The relationship being that an increase of vehicle size by a factor of 1% would result in an increase of operating costs of 0.7%, or if you doubled the size of your vehicle then costs would increase by 70%.

**Fleet size** The logical step after vehicle size is to examine the question of fleet size to ascertain whether or not there are benefits accruing to the larger fleets. This is area was much more difficult to interpret. The survey indicated that costs per mile were substantially higher for the larger fleets than for smaller ones, but this was expected as the study also showed that larger fleets tended to have a greater proportion of larger vehicles with their associated higher operating costs per mile. It would be

expected that this would be counterbalanced by a low cost per ton unladen weight , as has just been mentioned the cost per ton unladen weight fell with vehicle size. The survey did not bear this out however, with costs being slightly higher for the larger fleets. It was felt that this could be explained by the trading pattern of the larger fleets. As the size of fleet increased the tonnage per vehicle carried declined, whilst the mileage per vehicle remained virtually constant for fleets above 5 vehicles.

This increase in underutilization of vehicles in the larger fleets appeared to offset the advantage of larger vehicle profiles. This led Bayliss and Edwards to conclude that *"With the exception of fleets up to five vehicles the analysis, so far, therefore, has given no indication of any type of scale economy."* In the mathematical analysis of the data using regression techniques Bayliss 1986 op. cit. determined that the co-efficient for fleet size was 0.22 whereas that for vehicle weight was 0.74, he concluded that fleet size had no significant effect on the operating costs of individual vehicles.

Gwilliams and Mackie 1975, point out that there is a class of evidence which was not available from the Bayliss and Edwards survey which might have had an effect. The larger fleets might have reaped benefits which would not show up in the crude cost per unit of capacity figures which the study produced. Such advantages could relate to factors such as higher quality of service or greater utilization of vehicle capacity. If this were

the case, then the result could have been the obtaining of higher revenue per mile returns which then could be seen as balancing the higher costs of operation. In fact receipts per mile did appear to rise with fleet size but not in a continuous manner. In the 1978 Price Commission Report, it was noted that "*large operators tend to receive a higher revenue per mile and per vehicle than other sizes of operator but this is more than offset by higher direct costs.*" The examination of this subject resulted in the opinion that the original conclusion in the Bayliss and Edwards study was correct, within the parameters under which the study and subsequent analysis were undertaken.

The general conclusions of the most detailed investigation of fleets in this country was that there was no evidence of economies of scale, that all indicators pointed to constant costs. This conclusion which seems to be the consensus, although not without some dissenters such as Smyky 1958, Walters 1961, Harrison 1963, Dicer 1971, and others, is important for the basic objective of this study.

If there are no economies of scale, and indeed some evidence of dis-economies such as by Chisolm 1959, what type of firm grows in the industry. What factors typify the growth enterprise?



## PROBLEMS IN THE SURVEYS.

The Bayliss and Edwards study 1971 *ibid.* did have some problematic areas and these are also considered of legitimate interest.

**Cross sectional data.** The weight of evidence from most studies of operating costs in the professional sector of the road transport industry is in favour of constant individual vehicle operating cost in relation to fleet size. At the same time most analyses of national fleets show firms within the industry of all sizes, ranging from one vehicle owner drivers, to fleets with one or two hundred vehicles, furthermore there is some evidence to indicate increasing average size of fleets and greater market share of the vehicle fleet by the larger companies.

There is a general question posed by this, namely do the studies based on cross sectional data which show no economies of scale contradict the industry trend towards larger fleet sizes? The basic standpoint is that the real nature of the cost curve for individual firms may not be capable of being accurately estimated from cross sectional data.

Walters 1963, identified several sources of bias in cross sectional studies. The most important for the type of study undertaken in the road transport industry was related to the problem of outputs. *"In cross sectional studies firms with the*

*largest output are unlikely to be producing at unusually low levels , but on the contrary are likely to be producing at unusually high levels, while firms with low levels of output are likely to be producing at unusually low levels. Thus some of the low output firms will have costs associated with larger firms, and some of the higher output firms will have costs associated with lower output firms. The effect of this is to flatten the estimated cost curve."*

This is of course of special interest in the road transport industry where there is such a variation in utilization of vehicles. Since the evidence would suggest that there is increasing productivity with increasing size of fleet, then the very variations which Walters placed so much emphasis on as one of the major sources of distortion are likely to be present.

Cross sectional data actually tells us very little about the behaviour of an individual hauliers costs over a period of time. If small firms which grow in size do not continue in existence over periods of time, then this could be taken to indicate that there might be dis-advantages associated with increasing their scale of operations. The most likely area being perhaps in managerial inadequacies. On the other hand, if medium and larger sized firms increase their share of the market and continue to prosper, this might indicate that they have some advantages over the smaller scale operations.

### FLEET SIZE AND HAUL LENGTH

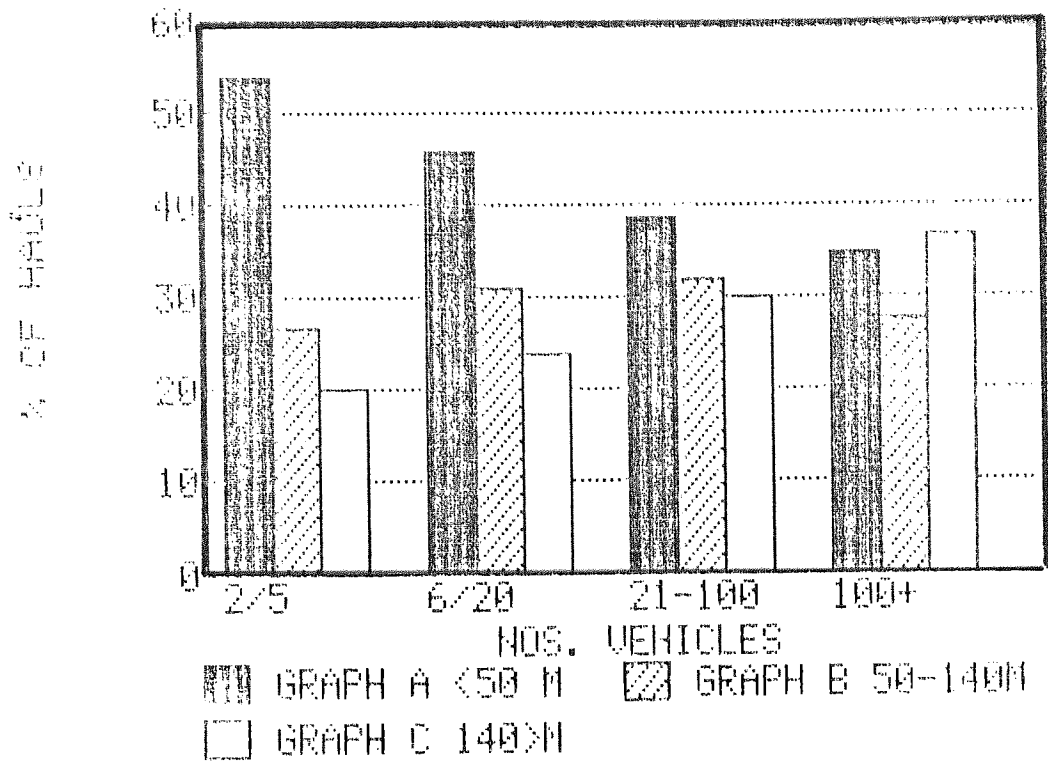


Exhibit 7

To illustrate the importance of local traffics to the smaller firm. As fleet size increases so does the average length of haul.

Source Price Commission Report.

of growth in the professional sector of the West Midlands Road Transport Industry, as it evidently had been in the sample which Bayliss investigated in the South East Area. Most particularly, attention could be focussed on the means whereby firms became larger, what portfolio of strategies were likely to be the most effective?

There was evidence from the Price Commission Report 1978 *ibid.* that hauliers in general relied on their local area for a significant part of their traffics. See Exhibit 7 . Since Bayliss suggested that different size fleets may be predominantly engaged in different sectors, then it could be hypothesised that fleets of similar sizes should be capable of being identified by geographical area. If the type of industrial activity in these areas could be identified, then the nature of practices and the requisite strategies for success in those markets could be investigated.

All surveys can be taken to produce information which indicated that small and large firms could be carrying out differentiated work tasks. The larger fleets seemed to include a greater proportion of bigger vehicles, average tonnage carried per vehicle was greater for small fleets than for larger ones, and mileage per vehicle is greater for larger fleets than smaller ones. Bayliss and Edwards 1971 *ibid.* Larger fleets had a greater percentage of their total vehicle mileage run carrying a payload, relied less on their local traffics, and operated their vehicles for longer hours

# UTILIZATION OF VEHICLES

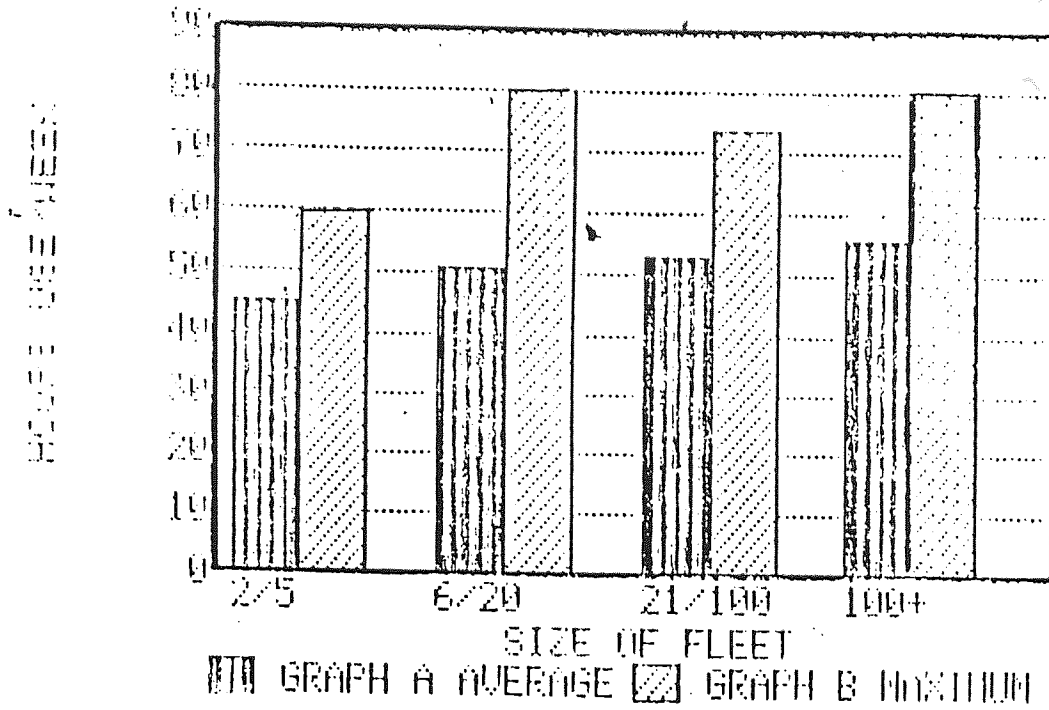
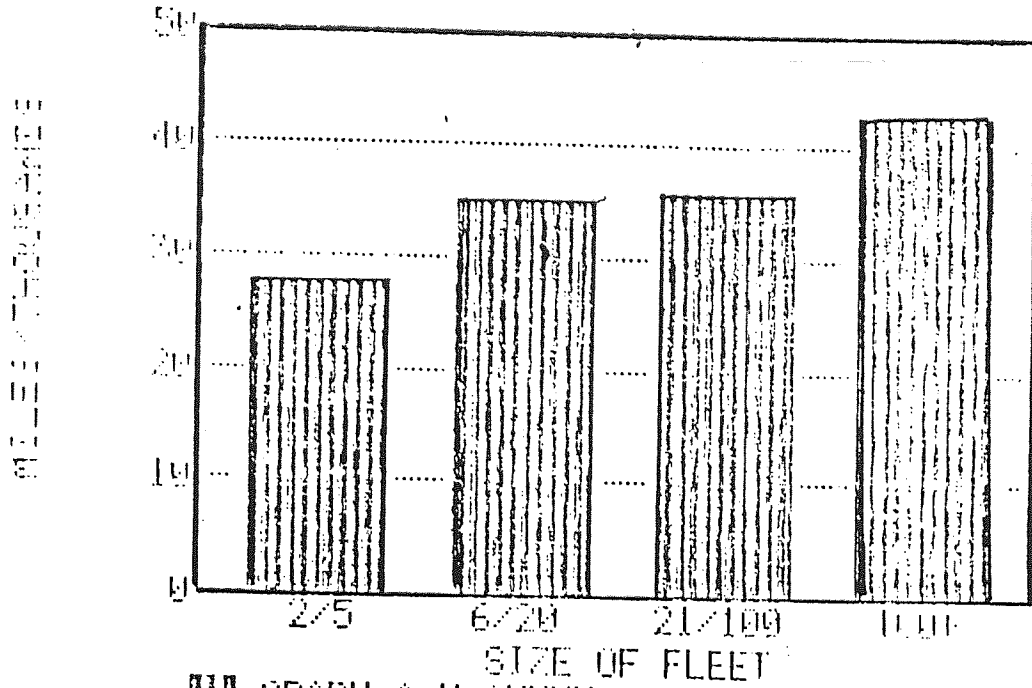


Exhibit 8

To illustrate the variation in utilization of vehicles with size of fleet.

Source: Price Commission Report.

000 MILES RUN/VEHICLE



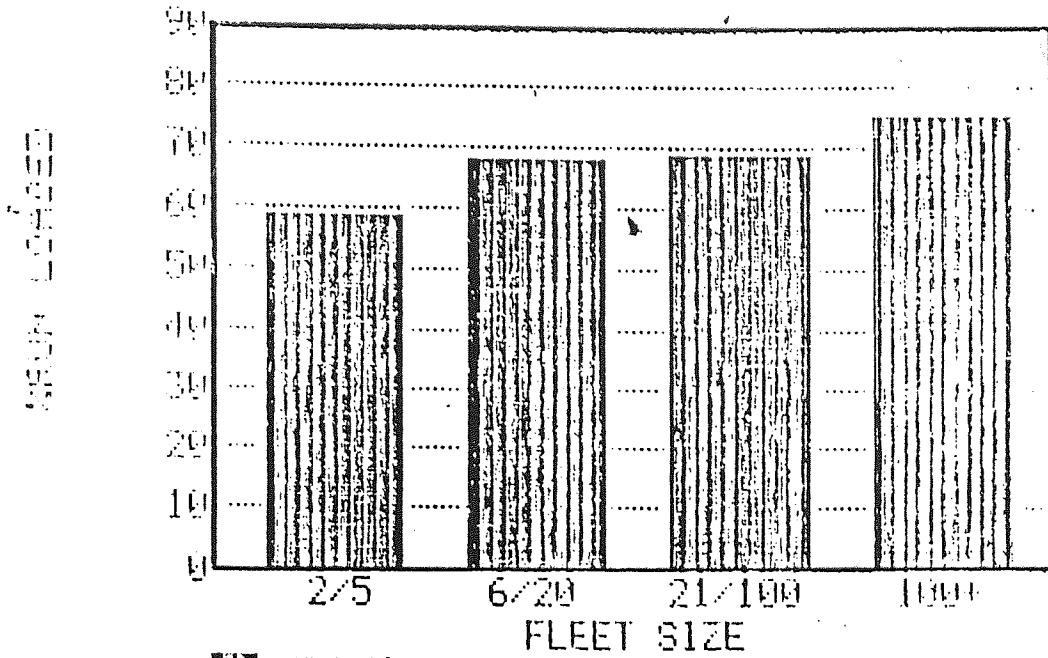
GRAPH A MONTH

Exhibit 8

To illustrate the variation in utilization of vehicles with size of fleet.

Source: Price Commission Report.

# MILES RUN WITH PAYLOAD



GRAPH A

## Exhibit 8

To illustrate the variation in utilization of vehicles with size of fleet.

Source: Price Commission Report.

on average. Price Commission 1978 *ibid*. See Exhibit 8. It was therefore felt legitimate to examine the situation on long haul routes to try to determine the influence such routes have had on growth rates in the West Midland Professional Sector.



## CHAPTER 5. COMPETITION

The core objective of the study nevertheless remained to examine the means whereby individual hauliers succeed, this of necessity involves an examination of the methods of competition employed. The detailed discussion of this area is reviewed in the Second Division , it is none the less of interest to evaluate what the literature remarks upon in terms of how competition is conducted within the industry.

In fact, there has been comparatively little attention directed at this area, and most authorities tended to look at specific traffics or to take broad viewpoints concerning the general nature of competition

There are however three broad areas of interest .These are in the first instance competition between the professional haulier and the manufacturers own transport, and then competition with other transport modes, and finally the type of competition employed between hauliers.

### INTER MODAL COMPETITION

The dominant position of road transport within inland transport in this country is both well known and has already been discussed. In terms of the modal choice decision the models evolved to account for the final choice are indeed complex. They

do all however, have a common approach which is to decide those factors which have the greatest perceived influence on the decision to send a firm's goods by one or other of the transport modes available . It is reasonable to hold then that an examination of the types of factors included in these models can be taken as an indication of the influences which will move such decisions in one or other modes favour. This in turn indicating the degree of success, in terms of competition, between the modes within those parameters which have been deemed to be the most significant.

Many modal split models have been developed, the main differences between them tends to centre around the inputs which have been assessed as being of most importance, these in turn have to be thrown up as a result of empirical studies.

One of the most extensive of such studies was carried out in 1966 and 1967 under the sponsorship of the Ministry of Transport resulting in the publication by Edwards and Bayliss in 1969, of important conclusions concerning the modal choice area.

The project considered that the likely factors influencing the choice between transport modes could be divided into three main areas.

Factors relating to the consignment in question such as; length of haul, consignment weight, performance of ancillary services, use of special vehicle or waggon and journey time among others.

Factors relating to the firm; including location, number employed, and ownership of a rail siding.

Subjective assessment of the quality of service; these included for example, such elements as ready availability of a mode, the speed of delivery, damage record, charges by alternative modes and so on.

In analysis when attempting to explain the choice between alternative transport modes, especially the use of own transport as opposed to a professional service (either road or rail), length of haul emerged as the overwhelmingly important factor.

Consignment weight appeared to be the only other significant influence. This of course re-enforces to some extent with the concept of reserved markets examined later, but the dominance of length of haul was surprising within the context of the study. The study showed that the qualitative aspects together with price factors were of little statistical significance in deciding modal choice and hence by inference, of little importance in competition between modes.

When the analysis was switched to deciding simply between road rail-as opposed to between own or professional operators, length of haul and consignment weight were once again the most important elements.

Some objections have been raised to the Edwards and Bayliss study. In the first instance, it was felt that it was possible that respondents to the survey might pretend a more extensive knowledge of prices in the industry than was the case, the researchers thus requested that transport managers should not state prices from other modes unless they knew the alternative price exactly. The effect of this was that some 75% of consignments were not accompanied by a statement of prices for the alternative rejected modes. It was probable that many of the managers who did not provide a price in this way, knew from experience that the alternative was too expensive but was not aware of exact rates. Thus by excluding cases where price differential was of importance, the survey analysis was biased against showing price as an important factor. The second area of concern relates to the status of the variables used in the analysis. If a case could be made that short haul journeys can be made more quickly by own account transport-which is extremely likely in most circumstances, then the statistical analysis might show length of haul as a critical factor when in fact it is speed of delivery. The study included both length of haul and speed of delivery as causal variables and this makes it difficult to interpret the results with respect to certain types of markets. This is reinforced when it is recalled that about 60% of tonnes moved by road in this country move on journeys of 25 miles or less, and about 78% on journeys of about 50 miles or less.

A further study was felt necessary by the Ministry and this was conducted by Sharp in 1969, resulting in publication in 1970, of results which indicated that speed of delivery and relative price were the two main areas of influence in the modal choice decision. The main point of interest in the Sharp 1970 study, was that there was no attempt to directly compare the relative importance of cost and quality of service variables. There were however direct explicit views on the subject, centring around the the belief "*... that rates and quality of service both pulled in the same direction.*". That is, higher price services also tended to be higher quality services, hence where quality elements were stated as important transport managers expected to pay for them, indeed Sharp points out that managers specifically stated they often would not use cut price services because of the low quality of service they expected.

Sharp investigated some 125 firms in the West Midlands, the quality of service factors included in the study and the number of firms ranking them of importance are given as;

Speed of delivery, 44. Low loss or damage level, 24. Provision of special containers or vehicles, 8. Provision of national network by one haulier, 8. Low packaging costs, 7. Regular collection of consignments, 6. Good customer relations, 4. Guaranteed delivery times 4. Ancillary services on delivery, 4. Avoidance of rate and service comparisons, 4.

The significant feature must surely be that aside from loss and damage speed of delivery was the overwhelmingly important characteristic considered as affecting modal choice.

No other surveys to date have been quite as wide ranging as the Sharp and Edwards and Bayliss studies, it must be concluded that the areas of most importance in deciding between modes concentrate around consideration of price and quality of service, but not to the exclusion of the other factors.

It is apposite however to introduce a note of caution in the argument concerning the results of these two projects. It is certainly true to say that there have been no other studies in this country which match Edwards and Bayliss and Sharp in their breadth but there has been work conducted abroad, especially in the United States and on the Continent. The concept of reserved markets may have some implications for the subject under review.

#### **RESERVED MARKETS**

Some studies in the United States, notably by Roth 1977, and in The Netherlands, especially Blauens 1984, and Voigt 1985, hold that there are particular sectors of the transport market 'reserved' for individual modes because of the nature of the product, the market and the type of transport service demanded. Blauens puts forward the belief that within its reserved market

road can vary its price upwards and its service downwards within quite wide limits without any decrease in demand.

All their evidence indicates that the reserved market for road transport covers the short haul, medium sized consignment traffics. This would seem to indicate that far from the Edwards and Bayliss and Sharp studies contradicting each other, they might very well have been looking at different parts of the industry without realising the implications of this.

To have fully investigated the elements the studies were directed at, then the samples surveyed would have had to either totally exclude or include firms involved in the reserved market for road transport; or at least so divide their areas of activity that the same split could be achieved. If such firms had been totally excluded then a true picture of the factors which influenced modal choice might have been possible, since firms were in fact exercising real choice. If the survey was conducted only among firms within the reserved market, then the factors affecting the choice between own or professional hauliers, or between professional hauliers, could have been effectively examined. As the surveys were carried out, neither approach was adopted and hence the selected samples could very well have had a bias one way or the other. In effect a stand might be taken that in specific conditions both sets of results may be correct. It is also of importance to note that whilst these projects were concerned with modal choice, this was not defined to exclude the choice between

own account and professional haulage, indeed such considerations were central. It is reasonable therefore to infer that the choice between transport suppliers within the same mode will also be much affected by these areas.

#### THE EEC FREIGHT MODEL CONCLUSIONS

In reinforcing the conclusions reached in these two major projects, it is of interest to note that the modal split model employed in the European Community Freight Model has been influenced by their conclusions. Jan van Es *ibid*, states that in studies employing the model *"In all countries for all commodity groups the most important factors which influence the modal split are;*

*The level of transport costs of different modes of transport.*

*The level of transport times of the different modes of transport; their modal split influence is primarily via the influence of transport costs.*

*The volume-scale of the transport market in which the modes compete with each other."*

It is interesting also that the European Community Freight Model also includes inputs to take account of the influence of consignment weight on modal choice. The EEC Model is probably the most complex freight modelling development at the present



time. The concept of reserved markets is agreed with in the strongest terms. Van ES op. cit. points out when considering the input influences for modal choice, *"In reality, however, the influence of all modal split factors on the total transport market is diminished by the the simple fact that, for large parts of the domestic freight market, no real competition between the modes of transport exists. This is particularly true for short distance transport which is nearly all carried by road and forms a very large part of the total transport market."*

In the end this a central point in any discussions about modal choice. The combination of road transport's inherent advantages in freight movements of about 100 miles or less, and the patterns of freight movements in this country also being predominantly of journeys of this length, means that road will inevitably remain the most utilized transport mode for **MOST** traffics. This does not obviously suggest that road will dominate all traffics, just the majority of them.

#### **COMPETITION BETWEEN HAULIERS**

The other major area of interest is the nature of competition between hauliers, the literature is again very sparse in this area. The general consensus would seem to be that the industry is one dominated by large numbers of buyers and sellers, where suppliers are mostly small scale and hence the industry is one where competition is intense. As Kritz 1973, points out however, *"Number*

*of firms is not necessarily equal to number of sellers in a given market..... the industry in practice is far more concentrated than the official statistics show."*

The Price Commission report, *The Road Haulage Industry 1978*, was of the opinion that *"Competition within the industry cannot... be easily assessed in any general way."* The Commission felt that this was due to the market segmentation and specialization, both functional and geographical, which they felt were characteristic of the industry. That competition did take place they were not in doubt, but the commission appeared to be surprised by the nature of that competition. *"One of the most striking features of the market revealed by our personal interviews with hauliers, was the general lack of interest among all but the largest firms in the positive promotion or selling of their services and in general forward planning of the business. In the majority of cases hauliers based their businesses on a small number of major customers who provided regular or continuous work."*

These conditions were a classic result of job and or customer specialization. The traumatic changes that have overtaken their customers since the 1978 Report will undoubtedly have had consequences for the professional haulier, and of course the investigation of the nature of the successful firm, which is the core objective of the current study reflects this belief.

The obviously apathetic attitudes which the Commission reported contrast strongly with those of J.A. Harvey, Managing Director of the SPD Group, who in an unpublished paper in 1982 severely criticises the industry for precisely these attitudes.

The Price Commission op. cit., finally felt that for the vast majority of operators in the industry activity really consisted *"of operating vehicles on a day to day basis in accordance with a flow of work which is, in practice, largely outside their control. If work from regular sources were to fall off or be lost for any reason, other work would be sought through telephone enquiries among local businesses or contacts, but few hauliers appear to seek to attract new business on any consistent basis."*

It is of interest to note in the light of the previous discussion of the Edwards and Bayliss and the Sharp investigations, that the Commission stated that, *"It is widely claimed that price is of paramount importance in road haulage and that price competition between hauliers is intense. Our interviews with hauliers and our survey of users have shown, however, that the factor of price is heavily qualified in practice by the factor of quality."*

The Commission went on to conclude that the principal competitive elements included:

Performance factors, such as speed of response, speed and ability to deliver to an agreed schedule, damage and general

reliability, security, business stability, and spread of areas served.

**Equipment factors**, including specialized bodies and handling equipment.

**Driver factors**, customer satisfaction with drivers was seen as an important competitive advantage.

**General service factors**, usually interpreted as willingness to respond to customers special requests such as taking on some part loads as well as full loads.

There was no attempt by the Commission to quantify these aspects or to place them in any order of importance. The chief interest from the point of view of the present study was that once again there appeared to be confusion surrounding the question as to just how firms within the industry competed and became successful!

Ultimately the competitive element was seen by the Commission to rest on an almost fatalistic attitude, relying on the particular aptitudes of individuals. Those firms which claimed to have planned for the future were found to have no formal plan of action, had not carried out feasibility studies, showed no knowledge of expected traffic growths and had not investigated operating costs, in short had nothing more than ephemeral ideas at the best.

It was held that such attitudes would no longer be prevalent in the industry. At least if they were found to be present then it would be likely that the firms within which they were in vogue would either be stagnant or in decay. The reasoning behind the belief that changes in the industry's environment will have brought about drastic alterations in these attitudes are discussed subsequently .

## CHAPTER 6. TRANSPORT AS A DERIVED DEMAND AND ITS CONSEQUENCES

Transport is essentially a derived demand. The activity as such therefore takes place within a series of parameters unusually heavily influenced by outside factors.

These may be summarised as:

### SOCIAL

### TECHNOLOGICAL

### ECONOMIC

#### SOCIAL FACTORS

The social element may be further subdivided into two major influences the **Legislative** and the **Environmental**.

The legislative aspect is of interest since it is probably fair to say the the road transport industry has been subjected to the widest ranging and at times the most intrusive legal regulation that any industrial sector in this country has had to cope with.

In addition the law has not only been concerned with general safety requirements but has also been involved in areas which affected to influence the basic structure of the industry itself.

The environmental influence has only come to the fore as a major force in recent years, but none the less has had, and indeed will have, wide ranging effects on the ways in which the transport haulier may conduct his business. This includes not only the routes which certain types of his vehicles may use, and at what time they may use them, but also in the future perhaps involve changes in the traditional taxation methods in this country and consequently result in large increases in costs for some operatives.

The legislative factor will be shown to have had a major influence on the overall structure of the industry in terms of the size of operation and the type of vehicle used, and the environmental area will be seen to effect the utilization of the transport fleet. The economic background obviously affects the health of the industry as a whole and the technological choices available will effect the response of managers within the industry to the challenges it faces. In other words this particular influence has connotations for the overall size of the national transport fleet

#### **THE LEGISLATIVE FACTOR**

The road transport industry has many special characteristics both internal and external. One of the most important external factors is the degree to which the industry has been "legislated for." Most industries are affected by either general or specific regulation and statutes but, by and large, they are usually not of

such a nature as to impinge universally on the structure of the enterprise, the nature of the markets it may engage in, and indeed the control of numbers entering non state owned activities. The road transport industry is subject to legislation of this type and indeed of a much more detailed and penetrating nature.

In total there are about twenty five acts which are directed at affecting the activities of the industry, and which specifically add to or alter the Common Law as regards road transport activities, ranging from the Carriers Act of 1830 to the Road Traffic Regulation Act of 1984. The haulier is not simply faced with this rather large volume of primary statutes, but under these various enactments there are a further 300 orders in council, rules and regulations which must be conformed with. The detail of this mountain of regulation can constrain and effect the freedom of hauliers to engage in the industry sector they wish to enter, through licensing rules, the method of operation of their vehicle, through drivers hours limitations, and by changing technical criteria as a result of non industry pressures affect the very economics of their business, as for example in vehicle weight. The greater the capacity of the vehicle, the lower the cost per tonne mile at full utilization, if hauliers in this country are denied similar capacities to their competitors there is an obvious effect on their competitive position.

The importance of this legislative element is expanded when it is remembered that there is an external influence in the form of the



European Economic Community in addition to the Parliament and Local Authorities of the United Kingdom. The EEC for example, in 1974 passed a Regulation which affected the licensing structure in this country. The Greater London Council under powers conferred by the Dykes Act 1973, may ban many categories of goods vehicles from moving through their area at certain times of day and night.

In an investigation into a non transport sector the legislative framework would be unlikely to be considered a major factor to be reviewed in some detail. The transport industry is, however, so intimately affected by the legislative framework that it is felt that such a review cannot be avoided.

#### **MAIN LEGISLATIVE THEMES**

The legislators would appear to have been affected by two opposing themes. On the one hand the central government could exercise little control over numbers entering the industry and leaves control to the market as in Belgium, or it controls very tightly the actual numbers allowed to enter the industry, usually through a licensing barrier, an approach exemplified by France. Munby 1962, cites three ways of controlling the industry:

**An overall limit to the number of vehicles allowed to participate in the industry.**

A licensing system which controls the application to which vehicles may be put.

The control of haulage rates.

Munby at that time favoured the first type as being the one least likely to damage the industry. Over the period of time since then many interested parties have favoured a move towards minimal central control of numbers, and greater reliance on the market as the means to keep in balance supply and demand.

The industry itself has often appeared to be confused as to what it desired. In an article in the "Times" in 1978, Thompson, chairman of the National Freight Corporation, argued that the lack of control of numbers entering the industry since the 1968 Transport Act had resulted in already established hauliers going to the wall, whilst new entrants were coming into the industry in large numbers and making a bad situation worse. The basic thrust of his piece was that the more liberal regime post 1968 had not resulted in a balance between supply and demand, that the industry was "full up" and thus it was up to the central government to initiate legislation to prevent the issuing of further licences. On the other hand, James Duncan of the Transport Development Group, similar in size to the National Freight Corporation, in an article in the "Times" the day after Thompson's expressed the view that, "the small operator with 5 or less vehicles controls 30% of the industry and constitutes a long and powerful tail. He provides

*competition with a zest which keeps the industry young and vital"*  
and his existence should not be curtailed by a less liberal  
regime.

Faced with sometimes conflicting messages from the  
representatives of the industry itself, the central authorities  
have by and large done the only thing possible, that is, they have  
initiated committees to review the control of the industry at  
appropriate times and introduced consensus legislation.

Since transport represents such a key element in the national  
economic framework of the modern industrial state, governments  
have been very concerned about the effect of control systems on  
the efficiency of the industry. If they can be convinced that a  
particular approach has had an adverse effect on this aspect of  
the industry's activities then they can be persuaded to change.  
The central authorities are no less interested in the public  
safety area of the transport industry's activities and concern in  
this dimension can also produce regulation.

The concern of the government with questions of freedom and  
restriction, of efficiency and market structure then, can produce  
legislation which may impinge on the internal management control  
and general activity of firms engaged in a normal way of business  
in the road transport industry.

It is probably true that no student of the professional road transport scene would disagree with the view that the growth and nature of legislation has been a major influence on the industry over the last few years. In all truth the growth of the legislative element has in fact been a major force in the industry virtually from the rise of road transport as a major competitor with the railways.

It is not apposite in this introduction to the present thesis to deal in minute detail with the extremely wide ranging array of road transport legislation; it is however relevant to examine those aspects of the body of law which can be seen to affect the structure and patterns of growth available within the industry.

| Year | Road | Rail |
|------|------|------|
| 1938 | 39   | 88   |
| 1953 | 78   | 124  |
| 1958 | 100  | 100  |
| 1966 | 165  | 87   |
| 1968 | 177  | 84   |

1958 = Base Year

Exhibit 9

To show the switch in demand from rail to road. Index of demand with 1958 as base year.

Source: Thomson and Hunter 1973.

## CHAPTER 7. THE ORIGINS OF LEGISLATION

As with so many other "modern" trends it was the First World War which highlighted the emergence of road transport as a new force for the movement of large quantities of goods. The railways had been the dominant force in inland goods transport for some time and had for a variety of reasons come to share a very close relationship with whatever party was in power in Whitehall. The Great War brought the railways and the government even more closely together and there is little doubt that the burden of the war effort on the railway network, coupled with the government desire to hold down rail freight price increases after the War, meant that the powers that be were sympathetic to a protective sentiment with regard to the railways.

### ROAD AND RAIL TRAFFIC ACT 1933.

By about 1930 it was obvious that the new road transport industry was effectively attracting traffics away from the railway network, and indeed was growing at a remarkable rate as shown in Exhibit 9. To try and protect the railways from what many seen as the unfair competition from road hauliers—who had not suffered the burden of war traffics, and also to bring some legislative order into what could be considered a chaotic industry the government instituted the Salter Conference of 1932. This had wide ranging effects on the detail of legislation affecting the road transport industry—but also much more importantly from the point

of view of this study introduced certain principles which affected the philosophy of road transport legislation up to the present day. Ideas and principles which are vital if we are to appreciate how the haulier reacts to the legal framework within which he must operate (or break). They are also basic to understanding the road transport operators perception of the environment he works within.

#### SALTER CONFERENCE

The conference made a list of recommendations to the government the end result of which was the Road and Rail Traffic Act 1933. The details of the Act do not concern us here, only the general implications these were:-

A distinction was to be made between hauliers who operated on a hire or reward basis and those who operated solely on own account. The hire or reward sector can be regarded as covering the professional haulier, and these were to be the subject of detailed control on certain safety aspects such as hours worked and minimum wage agreements. The own account hauliers although not excluded from all such regulations, were to be much more freely treated.

It was intended to increase the rates of duty on heavy goods vehicles in a discriminatory manner since it was held that they were likely to inflict higher wear and tear damage on the road infrastructure and should pay their true costs in this respect.

As a result of the evidence presented to the Salter Conference by the representatives of the road transport industry concerning "cut throat" competition , it was decided to use the distinction between own account and hire or reward hauliers as a basis of controlling entry into the professional sector of the industry.

#### IMPLICATIONS OF THE 1933 ACT

Whilst the detailed regulations required to implement the 1933 Act are of general interest, the main affects which concern this project are the implications of the three major sections described above. They had and indeed still have major consequences for the industry, in terms of understanding the framework within which the haulier operates and indeed his frequent perception of the hostile nature of that universe the 1933 Act is crucial.

The first category of recommendation, namely the differentiation between own account and hire or reward operators had the immediate effect of isolating the professional haulier into a group subject to different legislation and regulations than the remainder of the industry. The own account operators were often seen as forming at least to some extent, a privileged sector. Over the years it is reasonable to pass the comment that the professional sector has had to bear much more onerous regulation than the own account operators. At the same time the own account operators limited as they once were to carrying only their own



|                  | A & B Fleets | C Fleets. |
|------------------|--------------|-----------|
| % Vehicles owned | 15           | 85        |
| %Tonne/Kil.Run   | 55           | 45        |

Exhibit 10

To illustrate that under A,B,C, Licensing the own account operators were forced to underutilize their vehicles.

Source: Geddes Committee.

## QUANTITATIVE LICENSING.

The ultimate intention of the approach outlined above was to allow the introduction of a Quantative Approach to licensing within the road transport industry. As will be remembered, the representatives of the hauliers complained that entry was too easy resulting in what they termed "cut throat" competition. The government intended that the 1933 Licensing system would allow the Licensing Authority to impose a form of quantitative control on the number and types of businesses which were to be set up within the sector. The aim was to try and impose a balance between supply and demand.

Thus the various types of activity which hauliers could be expected to engage in were intended to be covered by the differing kinds of licences. A and B, covering the general hire or reward function and C licenses catering for those manufacturing firms who only wished to move their own goods. At the root of this desire was the pressure from the industry to curtail what they perceived as over severe competition.

This resulted in their view, from the ease of entry into the industry producing an over supply of transport services, coupled with a poor management background. It was too easy for anybody with comparatively small capital requirements to set themselves up in the road transport industry, without any real background knowledge of the problems involved. This was

exemplified in the pricing policy of the smaller owner operator firms (by far the greatest proportion in numerical terms). As a result of their lack of management expertise they seldom used, or indeed could use, the full cost accounting approach when deciding the price they should charge for their service. The established hauliers claimed that such firms would perceive only running costs and in an attempt to stay in business at any price, push their rates down to this level. This produced a transport service that was very much under priced, and since entry was easy there was a seemingly never ending supply of new "hopefuls" irrespective of the attrition rate.

The consumers of the transport service were, it was suggested, unconcerned with this situation since the entry of new firms always ensured that the egress of bankrupt owner drivers never resulted in a dearth of supply. The more efficient companies had as a result, a burden placed on them since if they did not match the owner drivers rates they lost the business. If they did, the financial results were such that they had to curtail the services that they provided, rather than to sense changes in the market and attempt to lead the industry's response to these new trends.

#### **MEETING THE FULL BURDEN OF INFRASTRUCTURE COSTS.**

Although the considerations briefly discussed above were very important, in many ways the most far reaching and perhaps

ultimately the most expensive element in the Salter Conference recommendations, was the idea that some system should be developed which allowed the government to levy taxation on goods vehicles proportional to the wear and tear which they imposed on the road infrastructure.

#### COST BURDENS

In terms of the total costs associated with the provision of a road network one of the major cost categories is deterioration of the structure. This can in turn be divided into two very broad categories;

Climatic damage which will occur even if there is no traffic using the road, and about which very little can be done.

Wear and tear deterioration incurred by the effect of traffic actually using the road network in question.

As early as 1932, it was obvious to the Salter Conference that Heavy Goods Vehicles imposed a much greater incidence of type two damage than other categories of vehicles. This resulted in the Conference recommending that a differential system of charging for the use of the road infrastructure be developed such that this difference could be reflected in duties gathered.

As an illustration of the problem, recent investigations by the government funded Road Transport Research Laboratory suggest that

for 32 tons Gross Vehicle Weight vehicles with 4 axles, the relationship between usage costs and revenues from excise tax is in the ratio of 0.6:1 , that is such types of vehicles underpay in duty their road usage costs by about 40%. Such figures are open to argument and they also vary with the configuration of the vehicle as well as weight. That is to say, the ratio would vary for the same basic weight but different numbers of axles and also between rigid body and articulated vehicles. The basic point nevertheless remains valid. Many types of vehicles impose higher usage costs on the road infrastructure than is recouped from their excise licence dues. It must be pointed out that this discussion refers only to wear and tear costs and not to the total costs imposed by any particular vehicle class's use of the road infrastructure.

This concept of trying to relate the price which is paid for the use of the road network to the use which is made of it is a major and fundamental strand in licensing policy.

Although it was not fully expressed in the 1933 Act, it has been a constant theme in virtually every road transport act since. The relevance from the point of view of this project is that this objective has resulted in ever increasing licence costs for the professional road transport operative and an equally ever increasing incentive for some types of operator to attempt to avoid the law. The operator perceives the legislative framework as increasingly working against him and takes actions which he feels

are perfectly reasonable. If as the EEC indicates it wishes, a full system of user cost pricing is introduced, then the haulier can expect a massive increase in operating costs.

### **NATIONALIZATION**

The outbreak of war in 1939 heralded a major change in the direction which the industry had been moving. A very fragmented industry was suddenly placed under central control. All road vehicles were brought within the ambit of the Emergency Road Transport Organization, and as a result the organization and operation of the industry was subject to the ultimate objectives of the war effort.

After the War the organization of the ERTO formed the basis of the 1947 Transport Act, which brought about 50% of the A Licence type vehicles under the control of the newly formed Road Haulage Executive. We are not in this thesis concerned with the problems which the 1947 Transport Act faced, or indeed the difficulties it imposed on many hauliers, suffice to say that the Act was seen as unsatisfactory by many.

The circumstances under which the industry was denationalized are, however, of interest in the context of the effect of legislation on the industry. Denationalization in effect allowed those new hauliers entering the industry to decide the scale of their operations, without the interference of any quantitative licensing

regulations. The Road Haulage Executive could not in fact sell all of the vehicles they wished to, thus indicating that those hauliers who did purchase vehicles did so at a scale which they felt was the best for them.

Although the period after denationalization was one of regulation the interlude of nationalization and the policies adopted when the industry was again privatised allowed a substantial change in structure. If any effect of Nationalization deserves consideration here, it is probably the effect of the Nationalization Experience on operators perception of the role of legislation within the industry . The Act was so full of loopholes, and abuses so widespread that many of those operators who worked through the period became even more convinced that the legislature had no real knowledge of, or sympathy for, the road transport sector.

#### **THE TRANSPORT ACT 1953. DE NATIONALIZATION**

The 1953 Act in effect re-introduced the main requirements of the 1933 legislation. There was however, some change of interest to the move away from **Quantitative Licensing**. The Conservative Government had come to power promising that as far as the road transport sector was concerned there would be an end to Nationalization and a move towards a more free policy for the industry. This was in effect assumed to mean allowing market

forces to play a greater share in determining the methods used to regulate the industry.

#### THE ROLE OF THE LICENSING AUTHORITY

In the first instance the Act changed the guidelines suggested for use by the Licensing Authority when he was considering new applications for A or B licenses. Under the 1933 provisions the burden of proof for the need for a new service lay with the applicant. Objectors from existing license holders could claim that they were in the process of meeting any particular market demand, and consequently no new entrants were justified. As a result of the 1953 Act the burden of proof was transferred to the objectors. They had to show cause that no new Licence was necessary - this was a much more difficult task. The intention behind this change in policy was to reduce the protection element of the older application and grant procedures and to open the industry up to new blood. To re-enforce this move the Licensing Authority was also recommended for the first time to take into consideration the **price** of the service being offered. It was also pointed out that the over riding consideration should be the interests of the consumers of transport services rather than the providers of the services.



| Fleet size. Vehicle Nos. |         | % of Sample. |      |
|--------------------------|---------|--------------|------|
| 1932                     | 1969    | 1932         | 1969 |
| 1                        | 1       | 50           | 48   |
| 2                        | 2       | 17           | 16   |
| 3-6                      | 3-5     | 24           | 19   |
| 7-10                     | 6-10    | 4            | 9    |
| 11-20                    | 11-20   | 4            | 4    |
| over 20                  | 21-50   | 1            | 3    |
|                          | over 50 |              | 1    |

Exhibit 11.

To illustrate the apparent stability of fleet structures, before Nationalization and after the removal of quantitative controls.

Source: Bayliss 1986.

Fleet Size

|                | 1  | 2  | 3-6 | 7-10 | 11-20 | 20+ |
|----------------|----|----|-----|------|-------|-----|
| 1953           |    |    |     |      |       |     |
| Nos. In Sample | 32 | 28 | 50  | 23   | 9     | 3   |
| 1965           |    |    |     |      |       |     |
| Nos. In Sample | 24 | 21 | 41  | 21   | 28    | 12  |

Exhibit 12

To show the reduction in smaller fleets and the rise of the 11 to 20 vehicle group. This sample being limited to A Licence holders for whom data were available over the entire period.

Source Baylis 1986

## IMPLICATIONS OF THE 1953 ACT

The provisions outlined above, at first glance, may seem a significant move towards the loosening of the chains of legislative control which bound the industry, however this was not necessarily the case.

The main limitation on the ability of the 1953 Act to seriously affect the general structure of the industry lay within a condition which eventually became known as the "Normal User" requirement. The Government may have seen the way forward for the transport sector as being intimately linked to more free access to the market, the industry itself however, did not necessarily share that vision. It must be remembered that existing holders of A or B Licences enjoyed a certain degree of protection under the old system, they were reluctant to surrender that position. Pressures were exerted on the Government to, in effect, fudge the cutting edge of the new guidelines to the Licensing Authorities.

### **NORMAL USER**

All new applicants had to include a statement of what they envisaged their normal business activity to be. This usually covered items such as the nature of the traffics they intended to carry and the general geographical area of their operations. If a narrow Normal User statement was made, say "vegetables Vale of Evesham to Birmingham", then it was likely that there would be

objections only from those existing hauliers with an interest in these particular markets-especially when we remember the more onerous burdens placed on objectors under the 1953 Act. If the Normal User statement was couched in wide terms such as " General Goods England and Wales" then of course, there was a much increased probability of objections being brought forward.

This position posed a great dilemma for the new entrant. If he wished to smooth the Licence application, he might very well try and place as narrow construction on his Normal User statement as he could. If he did this and obtained his Licence and then by dint of good management seen possibilities of expansion, then if he moved outwith the condition of his Normal User, other hauliers could complain to the Licensing Authority and he might then face the possibility of the revocation, curtailment or suspension of his Licence. If, on the other hand, he was convinced his firm would prosper, expand and develop a trade in a wide range of traffics, a corresponding Normal User statement could easily bring him into confrontation with existing hauliers in the Licensing Court, even before he could operate legally.

The end result was that the 1953 Act did not significantly affect the protection which the 1933 situation had bestowed upon holders of A or B Licences. This, of course, was held by many outside the industry as making the responsiveness of the road sector to changes in demand even more ineffective.

The end result of this phase of the government's licensing approach was to make the lot of any possible new entrant into the industry even more burdensome.

#### IMPLICATIONS OF LEGISLATION FOR INDUSTRY STRUCTURE

The amount of legislation is self evidently extensive, the important question is concerned with the effect of this legislation on the operating conditions within the industry- if indeed there has been a major influence from that area.

Bayliss 1986, held that the licensing regime had in fact a strong influence on the industry during the period of its application in the form of a regulator of entry into the industry. That is from 1933, until the commencement of the more liberal approach after the 1968 Transport Act.

The essential argument put forward by Bayliss is that as a result of the denationalization of the industry, hauliers had an opportunity to act as if no regulatory restriction constrained their size and they could as a result, move towards the Minimum Efficient Scale (that is the size of the entry barrier, or best survival size ) with major effects on the structure of the industry.

The denationalizing aspects of the Transport Act of 1953, in effect, allowed hauliers to set their scale of operation at whatever level

they felt was the most appropriate. Three very large organizations, all wholly owned by the state acquired interest in some 16,000 vehicles and entered the road transport industry. The remaining 24,000 or so vehicles were sold off to the private sector. These could be purchased with an A licence by prospective hauliers. It was decided that no one enterprise could purchase more than 50 vehicles without the permission of the Minister of Transport, but since the state owned companies had to mop up excess supplies it is obvious that these restrictions were not burdensome.

Since the keystone of legislation prior to 1953 had been control of numbers entering the industry, examination of the results of this temporary removal of such constraints should indicate the effects of previous legislation on the structure of the industry. If there had been a pent up desire for larger scale operations which had been stifled by the legislative burden, then it should have made itself evident when the industry was given, however temporarily, freedom to decide its own scale of operations. At least that would be the argument if it is believed that managers within the industry had a good base upon which to make a decision concerning scale. Bayliss adopted the view that the nature of the industry is such that firms would not survive if the correct or near correct decisions had not been taken.

Published data from the Department of the Environment as shown in Exhibit 11. would seem to indicate that the structure of the industry was little affected.

*'The interpretation of such statistics is fraught with difficulty because of the overlapping nature of different licence groups. The inclusion of B and Contract A licence holders irrespective of whether or not an open A licence was held skewed the tables in favour of small fleets.'* In the region of 65% of B Licence holders had only one vehicle." Bayliss op. cit.

To overcome this difficulty and others related to the contents of the statistical information available, Bayliss *ibid.* decided to examine the trend in size of a sample of A Licence holders from the South East Region. These were selected for two main reasons. One, A Licences represented much more realistically the professional haulier operation. Such firms were not subject to the restrictions on their operations that other licence holders had to contend with, and thus could be taken to illustrate more accurately how the professional sector reacted. Two, information was available for his sample of 148 carriers for the period 1953-65, that is from just after denationalization up to the beginnings of the new approach.

The results of confining the investigation to such a sample are shown in Exhibit 12. The original conviction that little change had resulted was wrong. There in fact had occurred a significant

# FOREIGN FLEET SIZES

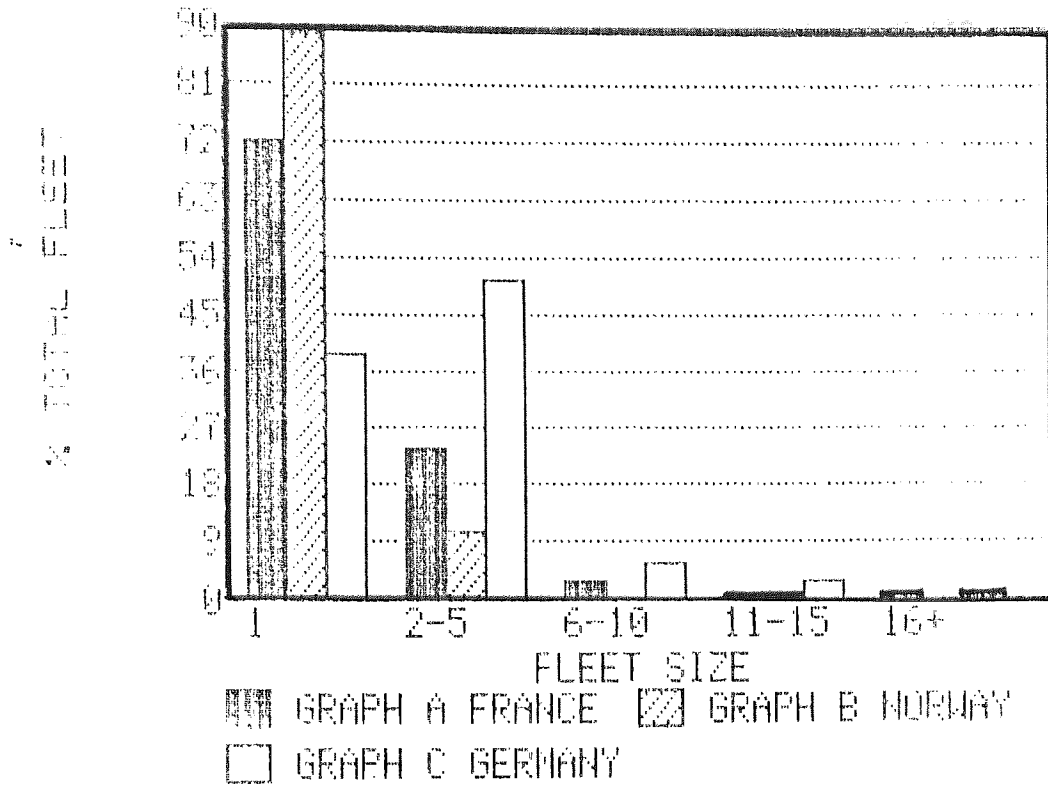


Exhibit 13

To show the size structure of foreign fleets.

Source: Kritz 1974 .



change in the structure of the firms involved with a marked increase in the size of fleets, notably those of 7-20 and above vehicles.

When the data for firms operating over the period was examined as can be seen from Exhibit 12. a general trend towards greater fleets over the time period can be confirmed; it was not a case of larger scale of entry between 1953 and 1965 but a movement towards larger scales of operations.

It must be remembered that the period from 1953-1965 was still one of regulation but firms still tried to move towards , but had not reached a state of long run equilibrium. Many firms may have reached a Minimum Scale of Efficiency, but because of the nature of regulation many others may have been able to operate quite effectively below that size. This would have been as a result of the protection which the control of entry into the industry afforded to such enterprises.

As a result Bayliss reached the conclusion that legislation which seeks to maintain the status quo would result in a structure biased towards smaller operators. Since the United Kingdom has had a system in situ which was less restrictive than many continental countries, Bayliss turned for comparisons to statistics for their industry's structure. Exhibit 13. shows that they indeed have structures even more skewed towards the smaller operation.

## CHAPTER 8. POST 1965.

The nineteen sixties was a period of increasing demand for road transport services, yet legislation made the ability of the industry to respond to total and directional changes in demand more difficult rather than less difficult. In addition, by the late 1950s serious doubts were being expressed concerning the entire basis of the licensing system in this country. This culminated in the setting up of the Geddes Committee in 1963, with the remit to evaluate the operation of the 1933 structure and where necessary suggest amendments. This was the beginning of a new period of legislation affecting the haulier, a period where the underlying trend was to free the industry from quotas and to allow market forces to govern numbers within the road transport sector. It was, in other words, a start of a time when management policies and skills were to determine the birth and growth prospects of transport firms; not, whether or not a particular type of Licence was held

### THE GEDDES COMMITTEE

This committee was convened to try and introduce those elements mentioned above into the road transport industry. It was obvious to all interested parties that a gap had developed between what was expected of the industry in a modern expansionist industrial phase, and the constraints which the old licensing system imposed on the sectors ability to respond to changes in demand.

# ACCIDENTS/100M. U/MILES

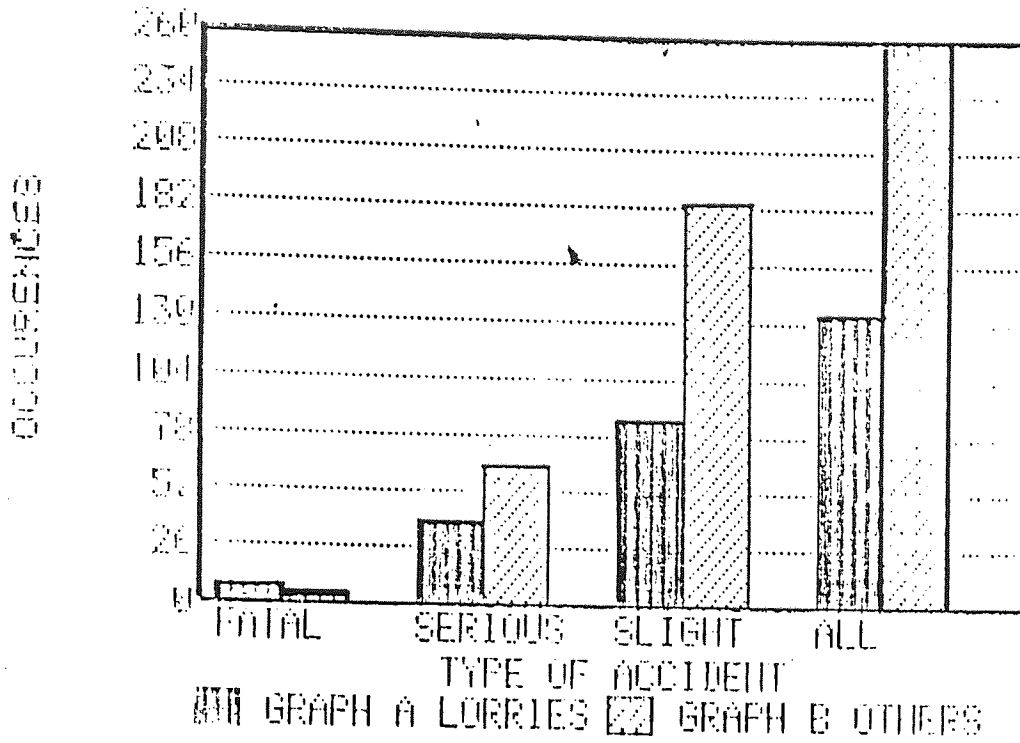


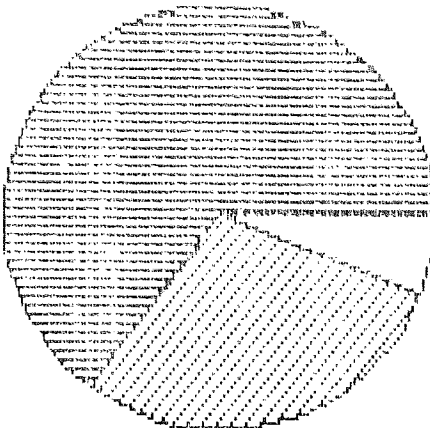
Exhibit 14

To illustrate the variation in accidents for goods vehicles and other road users.

Source: Armitage Report.

ACCIDENT RATE/100M.V./MILES

TYPE OF ACCIDENT



□ 5.97%  
FATAL  
▨ 29.10%  
SERIOUS  
▤ 64.93%  
SLIGHT

Exhibit 15

To show the relative importance of the types of accidents which goods vehicles are involved in.

Source: Armitage Report.

ACCIDENTS/100M. U/MILES

TYPE OF ACCIDENT



1.9%  
FATAL  
20%  
SERIOUS  
83%  
SLIGHT

Exhibit 15

To show the relative importance of the types of accidents which non goods vehicles are involved in.

Source: Armitage Report.

The remit of the committee although wide ranging included some more specific directions as to the areas to be examined in depth. The ones of chief concern to this review of social influences were **Public Safety and Efficiency of the Industry**

## **SAFETY**

The safety aspect was of major concern for two broad reasons. On the one hand there was legitimate concern that the road transport industry was increasingly being perceived as a major source of accidents on the roads, and on the other, the fact that any "tightening up" of general safety regulations could involve increases in operating costs.

The first area of concern is dealt with in Exhibit 14. which shows that proportionately goods vehicles are not involved in any greater numbers of accidents than any other category of road users. It must be pointed out however, that Heavy Goods Vehicles do tend to be involved in a much higher proportion of fatal accidents per accident rate than other types of vehicles classes see Exhibit 15. The second problem area did in fact result in a wide variety of qualitative regulations which undoubtedly resulted in significant increases in operating costs. These in some cases proved too much and operators either simply went out of business, changed their market sector of operations, or as was much more common, ignored the regulations and operated illegally.

The concern of the Committee as regards the general public safety aspect of the industry was focused on three particular areas

Poor Maintenance.

Overloading.

Excessive Driving Hours.

#### **MAINTENANCE**

The committee was concerned with the level of expertise in the maintenance of the transport fleet. The general standard which this had to meet with regard to goods vehicles was laid down in the Construction and Use Regulations. To ascertain whether the extant enforcement structure resulted in compliance with these standards the committee examined the prosecution records for the year 1964. It was found that during that year spot checks had been carried out on some 15,000 vehicles. Of that number approximately 45% had been found to have had some maintenance defect. Of this total some 10% were found to be so poorly maintained that they were ordered off the road immediately and were not allowed to continue on their journey. The remaining 35% were considered to have only "minor" defects. It must be borne in mind that what was considered minor at that time would most likely be considered a very serious deficiency under the Construction and Use Regulations appertaining in the 1980s. Such defects in 1964 might for example have included poor tyres, faulty

windscreen washer/ wipers, or some categories of lights deficiencies.

#### EXCESSIVE HOURS AND OVERLOADING

The question of excessive hours is a difficult one to comment on, both at the time of the Geddes Committee and indeed to-day. One point that is unlikely to be disputed, is that fatigue can lead to accidents and hence the question of hours spent behind the wheel has received attention virtually from the emergence of road transport as a major carrier of goods. Whilst most authorities would agree that excessive hours is a major factor contributing to road safety problems, the real difficulty at the time of the Committee investigation, and indeed at any time, was proving the offence.

There was in fact a major industrial relations problem associated with this question. It is often the case that a particular abuse is common, everybody in the industry concerned knows it is common, but proving its existence and doing something about it may be extremely difficult.

At the period of the Committee's investigation driver's hours were recorded by means of a log book. This was individual to each driver/vehicle combination. The theoretical practice was that the driver commenced the records in the log book as he started work, hence by the end of the working day a record of his



times of activity and type of work, including origins and destinations had been completed. The reality was frequently very different, virtually everybody who has had experience of the log book system would agree that it was probably the incentive for the best creative activity the average driver ever produced—down right falsification, it is often alleged, was the order of the day.

A policeman in uniform, or anybody authorised by the Department of Transport could stop a vehicle and inspect the log book, but with almost 1,000,000 goods vehicles on the roads the likelihood of such a check was very remote for the average driver. Even so, at the time of the Geddes Committee some 16,700 successful prosecutions per year were being raised on the grounds of records/excessive hours. The Committee concluded that this important public safety aspect was not being enforced, or indeed encouraged by the legislation then in force.

Overloading was, and is, yet another important safety factor. A poorly loaded vehicle is obviously likely to create problems for other road users and in the event of an accident might prematurely shed its load, compounding an already dangerous situation. The shedding of a load itself might cause an accident. Vehicles which were overloaded added to the problems mentioned above and the overloading itself might very well lead to an accident. At the time of the sitting of the Committee there were some 10,000 prosecutions per year for overloading offences. These figures were again taken by the Committee as *prima facie* evidence

that the then existing legislative and enforcement structure was ineffective.

#### LICENSING AND EFFICIENCY OF THE INDUSTRY

The Committee was also concerned about the effect of the basic 1933 licensing approach on the overall effectiveness of the industry.

The most outstanding problem was the question of the return load. The C licence holder for example could only carry his own goods, although such operators made every effort to ensure that whenever a vehicle was dispatched there was a return load available, the own goods condition often made this impossible.

The end result of this was that many such vehicles, as has already been mentioned, were operating at 50% utilization, or the loads they did carry had to bear the full return journey costs rather than simply one leg of the journey. The Committee was of the opinion that not only did this produce an element of underutilization of a large part of the transport fleet it also resulted in higher prices to the consumer through the higher transport costs that products moved by this sector of the industry had to bear.

Place of Road Transport In "League Of Bankruptcies"

|      |       |
|------|-------|
| 1961 | 7th.  |
| 1962 | 8th.  |
| 1963 | 10th. |

Ranked by number in trade.

|      |      |
|------|------|
| 1961 | 3rd. |
| 1962 | 2nd. |
| 1963 | 4th. |

Ranked according to Board of Trade Classifications,  
Commission suggested these overestimated numbers.

For period 1961-63

0.2% of vehicles operating each year subject to bankruptcies.

64% of firms going bankrupt operated 1 or 2 vehicles

4% of firms going bankrupt operated 10 or more vehicles.

55% of Contract A bankruptcies were in tipper operations

70% of Contract B bankruptcies were in tipper operations

68% of bankruptcies had been in business for less than 5 years

1% only of bankrupts had been in business for 20 years or more.

Bankrupts tended to be young, small, trading in high risk sectors.

Exhibit 16

To show low real incidence of bankruptcies in haulage industry.

Source: Geddes Commission.

## CUT THROAT COMPETITION

The representatives of the industry appealed to the Committee that any relaxation of the 1933 quantitative approach would result in their nightmare of "cut throat" competition becoming rampant. The result being to the detriment not only of the road transport sector, but to the country as a whole.

The Committee was in a difficult position here as there was not a great deal of information available concerning the effects of the much raised "cut throat" competition. The Committee did however have available information regarding the failure rate of firms prior to the introduction of the 1933 Act. The evidence it examined related to the period covering the 1920s up to and including the early 1930s. It concluded that the rate of bankruptcies within the road transport industry at that time of free entry was no greater than that for other industries of a similar size structure. As can be seen from Exhibit 16, the then current evidence available also tended to suggest that the rate was in fact still low in the industry. This indicating to the Committee that there was not a sound case to be made in favour of confirming licensing as a means of regulating the extent of "cut throat" competition in the sector, if indeed this was considered a problem at all.

It was perhaps of more import to the Members of the Committee that when the average usage of vehicles within the own account

|                  | A & B Fleets | C Fleets. |
|------------------|--------------|-----------|
| % Vehicles owned | 15           | 85        |
| %Tonne/Kil. Run  | 55           | 45        |

Exhibit 17

To illustrate that under A,B,C, Licensing the own account operators were forced to underutilize their vehicles.

Source: Geddes Committee.

and hire or reward sectors were examined there appeared to be a great discrepancy in utilization as shown again in Exhibit 17. It would appear from figures such as these that the typical vehicle in the own account sector was considerably behind its hire or reward counterpart.

The Committee seen the reason behind this variation as being rooted in the own goods only provisio. It may be apposite for the student to point out that with the benefit of hindsight other explanations are possible. It could have been for example that professional sector vehicles were normally engaged in longer trips on average because transport managers in own account fleets seen their own vehicles as for essentially local deliveries. Or it might have been the case that they perceived the professional haulier as being more suitable for long haul, as on average the longer haul load was larger and hire or reward operators were more suited to this type of load.

These are however merely speculations, the Committee was convinced that the protection they seen as being conferred on the professional haulier through the 1933 Act, resulted in an avoidable decrease in the overall efficiency of the transport fleet by denying return loads to the own account operator. They therefore came down in favour of a move away from the Quantitative view of licensing and were in favour of a more Qualitative approach. This had far reaching effects on the competitive environment of the industry and consequently on the

industry and consequently on the type of management policy required for success within the industry.

#### THE PROPOSALS

The main conclusions of the Geddes Committee were set out in *The Transport of Freight*, Command Paper 3470: 1967. The main propositions that this environmental discussion is interested in can be summed up as:

No carrier license for vehicles not exceeding 30 cwt. ULW.

A series of enactments applicable to all vehicles over 30cwt aimed at improving safety and efficiency.

A system designed to promote the fullest use of the railways by licensing journeys of more than 100 miles on vehicles of more than 16 tonne GVW.

#### IMPLICATIONS OF THE PROPOSALS

In relation to the the first recommendation there was virtually no resistance from either the professional sector or the own account operators. There were about 900,000 vehicles in this category, they were employed in mostly short haul activities and they had a very good safety record, in short virtually everybody was pleased to see them de-regularized.

The second area was not quite so straightforward. The basic intention here was of course, to open the industry up to the forces of free market competition, with all the problems which the professional sector seen as being associated with that concept. The own account operators were initially at least very happy with the idea behind the suggestion, although even they altered their viewpoint at a later stage.

To balance what the Committee seen as virtually free entry into the road transport industry, it was proposed that a wide ranging series of enactments would be passed to emphasize the quality aspects of road transport operations. These not surprisingly concentrated on overloading, maintenance and drivers hours.

It is not relevant for us here to deal with these regulations in detail but it is apposite to indicate the nature of the legislative framework which was intended that operators would work within. A series of legally enforceable maintenance standards were to be laid down, the breach of which in themselves would constitute an offence. All vehicles were to carry a plate upon which the maximum permitted weight and its variations would be engraved. This plate could be removed as a result of overloading offences and without such a plate the vehicle could not legally operate on the roads. To re-obtain a plate punitive fees were envisaged. The total of time drivers could be behind the wheel was seen as too great and being unchanged for some 33 years, was also a target for the recommendations of the Committee.



The third area was intended to produce greater co-ordination between road and rail facilities. On journeys of 100 miles or more for traffics such as coal ,coke iron and steel, special authorization was to be obtained. In any such application the applicant had to specify not only the nature of the goods to be moved but the nature of the service they intended to provide including price

Two bodies, the most important of which was British Rail, were to be given the power to object to the granting of such special authorizations, on the grounds that *"....they could provide a service which overall is as satisfactory as that of the applicant, taking into account a combination of speed, reliability and cost to the consignor, in relation to needs of the consignees and the nature of the particular traffic concerned. The test will therefore be on economic grounds; it is not the governments intention that the licensing system should be capable of being used as a means of diverting traffic to rail uneconomically. In short, the system is designed to promote carriage by rail where this can be done without detriment to the consignor."*

This recommendation immediately produced a great deal of opposition from many quarters . The basic argument was that the consignors were sending their goods by road because they felt that this was the most effective form of transport available for their needs. If this was not the case, then what was needed was a re-education programme, not a government fiat. Indeed this

proposition was eventually dropped from the final legislation and hence although important in many ways need concern us no longer in this particular review.

To try and improve the level of management expertise in the industry the Geddess Committee felt that some form of professional qualification should be introduced in order to give the occupation of transport manager not only status but a basic entry requirement commensurate with the level of responsibility the job actually entailed .

This was seen as requiring some form of quasi official examination procedure. There was at the time many similar requirements throughout Europe. In virtually every EEC member country some form of examination was a pre requisite for the individual who wished to become a professional transport manager. The Committee therefore proposed the introduction of a Transport Managers Licence. The essence of this was perceived as a series of examinations overseen by a body of academic government and industry representatives , which would ensure an acceptable level of professional competence. The content of such examinations were to cover areas including road safety, technical operating standards, general social legislation, financial basics and general principles of business.

## CHAPTER 9. THE 1968 TRANSPORT ACT

The end result of these proposals was the 1968 Transport Act, which like most legislation in this country was basically a compromise between the case stated by the investigative committee and the vested interests affected.

This was probably the longest Act passed in modern times and certainly was the most important and comprehensive as far as the road transport industry was and is, concerned. As a result of this Act the industry was, at least for a short time, thrust into a situation where the only arbiter of success was the full market forces of the industry. No protection was provided by a licensing system, no excuses about "cut throat" competition were available, the customer decided whether or not a firm continued in business or went to the wall.

Since the Act was so comprehensive a detailed examination is not apposite for this thesis, the most relevant sections are Parts 1 and 5.

### PART 1.

This section was mainly concerned with the change in ownership of various transport organizations previously owned or under the control of the government. Although such changes in organization

do not directly affect the area we are primarily interested in, they must be noted in as much they had an affect on the market structure which the independent professional haulier had to face.

#### PART 5.

This section gave legal sanction to most, but not all of the recommendations of the Geddess Committee;

The distinction between hire or reward and own account operations was removed. All goods vehicles except as below were to be subject to an all embracing Operators License.

All vehicles below 35 cwt were to be exempt from excise licences.

Special Authorizations for some vehicles and traffics were to be introduced. (Never implemented.)

A transport managers licence examination structure was to be formed. (Never implemented.)

Drivers hours were to be more strictly controlled. These were to be reduced from 11 hours driving within a 14 hour day, to 10 hours driving within an 11 hour day, with a maximum of 60 working hours/week

From the point of view of the transport operator these changes represented an increase in operating costs. This in turn affected the number nature and price of the services which he could offer. This situation was made even more complex by the conditions laid down for the granting of the general or O Licence. This it must be remembered replaced the old A,B,C licensing structure, but did not necessarily make it easier to enter the industry; even although this was the general thrust behind the legislation.

#### **EFFECT OF REMOVAL OF QUANTITATIVE LEGISLATION**

The industry feared that the removal of control of the numbers of firms entering the industry would result in an immediate increase in competition from the old own account operators, and a flood of non managerially adept new firms. The end result of these two trends being a major problem in profitability for long standing professional operators.

The vast majority of own account operators did not in fact enter the general haulage market. Bayliss 1973 did however show that there was a substantial increase in the absolute number of firms which entered the hire and reward sector. This increase was almost certainly due to the relaxation of the entry requirements which the immediate post 1968 situation provided. There would however appear to be little evidence that the removal of the quantitative aspect of licensing in this country resulted in a major destabilization of the industry.

## THE QUALITATIVE ASPECTS OF THE ACT.

In many ways the qualitative aspects of the act had much more wide ranging effects on the average haulier; at least on those who were prepared to conform with the law.

The aim of the regulations which were introduced after 1968 was basically to ensure that a minimum level of competence was applied to the routine maintenance of those vehicles covered by the regulations. As has already been pointed out the industry was notorious for the application of less than rigorous standards in this area.

Regulations were introduced which covered the standards to be met in such routine matters as tyre wear, loading of vehicles, vehicle lights, and a host of other detailed safety related areas.

The objective here is not to review in detail these qualitative regulations but to emphasize that they introduced a much more formal framework within which the haulier had to operate his business.

The situation prior to the 1968 Act was that the major influence on the size of the industry was the licensing structure and its interpretation by the Licensing Authority. After the 1968 Act had been fully implemented the situation had moved from an attempt to control the supply of transport firms through legislative

restriction of numbers, to a reliance on the market as a sifting or screening agent.

It can be argued that this move had much farther reaching effects than was intended by the originators of the legislation.

It is a fairly safe generalization to state that the pre 1968 environment did not prevent the existence of large numbers of what are perhaps fondly known in the industry as "cowboys". That is, firms who knowingly break the law and perhaps because of their cavalier attitude are grudgingly admired by wide numbers of other operators, who whilst perhaps sailing close to the regulative wind, did not in fact blatantly transgress the whole gamut of the law as did the "cowboys".

The evidence to confirm this state of affairs is almost but not quite, exclusively anecdotal, but the large number of prosecutions already cited and the virtual universality of the belief in the "cowboys" existence suggests that at least in some sectors, the breaking if not the flouting of regulations was widespread before and indeed, after the 1968 Act.

The most influential of the pre 1968 legislation was related to the possession or otherwise of a Licence, the average haulier therefore was faced with a clear cut and comparatively easy to comply with set of regulations. The framework laid down by society against which he had to balance the pressures of

operating his business were easily ascertained and comparatively simple in operation.

The post 1968 situation introduced a new set of parameters, these related primarily to legal standards concerning activities (maintenance and safety ) which in the past he had been much more free to set for his own enterprise. As will be argued later, this can be interpreted as setting in motion a process which introduced wide variations between the intentions of the legislators and the effects of the legislation.

The legislators seen the 1968 Act and subsequent legislation as introducing a more free environment for the haulier, an environment where the main criterion for the existence of the business was the need of the market rather than vested interests. On the other hand many hauliers seen a more restrictive set of what was to them discriminatory regulations, which resulted in many of them devoting a great deal of effort and ingenuity to avoidance. In some market sectors a major distortion of market forces was the result.

#### THE POST 1968 SITUATION

The general trend in legislation after 1968 has been pretty much more of the same, with an ever increasing reliance on the market as the regulating force.



The only other factor of prime importance has been the influence of the Common Transport Policy of the European Economic Community. It must be stated though that the EEC has chiefly resulted in changes in detail rather than principal, although there are elements of more general intent. The reality has been that most of the more global legislation has not been fully implemented. A major factor behind this has been the very strong inclination of member states to become involved in sectional politicking whenever they perceive national interest being affected. It is also fairly safe to say that within the EEC-in spite of protestations to the contrary, there is still a very strong attachment to the quantitative approach to legislation. The industry in this country is nevertheless still affected by EEC initiatives and this is especially true of those hauliers involved in international movements.

## CHAPTER 10. THE EEC DIMENSION

The concept of a Common Transport Policy has been part of the European Vision from the earliest days of the EEC, although because of the internal pressures facing the Community when it attempts to translate schemes into action, most initiatives have foundered on implementation and have remained chiefly general statements of intent.

It has not only been the practical difficulties faced when trying to co-ordinate varying national transport experiences which has thrown up barriers to movement in legislation but also philosophical contradictions.

The attitudes of the EEC towards the transport industry can be said to contain two broad schools of thought. On one hand there is the belief that the ultimate objectives of the Community should be socio economic in nature, and as a result all activities which form the fabric of socio economic life should contribute in the most effective way to make those general goals obtainable. Since the transport industry is a strategic service within all modern industrially based economies, then it follows that it should be subject to direction and regulation which make it subservient to the global goals. This school of thought might be referred to as the regulatory approach.

Domestic Road Transport Regulations in Selected EEC Countries

| Country        | Capacity:<br>Own account | Capacity:<br>Hire-or-reward         | Rate Regulation                                   | Maximum Gross<br>Weight (tonnes) | Stated Objectives                         |
|----------------|--------------------------|-------------------------------------|---|----------------------------------|---|
| Belgium        | No control               | No control                          | For ECSC goods<br>plus national<br>coal and steel | 38                               | Good repute and<br>financial<br>soundness |
| France         | No control               | Control on medium/<br>long distance | Yes   | 38                               | Protect railways                          |
| West Germany   | Some limited<br>control  | Control on medium/<br>long distance | Yes   | 38                               | Protect railways                          |
| Netherlands    | No control               | Control on all<br>distance          | Maximum rates                                     | 50                               | Balance supply<br>and demand              |
| United Kingdom | No control               | No control                          | None  | 38                               | Primarily safety                          |

Exhibit 18

To illustrate some selected EEC members' transport policies.

Source: Button 1984.

On the other hand there is a body of opinion which whilst it does not disagree with the general objectives of the regulatory school feels that too restrictive control not only makes the achievement of general targets more difficult, but that in the process the interests of those within the industry concerned are adversely affected. This stance prefers that the market itself should be the regulatory force. This may be thought of as the market school. Button 1984 referred to these as the Anglo Saxon and European Philosophies. Exhibit 18. illustrates the approach of selected EEC countries to the regulation of their domestic road transport industries.

The regulatory school were in the ascendancy within Brussels certainly until the mid 1970s. This was over a period of time when the general trend in legislation in the United Kingdom was accelerating towards the market stance

#### **COMMON TRANSPORT POLICY**

There is no unitary document which lays down a detailed statement of a Common Transport Policy there are however a series of pointers as to the nature of such a policy. Statements of intent to prevent discrimination between member states in the transport area were contained in the Treaty of Rome 1957. Article 76 states that member states of the Community were forbidden to introduce regulations which were designed to extend barriers against the carriers of other members. Articles 78 and 80 were intended to

prohibit the discrimination in prices between specific enterprises within members own boundaries, or between different nationalities in internal routes or traffics. The practice of differential charges at members frontiers was condemned in Article 81.

In effect Articles 76 through to 81, were intended to pave the way for a common market in goods and services and in particular to outlaw legislation which descriminated in favour of national transport industries.

In 1962 a more detailed programme was outlined which was designed to herald a more positive approach to the transport question. Three main areas were singled out for action:-

The removal of all regulatory obstacles which prevented, or made more difficult the establishment of a free market in goods or services.

The removal of national regulations which hindered competition within the road transport industry.

The introduction of a construction programme which would provide an EEC wide infrastructure which would encourage the development of a transport industry which would stimulate the growth of trade and an expansion of market opportunities.

This general outline might at first be taken as a typically market school of thought proposal, as it appears to rest on the encouragement of freedom of operation and expansion as required by the markets. This was not the case. At the base of the plan was the belief that the general objectives were of crucial importance for the future development of the EEC, and as a result those elements essential to the successful implementation of the plan must be regulated for in such a way as to ensure that the plan was translated into action.

The keystone of the action plan was the creation of a regulated market for transport services. This was to be realised through the organization of a common system of charges. Methods for the publication of these charges and the inauguration of an overseeing committee was envisaged, so as to regulate movements into and out of the industry and the administration of subsequent regulations as deemed necessary for the well being of the industry.

This illustrates the basic contradictions in EEC transport policies, on the one hand the intent to introduce discrimination free liberal policies and on the other, the desire to ensure their operation by the passing of additional legislation.

#### **CONCERN FOR UK INDUSTRY**

The chief cause for concern for the Industry in the United Kingdom was the proposal to introduce some form of regulation of

rates. The industry was not against this in principle but certainly did not relish the form which the EEC proposed that is the forked tariff. The system was intended to operate by allowing the free setting of rates within a centrally laid down bracket price.

In 1967 it appeared that the fears of UK hauliers were about to crystallise when the EEC introduced a further curtailed action plan. It had become obvious to the Community that the 1962 initiative was being effectively ignored by members and the mini programme was an attempt to move in the direction of the original objectives. The main proposals were:-

The Community wide introduction of some form of examination to test the professional competence of managers in road transport.

The introduction of community quotas for international movements to replace the older bilateral quotas.

The administration of forked tariff proposals for an experimental period.

There were numerous other clauses affecting the transport industry in general but these are the principal items affecting the road transport industry. They certainly added to the apprehension which the U.K. Industry felt for their well being in the event of entry into the EEC.

The introduction of community quotas and the imposition of forked tariffs would have had major effects on the industry, but as usual, when the Commission was required to actually act on the plan, national interests ensured that no real action was taken. The exception being in the field of tests of professional competence, which has subsequently had widespread implications for transport firms in this country. This subject is dealt with in greater depth within the discussion of UK legislation.

#### 1973 ACTION PROGRAMME

A further programme of action was formulated in 1973:-

There should be a Community wide move towards a form of central supervision of capacity for the industry with government intervention if supply and demand move into imbalance.

The concept of forked tariffs should be replaced by reference rates.

Governments should prepare for the introduction of marginal social cost pricing. A system whereby road users were to be charged on the basis of their use of the road infrastructure and the TOTAL social costs this used imposed. A proposal which if it is ever fully implemented would have the widest possible repercussions for costs within the industry but which is really beyond the scope of this thesis to discuss further.



The expansion of the community quota system so as to replace bilateral agreements. The intention here was to eventually introduce a Community Licence which would have allowed hauliers free access to the general Community market for road services.

The effect of most of these proposals on the British Industry was minimal for precisely the reasons which have been noted above, namely that implementation either was feeble or did not take place at all. The entry of the United Kingdom, Denmark, and Ireland had virtually no effect on the pace of development towards a cohesive Common Transport Policy.

The proposal concerning tariffs would have been important but although forked tariffs had been in operation in some of the original member states since 1968 it did not extend into the entire enlarged Community. The system was seen as a protection against the excessive competition that has often figured in the deliberations of this country. Maximum tariffs were set for key commodities and the industry was allowed to charge in a band from these maxima to 23% below that level. In 1977 it was decided that members could thenceforth either apply a forked tariff system or introduce the reference tariff method. In 1981 Germany, France, and Italy opted for the forked tariff approach, other members favoured extending the experimental period of reference rates, whilst this country Ireland and Denmark continued to believe in the free market approach. That is to say in effect nothing really changed. In 1983 reference tariffs were introduced throughout the

Community, the final decision being left to the individual transport undertaking . It is possible however, for two or more members to introduce bracket or forked tariffs for movements between them, provided of course the agreement is mutual.

The industry in this country has been little affected by these moves on tariffs since, of course, they are intended to apply to international journeys only and the United Kingdom still favours the market approach in this area.

The question of international freight movements is, on the other hand, an area where EEC policy can be said to have had major influences on the nature of UK haulier's operations. This is a complex area and one which requires discussion in some depth.

4.6 Roll-on/roll-off ferry traffic to Mainland Europe: road goods vehicles: by country of registration: 1976-1986<sup>1</sup>

|   | Thousand |       |       |       |       |       |       |       |       |       |       |
|---|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|   | 1976     | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  | 1983  | 1984  | 1985  | 1986  |
| Powered vehicles                              |          |       |       |       |       |       |       |       |       |       |       |
| United Kingdom                                | 171.8    | 154.8 | 162.2 | 179.1 | 177.5 | 174.1 | 181.2 | 186.4 | 193.7 | 180.4 | 201.4 |
| Belgium/Luxembourg                            | 6.4      | 9.7   | 13.0  | 16.5  | 14.1  | 18.0  | 21.0  | 27.9  | 36.5  | 40.9  | 31.9  |
| Denmark                                       | 3.3      | 4.7   | 3.4   | 6.4   | 3.2   | 5.0   | 3.7   | 5.5   | 5.1   | 5.6   | 4.8   |
| FR of Germany <sup>2</sup>                    | 4.4      | 5.3   | 6.6   | 8.4   | 7.9   | 9.0   | 12.5  | 15.4  | 17.8  | 21.2  | 26.0  |
| France  | 31.2     | 35.1  | 42.7  | 52.9  | 44.8  | 54.9  | 66.1  | 70.6  | 97.2  | 96.2  | 105.3 |
| Greece  | 0.3      | 0.3   | 0.4   | 0.6   | 0.5   | 0.5   | 0.5   | 0.6   | 0.5   | 0.8   | 0.6   |
| Irish Republic                                | 3.9      | 5.8   | 3.0   | 4.7   | 9.1   | 7.7   | 4.6   | 6.5   | 7.3   | 6.6   | 9.5   |
| Italy   | 3.7      | 4.4   | 4.7   | 7.0   | 7.9   | 8.9   | 11.2  | 10.8  | 10.7  | 14.9  | 16.4  |
| Netherlands                                   | 15.3     | 16.0  | 13.7  | 19.8  | 15.9  | 18.8  | 23.3  | 26.3  | 31.9  | 42.5  | 58.6  |
| Spain   | 3.1      | 3.5   | 5.1   | 6.0   | 6.5   | 6.4   | 6.1   | 9.0   | 10.6  | 14.9  | 19.3  |
| Portugal                                      | ..       | ..    | ..    | ..    | ..    | ..    | ..    | ..    | 1.0   | 1.0   | 1.4   |
| European Community (excluding United Kingdom) | 71.6     | 84.8  | 92.6  | 122.3 | 109.9 | 130.2 | 152.0 | 172.5 | 220.6 | 243.7 | 274.3 |
| Non European Community countries              | 10.7     | 11.7  | 12.4  | 13.7  | 15.6  | 14.0  | 15.0  | 19.7  | 23.2  | 25.9  | 28.5  |
| Unknown                                       | 18.5     | 21.4  | 13.3  | 9.5   | 6.4   | 5.2   | 4.9   | 4.4   | 2.0   | 1.1   | 0.5   |
| All countries                                 | 222.8    | 272.7 | 280.5 | 324.6 | 306.7 | 322.9 | 352.4 | 382.4 | 427.6 | 419.6 | 504.2 |
| Unaccompanied trailers                        | 198.8    | 207.7 | 246.0 | 283.8 | 262.5 | 300.1 | 352.9 | 375.1 | 361.2 | 419.0 | 419.7 |
| Powered vehicles and unaccompanied trailers   | 421.4    | 480.4 | 526.5 | 608.4 | 569.3 | 622.9 | 705.3 | 757.5 | 788.8 | 868.6 | 923.9 |

- 1 See also 2.31 and 2.32 which relate to international road haulage by UK registered powered vehicles.  
 2 Federal Republic of Germany.

Source: Department of Transport  
 Survey of roll on/roll off  
 goods vehicle traffic  
 Contact point for further information:  
 01 212-3229

Exhibit 19

To illustrate the breakdown of current cross channel traffic

Source: Transport Statistics. HMSO.

## CHAPTER 11. INTERNATIONAL ROAD MOVEMENTS WITHIN THE EEC

The 1960s saw a spectacular rise in the numbers of vehicles making the channel crossings, figures rose from some 500 in 1956 to over 17,000 in 1963. Exhibit 19. shows current levels of movements. The advent of Roll on Roll of ferries and the increase in trade between the United Kingdom and the Continent contributed to this increase.

Prior to 1965, the comparatively small number of firms engaged in this traffic applied direct to the governments of their destinations for the necessary permission and licences. After that time, the Government initiated a series of bilateral and multinational negotiations to attempt to bring order to what was essentially, a haphazard system.

International Hauliers nowadays require to obtain licences for international journeys under one of the procedures discussed below.

**Bilateral Permits** Such permits arise either under a formal agreement between governments, or under an arrangement between Transport Ministers. Agreements involve treaties whereas arrangements are much more flexible and less formalised. There are

over 25 such arrangements and agreements between the United Kingdom and other EEC members Button 1984 op. cit.

Within the general heading of bilateral agreements Button identifies five sub categories. **Quota permits** where there is a strict fixed number of permits available. **Co-operative permits** which are intended to overcome problems arising from a shortage of quota permits, such permits are issued in addition to quota numbers to operators who provide return loads to the hauliers of the state with whom the arrangement is made. **Combined permits** are issued by Germany and France to encourage the use of combined road/rail systems in use in these countries. The final type of permit the **specialised licence**, is issued in Germany for short haul movements between Bremerhaven and Hamburg ports and for certain movements to the East German border. Such permits also apply to NATO traffics and traffic to and from West Berlin as well as for users of the integrated dual mode road/rail systems.

The classes of permits below apply to movements between the United Kingdom and the relevant members states and do not necessarily exist for traffic between other member states.

#### **European Conference of Ministers of Transport permits.**

These have been in existence since 1975, they are however small in number and not all participants recognize the allocations made to other members. These permits enable holders to travel between EEC states and Norway, Sweden, Switzerland, Spain, Portugal,

Turkey and Yugoslavia. The chief importance of these permits as pointed out by Button, is the wide geographical area they cover.

#### Community Quota permits.

The Community is well aware that the previous types of licences are not an ideal solution to the problem of cross frontier traffics. The Community Quota permit is an attempt to introduce a more liberal system with the eventual aim of replacing all other permits. Multi lateral permits are allocated to member states and they have the responsibility of issuing them to their own national hauliers. The permits do not allow cabotage, that is participation in the national freight movements of the countries concerned and are normally issued for periods of one year, although it is possible to convert annual permits into 30 day short term authorizations.

There are also certain specified traffics which were removed from the quota permit requirements. These include own account traffic, any traffic using multi modal systems to the practical maximum and an extensive list of specialized categories, such as works of art, emergency relief and so on.

The quota system is, in theory, a liberal and sensible approach to the problem of multi lateral movements, but as with so many of the initiatives within the EEC, has run into problems of national interest. In its General Report of 1979 the Commission itself remarked on the formation of transport policy that it was *"becoming increasingly pragmatic... it is now a continuous process*

Number of Bilateral Quotas for UK Hauliers in Selected EEC Countries

|                        | 1970   | 1971   | 1975   | 1977   | 1979   | 1980   | 1981   | 1982   | 1983     |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| <u>France</u>          |        |        |        |        |        |        |        |        |          |
| General                | 16,800 | 20,500 | 29,000 | 40,000 | 41,500 | 53,500 | 52,500 | 55,200 | 57,500** |
| Co-operative           | -      | 4,800  | 7,000  | 8,500  | 13,000 | 18,500 | 18,500 | 18,500 | 18,500   |
| Road/Rail*             | 1,000  | 1,500  | 2,400  | -      | -      | -      | -      | -      | -        |
| <u>West Germany</u>    |        |        |        |        |        |        |        |        |          |
| General                | 2,000  | 4,113  | 7,000  | 8,250  | 9,450  | 16,500 | 20,000 | 20,000 | 20,000   |
| Co-operative           | -      | -      | 500    | 700    | 4,000  | 4,000  | 4,000  | 4,000  | 4,000    |
| DAFO                   | 455    | 1,600  | 1,750  | 2,000  | 2,000  | 2,000  | 2,000  | 2,000  | 2,000    |
| Short-distance transit | -      | -      | 200    | 2,500  | 2,500  | 300    | 300    | 300    | 300      |
| West Berlin            | -      | 180    | 180    | 180    | 180    | -      | -      | -      | -        |
| Road/Rail Users        | -      | -      | -      | -      | 5,000  | 5,000  | 5,000  | 5,000  | 5,000    |
| <u>Italy</u>           |        |        |        |        |        |        |        |        |          |
| General                | 3,000  | 3,000  | 4,450  | 4,850  | 7,600  | 8,500  | 10,500 | 11,000 | 13,000   |
| Co-operative           | -      | -      | -      | -      | -      | -      | -      | 500    | 1,000    |
| Road/Rail*             | 1,200  | 600    | 1,100  | -      | -      | -      | -      | -      | -        |
| Other                  | -      | 850    | -      | -      | -      | -      | -      | -      | -        |

Exhibit 20

To illustrate some selected permit numbers.

Source: Button 1984.

aimed at achieving the objectives of the Community transport system while at the same time allowing for the real current problems and accommodating the interests of the individual members". The same problem of national interest has bedevilled the workings of the Community Quota System. The main difficulties centre around the allocation of permits between member states.

The United Kingdom initially received a very low allocation and although this has been regularly expanded in line with other state's share, conversations among international operators indicate that there is a general feeling that this county has not received a " fair crack of the whip." In 1984 a new set of proposals were introduced by the Commission designed to smooth the problems of bilateral and quota systems. In essence the proposals were to remove quantitative constraints over a five year period. During this time the quota would be increased by five times the rate of growth in international road traffic between the member states. The allocation to individual states is to be made bearing in mind their capacity to generate demand for transport services, their share in the inter state freight market, and the use made by the carriers of the quotas already authorised to desired countries. Exhibit 20. shows the position of the UK with regard to its share of Quotas.

The EEC effect on the international operations of UK hauliers is important, since the various regulatory approaches are likely to influence the structure of the industry, specifically the



availability or otherwise of permits can have a substantial influence on a firm's ability to grow. It is of some importance to point out that the numbers of permits available to the UK haulier is influenced primarily by political considerations rather than market forces. It must also be mentioned that such restrictions are more important on some routes than others because of the mismatch between bilateral and Community quota permit numbers and demand for transport services.

#### **SOME EFFECTS ON THE UK FLEET**

Button *ibid.* conducted some research among international hauliers concerning the effect of the Community Quota system and permits in general on their operations. The results would appear to compound the conclusions of Bayliss *ibid.* concerning the effect which legislation can have on the transport industry.

There appears to be an excess of demand over supply for authorizations to France, Germany, and Italy, Button *ibid.* The International Road Freight Office of the Department of Transport has over the years, adopted a variety of methods in the allocation of these permits, but given that demand exceeds supply on certain routes problems obviously still apply. In the late 1960s allocation of permits was made on the basis of the Department's assessment of the efficiency of the haulier usually by appraising the destination origin and volume of traffics which the individual operator desired to have authority for. This system had

many drawbacks, it was cumbersome, expensive to administer, and could lead hauliers to exaggerate their needs. In 1971 a block allocation scheme was introduced, initially with respect to France, but in 1972 extended to cover Germany and Italy. Under this process a haulier was given a block of permits based on the numbers they had previously been awarded.

The obvious danger was that a closed shop would be created preventing the entry of new firms. Subsequently, the Department decided that as new authorizations became available as a result of bilateral or multilateral agreements or arrangements, such additions would be allocated as 50% to existing block holders and 50% to newcomers who had not previously held block allocations.

Button *ibid.*, points out that there is virtually automatic re-allocation of block permits to existing holders. The only major check is by the Department on usage rates, and although it is unlikely that action would be taken as a result of underutilization of permits in any one year, the International Road Freight Office prefer to see at least 75% utilization over a three year period. If it is lower than this, the operator is likely to have his allocation reduced accordingly. International Freight Office 1982.

The Community Quota and the European Council of Ministers of Transport permits, are not allocated under the methods mentioned above. They give the haulier much greater freedom of market access

and although small in number their allocation is decided on the basis of likely maximum utilization. Since it is also likely that future allocation of Community permits will bear in mind intensity of use, the Department insists that operators who are awarded such permits do fully use them. Examination is made of the journey records which accompany applications and those operators at the bottom of the utilization league are informed that unless they improve their use, they will be unlikely to have their permit renewed at the end of the annual validity period, Button *ibid.* As new EEC permits become available companies may "bid" for them by offering bilateral permits in exchange.

The numbers of ECMT permits are very small and are usually allocated to hauliers willing to encompass the much larger number of non EEC countries involved, he would normally be expected to surrender his EEC Quota licence

#### **EFFECTS ON THE HAULIERS**

The situation outlined above obviously has some important effects on the operators engaged in the international market. The first area of interest is the extent to which supply lags behind demand. Statistical evidence is very sparse in this field, some data were given to the House of Lords Select Committee on Quota Arrangements for the Carriage of Goods by Road in 1983, but it appears from conversations with operators that many firms simply do not apply because of the problems involved. The chief executive

of ICL Transport in his evidence to the Committee, talked of the psychological barriers to entry into the international haulage market, an indication perhaps of the difficulties which other firms might have baulked at rather than pursue their interest.

To illustrate the magnitude of demand some figures can be used, the original 99 EEC Quota permits attracted 800 applications, in 1975 600 operators applied for 45 additional permits. In 1983 over a four week period 132 applications for bilateral permits for France were unsatisfied, 47 for Germany and 22 for Italy. The other obvious effect of the system is to concentrate licence holdings in a small number of hands.

The professional bodies representing the interests of hauliers have obviously been involved with the operational considerations of the licensing regime. Own account hauliers are represented by the Freight Transport Association, although it must be pointed out that many members of the FTA may also have an interest in hire or reward operations as they will sometimes try to reduce their transport costs by seeking return loads. The professional haulier has his interests looked after by the Road Haulage Association.

The FTA has consistently held that the licensing system imposes burdens on their members. In the first instance, there is the lack of flexibility imposed by the restriction of supply of transport meaning that their members can find themselves having to employ higher cost transport than would be available under a free access

market. Secondly, there are the psychological barriers already mentioned which might make some of them question using their own transport on certain journeys. These views are illustrated by the quotation below taken from the FTA submission to the House of Lords Sub-Committee in 1983 " *In order to compete within the Community in the same way as in the domestic market, the FTA believes that industry must be afforded the widest degree of flexibility to move goods to customers. Such flexibility should mean that there is sufficient transport available to move goods and that there should be the opportunity to achieve maximum utilization of transport to the cost benefit of manufacturer and customers. If this aim is to be achieved the amount of permits of all types has to be increased to that level where supply marginally exceeds demand.* "

The RHA over the years adopted a broadly similar view, however by the time submissions had to be made to the Lords Sub-Committee the re-emergence of the old attitude towards competition was evident. The RHA felt" ..... *hauliers views had altered greatly since 1979, when recession hit trade and industry and the road haulage market in particular. The fall in demand for export haulage, linked with the increases in permit quotas has led to an excess in capacity and to disastrous rate cutting. The established international haulier is competing not only with other established hauliers, but also with many hauliers previously engaged only in domestic operations and who, finding little or no traffic at home have tried to enter the international field. The Association*

believes that many of those now engaging in international road haulage are not fully qualified to do so....The policy of liberalization is now leading to a lowering of standards of operation, with costs often being cut to dangerous levels in order to compete."

It interesting to look at these two submissions more closely. The first point to be made is that neither the FTA or the RHA put forward further data to support their claims that one section was being forced to accept higher costs, or that another was being forced to reduce rates dramatically. The points of view are interesting though, because they re-enforce the general belief of the perception which both sides have of licensing strictures. The own account operators-who are after all basically manufacturers feel that they are being forced to use transport at more than minimum costs, whilst the professional hauliers, who we are most interested in, feel that they must have the protection of a licensing system to prevent "cut throat competition" lowering standards and forcing established hauliers out of business. The arguments are similar to those raised in the domestic market under Salter and Geddes.

The established haulier certainly perceives a licensing system as providing some protection from the harsh winds of competition, and consequently of preventing new entries to the industry and to some extent, shoring up an already existant structure when market forces attack it. The same conclusion applies to the home market

and hence the importance for the structure of the industry of the licensing organization. Button *ibid* comments "...The RHA by definition represents established hauliers rather than new hauliers and one cannot help but feel (as indeed, the Lords' Select Committee did) that the concern with market stability and safety stems from a desire to protect those already in the market rather than with market efficiency *per se*."

Button further points out that "...in 1983 13,330 back loads were given to French hauliers by United Kingdom Firms, which if there was genuine excess capacity and permits were not in short supply would presumably have gone by UK vehicles. The comparable figures for West Germany was 3,039 but in addition some 9,544 British trailers were taken into or out of West Germany by third party hauliers in 1981." Button is here re-enforcing the belief that licences were in short supply, but it is possible to point out that there may be other explanations which could account for the data Button quotes. There could obviously have been return load rates applied by the continental hauliers more competitive than UK firms could manage, there might also have been special agreements between the UK originating firms to move back to the EEC via the haulier who delivered, or finally as mentioned elsewhere in this thesis there may have been specialist knowledge required for particular routes and or traffics and services.

The RHA and the FTA participated in the setting up of the machinery which administered the allocation of permits and besides their obvious vested interests on behalf of the two sides of the haulage industry they may also have been reluctant to make more general comments on the general administration of the system.

Button *ibid.* conducted a survey in 1983 amongst international operators to try to establish their views on the licensing system with some interesting results. The survey covered the 89 members listed in the Handbook and Directory of the International Functional Group of the Road Haulage Association. This sample represents only well established hauliers.

Interestingly about half of the respondents expressed concern over the way bilateral permits were allocated although not all of the concerns centred around the same areas.

Most comments quoted by Button concern either the deleterious effect of giving permits to newcomers or the problems of breaking into new markets because of the closed shop effect of permits being allocated to those already in the business.

In view of results concerning illegal practices in the field work discussed later it is interesting to note that Button mentions at least one respondent raising the problem of forged documentation being used by British hauliers.



The House of Lords Select Committee on the European Communities in 1983 found among other conclusions, that;

Quotas discriminate against innovators and protect established operators

Quotas distort competition among road hauliers; more direct means should be used to maintain proper professional and social standards in the industry.

From the point of view of this thesis it is accepted that the international fleet is strongly influenced by the legislative regime, and this once again focusses attention on the questions surrounding the success of individual companies within such a framework.

In essence then, outside the field of International Haulage the EEC Common Transport Policy has had at best a marginal effect in most areas of operations for the United Kingdom or domestic operations only haulier. This has been due to the concentration of the EEC on inter member movements and lack of ability of the Community to translate ideals into actions. Ms. Albert Coppe was quoted in the Three Banks Review 1979 complaining that *"the transport industry is so closely bound up with the economic life of each member country that national interests speak with a particularly loud voice."*

## CHAPTER 12. THE EEC AND DOMESTIC LEGISLATION.

The Community has however, had a major influence in at least one area affecting the British Industry. This has had results of major import inasmuch as it affected the basic approach to regulation which this country had been following since the 1960s.

The relevant regulations had their origins in the attempt by the EEC to curtail entry into the industry of individuals who it perceived as having insufficient professional expertise.

### PROFESSIONAL COMPETENCE REGULATIONS.

In 1974 Directive 74/561 was introduced with the intention of advancing control of numbers in the Industry by laying down standards of competence for transport managers. The intention was *" to contribute to the rationalization of the market by ensuring that transport operators were better qualified thus improving the quality of the service."*

This Directive had substantial consequences for transport operators in the United Kingdom. In the first instance since the Directive was intended to apply only to Hire or Reward operations the United Kingdom had to re-introduce the distinction between the two echelons which it had removed under the 1968 Transport Act. It also became necessary to initiate an organizational structure

within which some form of test of professional competence could be administered.

The Goods Vehicle Operators (Qualification) Regulations 1977 gave effect in the United Kingdom to Directive 74/561. Under this Regulation three types of Operators Licence were introduced.

Standard O License. This allows the holder to carry goods in the United Kingdom for hire or reward, and also in connection with his own business.

Restricted O Licence. Such a licence permits the holder to carry his own goods, or those used in connection with his business, both within the United Kingdom and internationally. Holders **cannot** carry goods for hire or reward.

Standard O licence with International Operations. Holders of this type may carry goods for hire or reward, or his own goods, or goods used in connection with his business, both within the United Kingdom and on international routes.

Since if the driver or the vehicle is engaged on an international journey, any part of the journey is regarded as an international operation then it is of the utmost importance that the correct type of licence is held.

The application and granting of an O Licence is a very straightforward affair, although certain conditions must be met. Basically, the applicant must be a fit person to hold an O Licence, any evidence of past offences against traffic regulations will be held against the applicant. There must be evidence that there are satisfactory facilities available for the maintenance of the vehicles, and there must also be effective procedures to ensure that the laws relating to drivers hours and records are complied with. Operational controls and methods to prevent overloading of vehicles must be available and the stated operating centre must comply with the minimum standards expected by the Licensing Authority.

It is also necessary to name in the application a professionally competent individual, who as a full time employee, is to be responsible for the operation of the vehicles and the maintenance of all legal standards, that is, the transport manager.

It was to this individual that the 74/561 Directive was aimed, there were a variety of ways in which professional competence could be proved. In the period January 1978, to December 1979, practical experience was accepted as proof of competence- the so called Grandfather Rights. Certain recognized qualifications were also acceptable. These included holding a Fellowship, or Membership of the Chartered Institute of Transport, being a Member, or Associate Member of the Institute of Traffic Administration, a Member, or Associate Member of the Institute of

Road Traffic Engineers or a Fellow or Associate of the Institute of the Furniture, Warehousing and Removals Industry. Those who entered the industry in a position of responsibility after January 1975 but before January 1978 were given until December 1979 to prove their professional competence. Anybody who wished to enter the industry subsequently either had to obtain an exempting qualification or prove their competence by passing the Certificate of Professional Competence in Road Transport Operations Examination which is administered by the The Royal Society of Arts.

The syllabi for the examination were developed by a committee comprising representatives of the government, the industry and specialists in the transport field. The EEC Directive laid down that the examination should be within the grasp of those who had left formal education at the age of 16, and although the general areas to be covered were stated specific content was left to the individual countries concerned. In the United Kingdom the examinations were divided into two broad categories, one for a Certificate for National Operations and an additional set of papers for International Operations.

It should be noted at this stage that the examinations for the International Certificate are considered by operators to be much more difficult than those for the National Certificate. This distinction is of import for this project as categorization of

transport firms on the basis of their type of O Licence forms part of the desk research discussed later.

For National Operations the subject area is divided into 5 sections:-

ROAD SAFETY, including drivers hours and records, driving licences, general traffic regulations, traffic accident procedures, compulsory insurances and the safe loading and transit of goods.

TECHNICAL STANDARDS AND ASPECTS OF OPERATIONS, including weights and dimensions of vehicles, vehicle selection, and mechanical conditions of the licence.

ACCESS TO THE BRITISH MARKET, including basic legislation and licensing.

BUSINESS AND FINANCIAL MANAGEMENT, including the economic background to business, elements of financial management, costing procedures, the general commercial conduct of the business and other more general commercial services.

LAW, including the structure of the Law, the elements of company law, social legislation affecting business activities and taxation within the transport industry.

The areas to be covered to obtain the International Operations Certificate include not only the above but also their international equivalents.

The key factor with regard to the present project is that hauliers are quite well aware of the variation in degree of difficulty between the two modes of operation. Only hauliers who actually needed the International Operations Certificate for their real business activities embark on a programme of study and apply for the national and international licence options. This allowed the student to classify operators on the basis of average length of haul, with important consequences, as discussed later.

The success of this attempt to improve the efficiency of the industry, and of course to limit entry to those who could show evidence of a minimum degree of professional competence, is difficult to assess. To a great many operators as is shown in the results of the field work, the CPC seems to have little relevance. It is of interest to note that for many owner operators the examinations were simply transferred as a burden to their wives, who then became the "full time employees" showing evidence of professional competence as required by the Regulations. On the other hand there is some evidence quoted which indicates that the more progressive organizations in the industry have shown a much more detailed grasp of movements in technology than acquaintance with the managers of pre CPC days would have led the student to expect.

It can be held then, that the legislative codes under which a transport industry must operate can have a major effect on the structure and growth possibilities of the industry as a whole, as well as for the individual firm, they have a major impact on the industry. Conversations and interviews with the individual transport manager lead the student to the conclusion however, that for the manager of a transport undertaking, such considerations are only of interest when they impinge directly on his day to day decisions. The major area raised during interviews was in the effect of micro regulations rather than macro ones. The working manager appeared to be more interested in the influence of drivers hours regulations, or environmental pressures to restrict lorry routes, than broad structural arguments. This is not to say that the macro aspects are not important. They are obviously of major import through their influence on the structural parameters within which the individual firm must operate. The problem is one of perception, many transport managers do not perceive the influence of the legislative framework on their enterprise, they are forced on the other hand to deal with micro regulations on a daily basis. It is to these environmental issues we must now turn.



## CHAPTER 13. EFFECT OF ENVIRONMENTAL FACTORS.

The environmental forces which are most likely to influence the level of activity of the individual road transport enterprise can be subdivided into two broad categories;

**Legal constraints on operational factors.**

**Legal limits on technical specifications of vehicles.**

The nineteen sixties saw the rise of many environmentalist movements. A general awakening to the problems of pollution motivated many people to form lobbies to put forward schemes for the improvement of the quality of life as they saw it.

As early as 1973 the Pettit Committee which was formed to look into "Lorries and the world we live in" was remarking that "*Transport touches life controversially at many points. No one can stand aside and regard himself as unaffected by decisions which relate to personal mobility, range and freedom of choice, living standards or environmental quality in the way those involving transport do.....In such a world it is easy to be vulnerable to quickly formed attitudes and fashionable prejudice.....The place of the lorry and other forms of freight transportation in our society is a field of debate particularly exposed to such attitudes. Sound answers to the environmental issues to which some of the activities of the lorry to-day give rise are, however, unlikely to emerge from a blind refusal to accept the important part the*

lorry at present plays in our society, from the rejection of its role because it has some unredeeming features associated with environmental failure, or from the extreme championship of other modes." The Armitage Report 1978, goes on to observe that, "People's reactions are also influenced by their perception of usefulness. The bus can be as big and as noisy as the lorry, but people at least associate it directly with a purpose relevant to their own needs whereas a lorry, especially if it is apparently on a through journey, need have no direct connection in their minds with their own lives."

These two quotations sum up the environmental problem for the road transport industry. There is little doubt that the public at large identify heavy goods vehicles as generating environmental pollution, the industry is aware of that fact, but at the same time the haulier is also acutely aware of the vital and basic role the lorry plays in the economic welfare of this country. It is still an unavoidable fact however, that any restrictions which arise from the pressures of the environmental body add to the parameters which constrain the individual road transport enterprise.

Armitage 1978 op.cit. seen the lorry as affecting the environment in a variety of ways;

Road Safety More people under the age of thirty five die as a result of road accidents than from any other cause. The Committee

estimated that the direct cost of road accidents to the National Health Service approximated £55 million per annum at 1978 prices, whereas the total cost to the community was calculated as about £1,700 million, again at 1978 prices. This aspect of heavy goods operation has already been discussed. The statistics show that whilst lorries are relatively safe in terms of their mileage run and accidents occurring, they do tend to have a higher proportion of fatal incidents. They accounted for 7% of all road casualties in 1978, however they were responsible for 16% of all fatalities. Armitage *ibid.*

**Effects on Health** The committee felt that there was likely to be a bad effect on the health of some populations which might be due to intensive heavy goods traffic, but concluded that the obtaining of proof for such effects would be virtually impossible. They felt nevertheless that the *.. "effect of lorries in some places we have seen is so severe and all pervasive that .... it would be best to assume ..... some deleterious effect."*

**Intrusion by lorries.** The report believed that there was considerable intrusion by lorries. *"They can be visually intrusive, blocking out the light and the view.... Lorries can create a generalised sense of fear and apprehension, especially but not only among pedestrians..... People usually express their concern in terms that the lorries which affect them are in the wrong place or on inadequate roads. .... Another source of intrusion is lorries parked in the wrong place. They can seriously*

damage amenity. ....There are similar problems with lorry depots sited in the wrong places."

**Noise** The Department of Transport said that in their experience noise was the most frequent cause of complaint against lorries. The Noise Advisory Council in evidence to the Armitage Committee suggested that road traffic (not just lorries), was the biggest source of noise nuisance, and that about 11% of all dwellings suffered more noise from road traffic than the standard which, subject to other requirements, the Government adopts for grants for sound insulation to householders affected by noise from new roads.

**Vibration** There were two type of vibration considered by Armitage, ground borne vibration and low frequency air borne vibration. The Committee felt that there was no reasonable comprehensive evidence on the effect of vibration on people or buildings which could be specifically discussed with relation to lorries, although the Committee felt that there was some circumstantial evidence to show that some old individual buildings had been adversely affected.

**Fumes** The Department of Transport says that fumes are after noise the most common cause of complaints raised about heavy goods vehicles. The Committee felt that there was no evidence of a general hazard to health created by emissions from lorries in the concentrations they are customarily experienced. It did

acknowledge that concern was expressed in some quarters about the effect of fumes on health-especially of children.

**Social problems** It was considered that lorries created some undesirable effects on the quality of life in specific areas. It was felt that people were sometimes afraid to cross the road, elderly people and young children being particularly affected. It was believed that lorries could contribute to the physical decay of some neighbourhoods and the Nature Conservancy Council in evidence said that the use of larger lorries was detrimental to the interests of conservation.

The Armitage Report *ibid.* assembled an impressive case for the adverse environmental affects of the then existing types of heavy goods vehicles.

The most important results from the micro point of view were regulations concerning the parking of vehicles and the extension of the groups who could object to the granting of an Operators Licence.

#### **OPERATIONAL FACTORS**

When an O Licence application is made the applicant must state the location of his operating centre. This is the home base for his vehicles. The Licensing Authority will expect that the centre be "adequate for its purpose." There are no rigid guidelines concerning what is adequate, but all such applications must be

published locally. Any interested party can object to the granting of the Licence on environmental and amenity grounds. This has had a major effect on the smaller haulier especially the owner operator as finding suitable land can be a major problem. The restrictions on lorry parking have similarly proved a problem and an expense for many owner drivers. Local Authorities have also been affected financially through the provision of lorry parks - designed to help the owner driver solve these problems.

The major influence of environmental concerns on operational effectiveness has, however, almost certainly been the various regulations affecting drivers hours, loading restrictions, and in some cases routes and access for heavy goods vehicles.

The hours limitations have been raised in conversations with virtually every transport manager involved in the various interviews behind the field work for this thesis, and for those involved in movements to London the extra operating restrictions there also loomed large. This preoccupation with hours is not limited to this study but was raised by the Price Commission Inquiry 1978 and by an investigation by Kearney Management Consultants in 1986. A brief examination of the trends will show why the area is considered so important an influence on the efficiency of the individual firm and the structure of the industry at large.

## HOURS REGULATION

Two major types of drivers hours have come under regulation. On duty hours, that is the time the driver is available for duty, and driving time, that is the time the driver is in a position to control the vehicle- that is when he is "behind the wheel".The reasons why these times should be subject to government control have already been discussed in some depth.

The major watershed in hours regulation was the 1968 Transport Act the relevant section pointed out "*This part of the Act shall have effect with a view to securing the observance of proper hours of work by persons engaged in the the carriage of passengers or goods by road and thereby protecting the public against the risks which arise in cases where the drivers of motor vehicle are suffering from fatigue.*". The Act intended that the measures were to be primarily aimed at safety but they had ramifications for efficiency as well. These were compounded by subsequent legislation and regulation which meant that over the period 1969 to 1981 permitted hours in this country were successively reduced until they harmonised with EEC standards in 1981. Thus in January 1978 the maximum continuous driving period was reduced from 5.5 to 5 hours, and the weekly driving time from 60 to 57 hours. From 1981 a driver was to be allowed a maximum of 8 hours daily driving, 48 hours weekly driving, and no more than 4 hours continuous driving without at least a 30 minutes rest. His daily duty was limited to 11 hours and he could not be

on continuous duty for more than 5.5 hours. The nature of the industry is such that the hours regulations are more complex than this, involving exemptions for some types of traffics journeys and vehicles- these are beyond the scope of this thesis. The general implications are, however, self evident, a continual and extensive legal constraint on the levels of vehicle utilization.

#### **ENFORCEMENT OF HOURS REGULATIONS**

To ensure that these regulations could be enforced the Tachograph was introduced into the United Kingdom, as already discussed previously.

The costs of these regulations fall into two main categories, the cost of installation, a one off cost, and the cost of complying with the regulations. All non exempt vehicles are now fitted with Tachographs and hence this cost is now lost in general purchase costs. The 1978 Price Commission Report on the road haulage industry estimated the total cost in the order of £94 million pounds. This is an additional cost now borne by the industry each time the fleet is renewed, the report also estimated recalibration costs to the fleet at an annual figure of £3million, at 1978 price levels.

The Report pointed out that *"since many drivers in the hire and reward sector are currently working 10-11 hours per day, the implementation of the regulations may be held, potentially, to*



have important implications for the costs incurred by the industry. The issue is one which has engendered major concern among many operators."

The Commission concluded that hauliers would have had to adopt one or more of the steps listed below to have maintained their then volume of business;

employ more drivers

organize depots or staging points to allow drivers to split journeys.

re-schedule work to maximize utilization of vehicles.

increase journey speed.

purchase additional vehicles.

establish reciprocal arrangements with other hauliers. Report of Inquiry into The Road Haulage Industry *ibid*.

#### EFFECT OF CONSTRAINTS.

It will be noticed that without exception these reactions to the post 1981 hours regulations involve the individual operators in increases in operating costs. The Report observes "*All of these measures... will have the effect of forcing up costs and, therefore, charges, unless the industry finds ways of significantly improving its efficiency.*" It is important to note the caveat, unless efficiency is improved. We could expect therefore that these regulations had an important effect on the operating practices of the fleet or at least some sectors of it, as the

operators attempted to absorb the increase in costs imposed by the legislative environment.

There are other underlying influences to bear in mind. The first is that although the legal constraints on operating procedures have been an important influence on the transport fleet, it is true to say that they are of most interest to those firms engaged in long haul business. Any organization whose main efforts are directed towards local delivery, or short haul movements will have found the 1981 regulations of little import. "Nevertheless we are satisfied that long distance haulage (basically individual hauls of 140 miles or more thus involving a round trip in excess of 280 miles) will be significantly affected by the change in regulation. Our questionnaire survey reveals that some 78% of operators with 2 or more vehicles carry at least some loads over distances greater than 140 miles. Larger firms are more likely to have some long distance work than small hauliers." Price Commission Report *ibid*. Therefore the greatest additional burden would seem to have fallen on the larger fleets.

The Kearney Management Consultants' Report into the Structure of the Retail Industry and its effect on Physical Distribution 1986, pointed out that transport managers seemed to perceive that they were much more affected by local restrictions and bans. This is a problem which has also received much attention both from the industry and the government. As early as 1973 a Committee chaired by the then D.E.A. Pettit (later Sir Daniel), submitted a report to

the Minister of Transport entitled, "Lorries And The World We Live In." The first paragraph of the Committee's conclusions reads, "The Committee..... recognizes that a real and pertinent problem of environmental offence by the lorry exists. It is growing to the point of becoming somewhat unmanageable in several cities as the inevitable use of the lorry extends. It is a source of waste and inefficiency through delay, accidents, and physical and environmental damage. Some aspects,.....are worse than others. They must all be resolutely brought under control."

The Committee established a wide range of means whereby transport firms, by altering their methods of operation, might reduce the problems they impose. These covered attempts to rationalize distribution and delivery, off peak schemes such as Moondrop and Nightpac and means of utilizing transshipment depots to integrate differing manufacturers products moving to the same ultimate destination. It is not our purpose to investigate these studies in depth but to point out that as early as 1973, the environmental problem of the lorry was receiving attention and the conclusions of a body representing "...a realistic cross-section of Industry, Commerce, and Local Government..." Pettit Report op. cit., were basically such that they were intended to push transport firms towards particular methods of operating, and inevitably affect their cost structures, and hence the structure of the industry itself. Those organizations who could not adapt would have become casualties of change! Yet another example of the framework within which the transport operator must conduct his business.

It is of interest to note however, that the Committee did include as its last conclusion that " *While we accept the current difficulties in permitting increases in size/weight, and recognize the need for some generally accepted limits linked inter alia to the capacity of the roads, we could not contemplate current limits as a long term constraint on the industry without considerable misgivings.*" This could be taken as an indication that the Committee was well aware of the problems which attempts to control the environmental difficulties might place on the transport organizations themselves, in terms of realistic operating efficiency.

#### RESTRICTION APPROACHES

Very little movement on the recommendations of the Pettit Committee actually took place- at least in the form of additional regulation. There was nonetheless a heightening of awareness of the problems caused by heavy goods vehicles, and within the industry an increase in debate in some quarters. Of much more importance was the Armitage Report 1980 which further investigated People, Lorries, and the Environment.

This report was obviously wide ranging but specific sections are of interest to us at this stage of the thesis background. Armitage stated " *Restrictions by local authorities on the roads which lorries may use are one of the most important ways in which the*

impact of the lorry can be reduced. These local restrictions are not a panacea. They cannot solve the intractable problems which exist where there is no alternative route. Local regulation however avoids the difficulties of applying universal solutions. Its great strength is that it can be tailor made to fit local circumstances by those who have detailed knowledge."

The industry once more faced a recommendation that further constraints be placed upon its operating framework where ever possible. the Report goes on "Using the powers available to them, local authorities can control lorries in various ways and principally by;

*Lorry Bans.* Local authorities's powers which are supplemented by a range of authorized signs, enable them to prohibit lorries from using certain roads in their areas. The prohibitions are generally defined in terms of the weight of the vehicle but also may relate to its length or width. The restrictions can apply to a particular road or part of it, or they may cover an entire zone;

*Specified lorry routes.* Local authorities can specify through routes for lorries but in order for these to be effective it is necessary to impose prohibitions on and thus to sign all the side roads along the route so that vehicles straying from the route can be penalised;and

*Restrictions on waiting or loading and unloading. Local authorities can impose these controls subject to consent by the minister. "*

The scale of the use of these powers is difficult to quantify in a meaningful way since such orders may cover either very small areas, such as a stretch of one road, or up to extensive regions such as the Windsor Cordon and the Greater London Council's Lorry Ban. It can be said that in 1980 there had been 342 orders under the Dykes Act, and that the Freight Transport Association claims that it studies in excess of 2,000 local authority controls on lorries every year. The Windsor Cordon in effect prohibits lorries using the main approach roads to Windsor except from the North. In 1975 the Greater London Council published a consultancy document seeking reaction to the possibility of designating about 450 miles of existing roads as lorry routes. The response was overwhelmingly in favour, some 10,000 out of 12,000 replies. At that time the council estimated that the cost of banning goods vehicles of over 16 tons gross vehicle weight from Greater London would be £150 million per year. The plan was dropped except for some 6 square miles of the central area. Yet a similar scheme was introduced in the 1980's, an indication of the move in favour of the increasing use of the powers given to local authorities.

The powers employed are contained in the ;  
Road Traffic Regulation Act 1967

Heavy Commercial Vehicles (Controls and Regulations) Act 1973  
(The Dykes Act)

Armitage *ibid*, believed "It would be easy to underestimate the large number and variety of such restrictions. For instance, in Derbyshire there are 35 zonal weight restrictions." A note of concern is raised in the Armitage Report however, which the student feels is significant. "The national interest would also be affected if the local authorities imposed unreasonably large additional costs on hauliers through lorry controls. This possibility has to be watched because the local authorities themselves do not pay the extra costs they impose."

The student believes this to be an indication that the Committee was aware of the problems which the use of available powers could present to the haulier. The Armitage Committee goes on after much deliberation to recommend an increase in lorry weights "We believe that the heavier lorries we recommend would give a positive improvement in relation to people and the environment and would give substantial economic benefits."

The eventual introduction of such heavier vehicles could in fact be said to have had significant benefits at least from the operators point of view, although many environmentalists might disagree with the recommendation! It is of interest that both the Pettit and the Armitage Reports made this self same point.

The picture which emerges is once again one of an industry being subject to vast numbers of orders and regulations which have a direct effect on the structure of the industry at large and the operating procedures of the individual enterprises within the sector

It is also apposite to bear in mind that as the Kearney Report *ibid.* points out, such regulations as have been discussed above are most important when the vehicles are being operated at high levels of utilization. If a firm was underutilizing its vehicles such restrictions might have their weight eased by more efficient organization. The more effective the firm the less slack there is likely to be for such an approach to take up, hence such regulations are actually more onerous on the more efficiently managed firms. This assumes of course that the poorer organized enterprise is capable of improvement. The alternative view is to regard such regulation as a further means of slimming down the industry to a fitter more leaner profile!

#### **RESTRICTIONS ON VEHICLE SPECIFICATIONS.**

These restrictions on hours of work and access are of course of major influence on the industry but so also is the second category enumerated above, the legal constraints placed on the size of vehicle which may be operated. There is first of all the weight restrictions which may be placed upon certain routes or areas, and in addition the legal maxima which are applied to certain



categories of vehicles. That is there are limits on geographical areas and on the absolute size of vehicles which may be operated.

Roudier J. 1976, in a study based on traffic flows in urban areas accurately summed up the relationships between traffic flows and vehicle operations. He first established that *"The payload of the most economic lorry on a given route is an increasing function of traffic on that route."* That is, since the demand for vehicle movements on urban roads is the result of demand for freight transport, then the load which can be moved at optimum cost will vary upwards with the volume of traffics on a specific route.

Roudier continues to show that the number of vehicles required to meet a given demand level will be related to the volume of demand, and the time which a vehicle is available for work, the time required for loading and unloading, the length of average journey, and the capacity of the vehicle.

If, as a result of market factors, the optimum payload is chosen then vehicle numbers will increase with increases in payload size, which in itself is dependent on the volume of traffic carried on the route. When operators have a range of vehicle sizes available to them, that is they may have the use of vehicles of increasing capacity, the number of vehicles will increase with the journey time. When a maximum size barrier is met then the number of vehicles used becomes a linear function of the journey time (which is dependent on average speed and length of haul) *"To sum up, it can be said that the greater the traffic to be carried and the*

*smaller the maximum permitted load, the greater is the requirement for lorry operations on a route to meet a given demand."*

That is if there is an increase in the weight of vehicle that can be operated, then other things being equal the smaller the number of movements and/or vehicles that will be required.

The numbers of vehicles required for a given product/market demand which a haulier is attempting to satisfy will therefore be heavily affected by the local authority weight restriction in force, if any, and ultimately by the legal maximum permitted goods vehicle weight. This in turn will obviously affect the structure of the industry.

#### **EFFECTS OF VEHICLE SIZE**

The economic and financial effects of vehicle size have attracted the attention of authorities over the years and have usually been considered to be of major importance not only for the individual hauliers viability but for the industry as a whole. Bayliss 1986 *ibid.*, graphically illustrates this. His analysis was based on the operating costs of some 3,200 specific vehicles over a three month period. Multiple regression analysis was applied to a series of vehicle characteristics. *"The dependent variable was the cost per hour of operation, and the independent variables were a group relating to the vehicle, and the number of vehicles in the fleet to which the specific vehicle belonged. Vehicles were drawn from some*

1,350 fleets." Bayliss found that the significant co-efficients were;

|                          |       |
|--------------------------|-------|
| Constant                 | -0.81 |
| Vehicle weight           | +0.74 |
| Vehicle age              | -0.23 |
| B licence                | -0.04 |
| Body type tipper         | -0.06 |
| Body type tanker         | +0.15 |
| Proportion of night work | -0.01 |
| Vehicle mileage          | +0.11 |
| Fleet size               | +0.02 |

*"The two key co-efficients are vehicle weight and fleet size.....The fleet size co-efficient suggests that fleet size has no influence on the operating costs of specific vehicles, in other words there are no scale economies related to overheads and variable costs. On the other hand there are substantial economies related to vehicles size."*

These factors have not gone un-noticed in the industry itself. The Armitage Report *ibid.*, notes *"Yet there can be no doubt that the main reason why the road freight transport industry has been able to achieve an almost continuous growth in output without an increase in vehicle numbers has been the steady shift from*

| Over     | Not Over | 1978              | 1979 | 1980 | 1981 | 1982 | 1986 |
|----------|----------|-------------------|------|------|------|------|------|
| (tonnes) |          | 000's of vehicles |      |      |      |      |      |
| 20       | 24       | 0.1               | 0.1  | 0.1  | 0.1  | 0.1  | 0.3  |
| 24       | 28       | 2.1               | 3.5  | 3.2  | 2.1  | 2.7  | 4    |
| 28       | 32       | 1.6               | 2.2  | 2.1  | 1.5  | 1.6  | 2.4  |
| 32       | 38       | 5                 | 8.3  | 6.8  | 6    | 7.4  | 11.6 |

Exhibit 21

To show the trend towards larger vehicles, before the raising of the upper weight limit.

Source: Transport Statistics. HMSO.

Move To Larger Vehicles

Nos. Of 38 Tonne Vehicles in Thousands

| 1983 | 1984 | 1955. |
|------|------|-------|
| 13   | 21   | 26    |

Exhibit 22

To illustrate the move to include larger scale vehicles in the National fleet.

Source Transport Statistics. HMSO

To precede page... 148

*lighter to heavier vehicles." and again " The higher productivity of the larger lorry has been an important means by which hauliers have been able to contain costs, and therefore prices, and the pressure on operators to move progressively towards the use of the heaviest permitted vehicle for their particular class has been very strong."*

As has already been pointed out both the Pettit Committee *ibid.*, and the Armitage Report *ibid.*, were in favour of increasing the maximum weight of goods vehicles. It is of interest to note that in evidence to the Armitage Committee ICI claimed that if weights were increased above the then maximum of 32 tonnes say to 40 tonnes then they estimated a saving in transport costs of about £10.5 million per annum. Bass Limited estimated that under the same conditions they would travel 850,000, fewer miles per year and Allied Brewers felt they would be able to reduce the number of trips between breweries and depots by about 8,000 per year.

Maximum vehicle weights were duly increased to 38 tonnes in 1983. Exhibits 21. and 22. illustrate the general move towards larger vehicles within the national fleet over the period of interest.

The results of the 1983 increase have not yet fully worked themselves out, but the evidence available suggests that this legislation will once again have a significant effect on the industry. At the time of the change there were about 72,000 vehicles operating at the then maximum weight of 32.5 tonnes , by

the end of 1985 there were 75,000 vehicles over 32.5 tonnes but of these some 26,000 were at the new limit of 38 tonnes, a major shift in the weight profile of the industry. Department of Transport Statistics 1985. These vehicles were responsible for approximately 14% of tons lifted, and about 26% of tonne kilometres run, reflecting their employment in long distance movements. It is also interesting to note that such vehicles are intensively used, operating at around 78% of capacity. Department of Transport op. cit. The Department has also estimated that the use of 38 tonnes vehicles has meant about 5,000 fewer lorries on the road in 1985. The estimated savings to hauliers amounted to around £80 million in 1985

The effect of legislation in the environmental sector has been of major influence on the industry in the area of costs and also on the structure of the fleet. The analysis of the field work data as discussed later illustrates to what extent the West Midlands Road Transport Industry feels it has been affected.

## CHAPTER 14. TECHNOLOGICAL FORCES

*"Transport in general, and road transport in particular, represent an economic activity exercised using technological means within the context of a given society. Inevitably, therefore, they feel the impact of the technological and social environment."*

International Road Union 1986.

*"Up until the early 1970s people were saying that there had been virtually no technical changes or technological innovations in the automobile since the turn of the century.....Nonetheless, it cannot be said that there have been no changes other than in the bodywork in the 20th. century: horsepower, efficiency, performance and hence the possible uses and prices..... have so evolved that from a product .....limited to the fortunate few, it has become a consumer staple, almost an everyday necessity, at least in the richest countries of the globe.*

*The same can be said of the truck: there has admittedly been no such radical technical developments such as the changeover from the steam engine to electric traction on the railways or from propeller driven to jet planes. But the truck, or trucks, that exist to-day are very different economic commodities with a far greater range of functions and uses than their forbears."Organization For Economic Co-Operation And Development*

1986.



These two quotations from very different bodies illustrate the importance attached to technological influences within the road transport industry. They cannot be ignored since they contribute to the factors which the individual transport manager must combine within his management mix, if the company is to succeed.

The effects of the changes which are taking place in the technological environment can be divided into two broad areas. The impact on the operations of the enterprise and the effect on the people in the enterprise.

The main area of interest for the purposes of this thesis must nevertheless be the effect of technological innovation on the operating effectiveness of the firm.

The main area of change here, might be enumerated as;

Data processing and communications.

Freight Handling Developments.

Vehicle Construction.

#### DATA PROCESSING

The rapid innovations that have taken place in the world of Information Technology over the last few years have been pinpointed as a source of major improvement for transport operations-at least by the IT industry.

The National Computing Centre 1969, was among the first to laud the advantages which computer applications could have for the transport industry. Webb 1972, maintained " that computers would allow the transport manager to change the methods employed in and the organization of their function; they would be able to adopt improved methods of planning journeys and of estimating their duration; and they would be able to introduce information and control systems, based upon journey planning by computer, in order to cope with additional complexities and scale."

The Report of the 61st. Round Table on Transport Economics 1984 felt that the "...introduction of the mini-computer opened up possibilities for widening the application area of the advanced systems of planning, processing, and control of the Urban Goods Movement down to the small and middle sized firms which form a considerable part of the total urban economic structure." The Economic Research Centre 1984 felt that developments in information technologies .." would not replace transport operations as such but were a means of optimising them in the context of a logistical approach to freight flows." The Organization for Economic Co-Operation and Development 1986 points out that " Transport of freight has always been accompanied by the transport of information.....this was true even in the far of days when the merchant accompanied the caravan and conveyed the information in person."

The use of the new methods of information handling would seem to be universally seen as a means of improving the performance of

transport firms. Peters 1985 in one of the very few studies into actual firm uptake in this field listed the following functions as areas where information technology could produce such improvements;

Sales and order processing and invoicing.

Route planning routing and scheduling.

Fleet management and on board vehicle monitoring.

Warehousing and stock control.

Strategic distribution planning.

He then went on to investigate some thirty firms to assess the degree of actual use of IT in their operations. His study covered not only transport firms but also organizations whose major activity was other than transport-although of course, such organizations were involved in the distribution function, they were in other words involved in own account operations. Some 20% of the survey sample were professional hauliers, and all enterprises were involved in multi drop operations.

#### **SURVEY RESULTS**

As might be expected the vast majority of firms utilized IT in the sales and order processing field some 86% using some form of system there. There was some evidence of the upgrading of such methods to allow for example customers to check if their desired

product was in stock. Such approaches would have far reaching effects in transport planning, if they became widespread.

A further 86% of the sample employed computers in the warehousing and stock control function. The chief advantage from the transport point of view was that some firms were able *"... to pick customer orders and assemble vehicle loads, e.g. at the loading bay throughout the "order processing" day."* No single company in the sample was however, satisfied with its ability to record goods in transit movements. These points indicate on the one hand great benefit from the use of IT, since being able to continuously utilise capacity would obviously have a major effect in reducing delivery costs, on the other hand, the difficulty experienced in tracing goods in transit could very well lead to customer service problems and perhaps higher inventory costs. Of much more alarming import was the comment by Peters that *" A number of companies were concerned that the variable routes (delivery patterns) commonly associated with computerised routing and scheduling packages would hinder customer order picking and load assembly further. The development of routes and schedules after last order entry, in order that vehicle picking sheets could be produced and orders assembled, was an additional delay."*

#### **POTENTIAL OR REAL IMPROVEMENTS.**

These considerations would seem to suggest that the benefits in the real world arising from the use of IT may, for many transport

companies be potential rather than real. It is interesting to note that the Round Table Report op.cit. also commented that " A number of investigations show that the information available to consignors and consignees for the organization of logistics and transport do not in fact at present correspond to their needs." It must be noted that the literature is not always consistent on the benefits or otherwise available. Wilcox 1981 for example quotes examples of two programmes originated by British Road Services, Datafreight and Rescue, were proving of great benefit to the professional haulier.

Some 43% of the Peters survey firms employed IT in the round planning or vehicle routing application. The professional hauliers frequently used such packages to aid them in cost negotiations with customers. The other main use as to be expected, was for building up daily routes for vehicles, in conjunction with the sales order processing system. Peters suggested that cost savings of as much as 50% were feasible through the use of IT packages in the routing decision-although empirical evidence for this order of advantage was difficult to find, and available evidence indicated much more modest savings. The use of such utilities would obviously have a major impact on the competitiveness of a transport company and could hold the key to success in the correct conditions. This is obviously a major area for investigation as discussed in Division 2 .

About 40% of firms investigated by Peters utilised some form of fleet management system for the control of vehicle costs and analysis of performance. He nevertheless says, " *Despite the sophistication of modern fleet management systems , including the integration of tachograph analysis and data loggers the majority of systems in use were restricted.....*" Perhaps another indication of the academic approval of IT in transport but its less than full utilization in the field? There might also have been a perception problem, the industry is often seen as conservative and as Peters points out, "*Companies which have dismissed systems in the past as inappropriate often continue to forego the potential of newer systems in spite of system improvements.*"

Although Peters sees many areas of potential contribution from information technology, the road transport industry is likely to remain an area where the full appreciation of IT's contribution will be patchy.

Green, Kearney, Ogidi, Rothwell and Thomas in an unpublished survey entitled, "*Road Haulage and Information Technology*" 1985, point out, " *A second conclusion derived from our research is that the impact of IT is patchy. Major hauliers such as Freightliner and National Carriers, and medium sized firms such as Roadline and Wilkinson Transport, have substantially increased their internal efficiency through the use of IT Even so, these firms, large or medium sized, are still far from using IT to its full potential. The small firms on the other hand, of which there are a*

*great number seem to have done virtually nothing that is IT related other than use the Tachograph."*

For the purposes of this thesis however, the available improvement in operating efficiency which CAN come about through the considered application of appropriate techniques, obviously makes this an area which received investigation in the course of the field work undertaken.

As A. Stanton, Managing Director of Tate & Lyle Distribution Services, pointed out in an article in the "Times" on April 20th. 1987, *"Gaining greater expertise in information technology is going to solve many of our most complex future problems....the opportunities for distribution companies will lie in our ability to develop information systems for retailers and suppliers which permit the development of tailor made systems . Whenever possible we must move data not lorries."*

#### **DEVELOPMENTS IN FREIGHT HANDLING.**

It may seem at first glance, that a discussion of the handling dimension is out of place in a review of the parameters affecting transport operations. This is not so however, handling is the point at which the shipper and the carrier interface and hence attitudes and practices in both camps can affect each other.

The literature, and face to face conversations pursued in the course of this study, indicate that as the general appreciation of

the logistics concept becomes more common amongst manufacturers then the more handling must be seen as a part of an integrated transport flow. The prime objectives of this flow include keeping inventory levels as low as possible consistent with pre decided customer service levels, which can often mean organizing smaller flows in terms of unit size, but moving them more quickly through the logistics pipeline. At the same time, attempting to reduce associated handling costs as much as possible within the overall logistics service targets.

In the past, because of the lack of integrated transport systems, handling methods have developed within individual enterprises in the chain, adapted to the specific requirements of one member of the pipeline but not for the entire transport chain. Consignors, carriers and consignees, tended to optimise their in house system with scant regard to the rest of the logistics chain. As the integrated concept became more widely accepted then homogeneity of handling techniques also became desirable. From the point of view of the transport firm, the difficulty is that flows may effectively change in size as they move down the pipeline.

The transport firm may easily find its customers demanding a particular level of handling for what they regard as a major product flow, whereas for the individual haulier groupage and de-groupage may have altered the scale of traffic to a level where the type of handling desired is not economic. This can result in a deterioration in customer relations, price arguments and perhaps



even a loss in business. Most automated freight handling systems, even relatively simple ones, are expensive, the problem is distributing the cost of such systems among the component companies of the logistics chain; between the consignor, carrier, and consignee. It may be worth remembering here, that as information handling developments forge ahead outside road transport, more and more customers obtain the ability to handle greater volumes of information more effectively and they may very well demand greater "through system" speeds. The transport operator is obviously a key actor in any attempt to improve such speeds and consequently will be affected by changes in handling efficiency requirements.

#### **EFFECT OF NEW SYSTEMS ON THE INDUSTRY**

The embracing of improved systems of freight handling may very well be one of the keys to success in the road transport field, although it is interesting to note many customers may feel that perceptions in the industry are poor in this respect. "Road Transport and the Public Warehousing Sectors have a number of endemic attitudes stemming from scale and structure. Unlike forwarders, traditionally, they have been poor industrial marketers and are responsive to Buyers demands, rather than being innovative in systems, or creative in their own right as volume sensitive activities, and their is an overbearing preoccupation with short term resource utilization and management effort tends to be concentrated on selling with a myopic

*concentration on price rather than value or system efficiency.*

*Significantly within the retail sector , practically all the major initiatives for compatibility of handling systems, equipment, administration, data processing , and unit handling have come from the purchasers of, and not the providers of transport..."Harvey 1983.*

#### **VEHICLE CONSTRUCTION**

Changes in vehicle construction can have a major effect on the operating effectiveness of the transport firm. Most vehicles in use to-day are of a design which has resulted from the resolution of competing interests. They are essentially a compromise between the needs of the shipper, the operators desire for productivity and economy, and the demands of legislation giving effect to concerns about the environment. The compromise by definition must include trade offs between the various interests and relative strengths between them.

The rising acknowledgement of the importance of logistics within the manufacturing sector is expected to have repercussions for the transport industry. The spread of systems with stretched flows or zero stocks is of primary import here. These methods of operation are logistics systems whose primary objective is the minimization of intermediate inventories during production phases which are required to produce complex products, such as for example motor cars. Such systems include the Japanese Kanban approach or the

British Just In Time method. The main effect of these techniques is that they require control of the volume of components moving to the production point and usually result in a requirement for more frequent, less bulky and more regular transport flows. This in turn means that vehicles must be capable of the more flexible response which this dictates. The problem for the transport operator arises from these requirements, the need to respond to shippers demands gives rise to a need for a greater variety of vehicle bodies and capacities, whereas the haulier is traditionally attracted to intensive utilization of specialized vehicles as the pathway to greater earnings. The successful resolution of this type of conflict is difficult but is necessary to ensure the continued existence of the business.

As the concept of an integrated logistics system gains ground in industry, the role of the haulier in such a function means that his choice of vehicles must become much more finely attuned to the needs of the market. In the past most short haul movements were carried out in standard vehicles which differed from long haul lorries chiefly only in weight, yet it is mainly in the short haul field that integrated logistics movements will take place.

#### **IMPACT ON SHORT HAUL OPERATIONS.**

The term short haul transport is conventionally seen as having specific characteristics, namely short stem journeys from a base followed by a tour consisting either of drops or pick ups or a

combination of these. Distances and areas covered varies, as does the size and composition of tours, but they never exceed one day for an individual task. Materials Requirements Planning, (MRP1) and Manufacturing Requirements Planning (MRP2), and ultimately Logistics Requirements Planning (LRP) all encompass the zero inventories approaches already mentioned such as Kanban and Just In Time production planning. These systems all have a common feature, the close intermeshing of logistics requirements and the transport function, and their heavy bias towards short haul transport.

Hence MRP 1&2 and LRP oriented firms will demand far shorter loading and unloading times and an on demand response to deliveries. They will also demand more frequent communication with their administrative centres and are likely to need flexible response to a wide variety of transport needs. As the information handling ability spreads" down the line" the capability of processing data as close as possible to the reception and loading areas might introduce wide ranging changes in body design and in vehicle equipment for short haul vehicles. It is already possible to have on board computing facilities receiving messages over the air whilst the vehicle is in motion. Paper exchanges might for example, take place out of the vehicle terminal at the point of delivery. It is unlikely that the future will see the simple straightforward short route delivery vehicle which has been the standard of the past. This is an area where the haulier's response

or otherwise to changes in the market receive further comment in Division 2.

The long haul area is also experiencing changing requirements, although in this area the major trend is the move towards bigger and heavier vehicles this has already been discussed. There is a dichotomy here which it is necessary to address. The haulier whilst wishing to operate as large a vehicle as possible is limited in this desire by the volume of traffic available on particular routes. From the view point of the shipper large bulk movements may be possible on some routes only by spacing out shipments and allowing inventory to build up until critical load size has been reached. This approach obviously runs contrary to all of the precepts of MRP1&2 as well as LRP.

The method adopted to deal with this problem was the emergence of the various forms of groupage, regional distribution centres, and intermodal transport formats. In many ways the haulier was forced to adopt his forms of trading, especially the sources of his traffics to accommodate his desire to move to larger capacity vehicles on the longer haul journeys.

## CHAPTER 15. ECONOMIC FACTORS

As has been already pointed out, road transport faces a derived demand. The freight transport industry is not desired for itself but as a means of moving goods in particular quantities to specific locations so that a direct demand can be met-hence in reviewing the parameters the industry must operate within the influence of economic activity levels cannot be ignored.

*"Road transport dominates the inland movement of goods within the United Kingdom, furthermore the share of the annual tonne kilometre output which moves by road continues to increase. Between 1972 and 1982 road increased its share of the total transport market in this country by about 0.61 per cent per year. There were of course periods of levelling of and even comparative decline. This was especially marked in 1973-74, but by 1975 road was once again on the upswing."* Organization For Economic Co-Operation and Development 1986. These short term set backs are usually due to the sensitivity of road transport demand to general economic activity. Other modes, especially rail, have a different industry structure, and their traditional markets, such as heavy goods, have longer lead times in their response to activity changes. The general position is of a healthy growth in road transport despite short term setbacks.

GDP And The Demand For Transport

|                            | Low Scenario |         | High Scenario. |         |
|----------------------------|--------------|---------|----------------|---------|
|                            | 1976-85      | 85-2000 | 1976-85        | 85-2000 |
| GDP U.K.                   | 1.5%         | 2%      | 2.8%           | 3.5%    |
| Total Trade<br>Transported |              |         |                |         |
| In tonnes                  | 44.6         | 65.2    | 50             | 90.5    |

Exhibit 23

To show relationship between GDP and total trade tonnes transported. Based on Dutch Ministry Of Transport model for EEC and Spain.

Source: van Es 1982.

### Reserved Markets.

There are many explanations for the vigour of the road transport industry. An important one is the concept of reserved markets. Exhibit 23. shows that the total demand for transport, for all modes is strongly influenced by the Gross Domestic Output of the economy as a whole. The modal split, that is the demand for particular modes of transport within this global demand has already been discussed, but in simple terms it can be said that not all modes compete freely for a share of the total available transport demand. There are certain market/product combinations which virtually predecide which mode will dominate their movement.

Modes do not compete for traffic across the entire product spectrum. Blauwens 1985 claims that even when the road sector raises its prices and experiences considerable delays it will still maintain its competitive position against the other modal choices. Voight 1984 states that these reserved markets can be explained by the fact that for a given type of transport the services offered correspond more closely to the preferences of the shipper, and the cost structure of other modes is such that they cannot provide a comparable service facility. An obvious example of the creation of a reserved market for road transport is in areas which are geographically remote from rail and other services. In the field of high frequency, low load multi drop services, road is the only transport mode capable of providing a cost effective service over virtually the entire United Kingdom.



Even a cursory examination of the statistics available indicates the existence of some degree of reserved markets for road transport in for example , the movement of foodstuffs, 98% of tonne kilometres, agricultural products, 96% of tonne kilometres, chemicals, 90% of tonne kilometres, machinery, 90% of tonne kilometres, all move by road. Contrast these with the movement of solid mineral fuels by road, 39% of tonne kilometres and only 8% of tonne kilometres for petroleum products. In this respect of road receiving a reserved share of the total transport market it is important to bear in mind the basic modal characteristics. The literature points to road transport as being ideally suited for the movement of comparatively small bulk units, below 38 tonnes, and for flexible pick up and drop routines

There were approximately 1,367,000,000 tonnes of goods moved by road in 1985 some 298,000,000 tonnes moved on journeys of over 100 kilometres, that is only about 27%. The market is in other words dominated by short haul movements, journeys which for the most part other transport modes are not ideally suited. There are of course other factors which have contributed to the growth of the road transport sector. A brief examination of the period of rapid growth since the 1950s, and the period of consolidation after 1970 will illustrate these factors.

### Energy and Vehicles.

Since the 1950s there have been rapid strides in the improvement of the mechanical performance of the lorry. Improvements appeared in speed, reliability and cost effectiveness, the results were that vehicles were able to meet the demands from industry and commerce for a high quality freight transport service with costs being kept relatively low. The availability of plentiful supplies of cheap fuel over the period from the end of the Second World War until the Six Day War meant that the industry could expand to meet increased demand without running into a barrier of steeply rising running costs. Indeed the real cost of fuel actually dropped over the time in question.

### Entrepreneurship and entry capital.

There are no large capital requirements needed to enter the road transport industry. Hauliers do not bear the full cost of the infrastructure they use and are cross subsidized by other road users. The industry would appear to have a never ending supply of individuals willing to enter the sector even although their casualty rate is high. The nature of the industry with its fragmented market structure and relatively few large firms and at least for the period discussed, rapid expansion rate, was an irresistible magnet for the small entrepreneur.

### Control of the Railways.

The regulation of railway rates, and the constraints of being a nationalized industry made it more difficult for the railway to respond to the growth of the road transport industry. The early lack of regulation for the road transport industry meant that the industry could establish itself with little outside interference.

### Structural Changes, and consolidation since 1970.

The period since 1970, has been one of consolidation of the pre-eminence of road transport, and also of structural changes within the industry. The oil price crises of 1973, and 1979, and their accompanying recessions in industrial activity forced many sectors of industry to re-appraise their operating methods. A new emphasis on efficiency and a willingness to adapt operating systems to achieve it was everywhere evident. The domination of the market place by manufacturing industry declined. In the twenty or so years before 1970, transport firms were preoccupied with the technical aspects of their operations rather than with the nature of the markets they served. The new environment meant that for survival a new awareness of market demands had to emerge. The 1970s seen the relatively simple distribution chain become more complex, and power within it change. The increasing concentration ratio in retail distribution meant that the consumers of transport services, that is the retail chains, began to set standards of operation dictated by their needs.

The manufacturers declined in influence, and the road transport industry previously geared to the desires of the manufacturer had to adapt to the needs of the consumer of the product moved.

In more general terms the period since 1970 has seen a major growth in new management techniques all designed to determine the needs of the consumer as accurately as possible. The spread of the means of mass communication and the increasingly sophisticated consumer tastes influenced by it, have meant a demand for a much greater variety of goods-often with shorter market lives than ever before. The business community has become much more aware of the need for accurate inventory control, the need to lower capital frozen in goods in transit, the costs of stock outs, the influence of lead times, the need for better market penetration , in other words more effective logistics management. The road transport operator either provided such services, and adapted as required or he went out of business."*No transport provider can compete effectively in this market focussed world unless he responds to the new specification.....The transport operator must be dynamic and adaptable. He must build in flexibility and obsolescence into his technologies , techniques, and attitudes; and he must regard investment as continuously at risk.*" D. Petit *ibid.* 1973.

## CHAPTER 16. GROWTH STRATEGIES.

Assuming *ceteris paribus* with regard to the general environmental and financial requirements for growth, what is it that leads one enterprise to grow successfully and others to remain the same size or indeed decline?

In a non technical sense the answer to this question may be held to be that the more efficient or more productive firm will succeed. The problem is to decide which is the more productive firm, that is how would we measure productivity, and in what ways does this ensure that such firms grow?

There are a great many definitions of productivity in the literature, due to the fact no doubt, that the subject is connected with a wide range of macro and micro economic problems. They all, however, have one facet in common, that they relate productivity to the ratio of output/input. Starting from this point Woude 1975 goes on to develop the view that for transport productivity does not need to be measured in physical output, but could equally be the money output per unit of money input, that is the productivity of a firm would be maximised by maximising the ratio of total revenues /total costs.

Woude continues " *In road transport where economies of scale..... do not play an important role, maximising the overall money productivity means;*

*To select a product mix in which products with a high revenue/costs ratio have a maximum share.*

*Aquiring a maximum price for the services rendered.*

*Minimizing production costs.*

In the context of this thesis the student would put forward the belief that the main points brought out by Woude can be seen as being part of the overall marketing strategy of the firm, and of course of the core objective of the project.

Marketing in this context is intended to be an omnibus term, rather than a specific indication of a management science activity.

Marketing strategy is used here to cover the general strategy which a transport firm adopts to project the range and availability of the services which it can offer to its customers, together with the means which it employs to further its existence against competitors. The structure of the industry, with the overwhelming presence of small firms in many sectors, means that formalization of such strategies is rare. Many conversations with hauliers indicated that their major management effort was indeed within the areas which would normally be grouped under "marketing activities", but seldom did they perceive these activities as part of a formalized strategy. Indeed for the most

part, although transport operators did in fact work within a framework of procedures and policies, such management styles-for this is what they are, were reactive, rather than active. That is to say, management styles in the small firm sector tended to be the result of pressures from forces exterior to the company rather than thought out strategies designed to lead the customer. The situation in the larger organizations was found to be a combination of both of these elements.

A full discussion of these findings is to be found in Division 2 of the thesis.

#### THEORETICAL BACKGROUND

The literature dealing with management strategies in the marketing area is vast, and is not really the focus of this study, there is nevertheless a general agreement in the global nature of the types of information input and decision outputs which are basic requirements for the development of effective marketing strategies. The body of the literature centres around detailed discussion of these elements. O'Shaughnessy 1984, Porter 1980 and Wensley 1981 typify the general approach to input and output information which the student feels is applicable to the road transport industry. The key areas to be considered include

## THE CORE OBJECTIVES.

All activities including business activity require an objective , a target or series of targets which the activities are intended to achieve. The market objectives of a business represent the ambitions and commitment of its creators.If no clear target exists then the managers of activity will find it difficult to co-ordinate resources effectively, since there will be no clear intention of the desired result of their labours. The defining of these strategic objectives can be either an extremely complex task, or it can be relatively straightforward. The complexity of the project will be very much determined by the desired degree of detail, and by the scale of operation of the organization concerned. In the road transport industry it could be argued that most organizations would tend to the view that the definition of objectives, where they are attempted at all, should be as clear cut as possible.

Such requirements could be met by the setting of the market share it wishes to obtain, or the market it wishes to enter. The statement of target rates of profit, or the laying down of levels of cash flow which the firm expects from its activities. The clear statement of long and short term objectives enables managers to appraise their activities within a mutually accepted framework. The small haulier is in a more difficult position since field work illustrated that he frequently had no clear thought out objectives, nevertheless, it was felt that this was often as a result of a



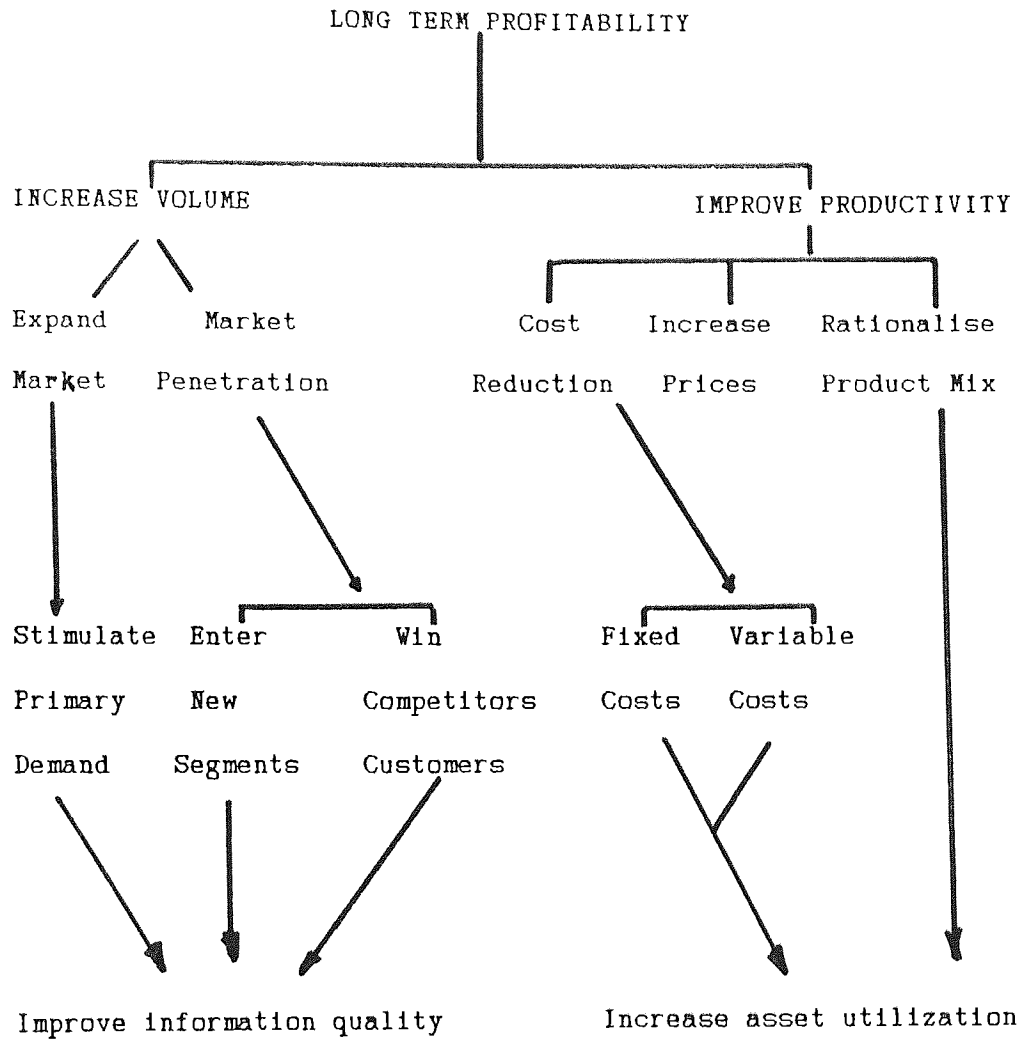


Exhibit 24.

To illustrate growth options within the Strategic Focus.

Source: Doyle and Saunders 1985.

failure to conceptualize rather than from an absolute lack of such objectives. In this context it might be pointed out that given the owner operator status of so many of the small transport firms, there is a lack of a "sounding board" for such conceptualizations, and many might even say for the need for them.

#### **DISTILLATION OF TARGET OBJECTIVES.**

Given that even where there has been little formalized thought devoted to the need for stated strategic objectives there still exists some framework of targets, and that in other organizations they will be stated, then the road transport firm must develop a focus for its efforts to obtain these objectives. In the framework of the society in this country to-day then it is a fairly safe statement to hold that all long term objectives within the professional haulage sector must contain at their core the improvement, or at least the maintenance of the long term profitability of the business. The strategic focus must then centre around methods of reaching this target.

Exhibit 24 summarizes the approaches which it is suggested may be adopted in the road transport industry to achieve such a goal.

There are basically two paths open to the haulier, he may try to increase the volume of business he handles, or he can attempt to improve his profitability on the existing market share by

implementing internal schemes to improve the effectiveness of his operations.

If he elects to take the path of expanding his throughput he is again presented by a variety of choices.

He can expand the base market which he operates in. This might for example, be achieved by stimulating primary demand. In the case of the road transport industry this could be attempted by for example a campaign to bring home to own account operators the advantages they might obtain by employing the services of specialist hauliers, illustrating this by the continuous decline of the share of traffics moving by the own account mode. On the other hand there a variety of strategies available for persuading potential customers that the method they employ for movement at present such as for example rail, had disadvantages not experienced by road. He might in other words seek new customers for the services he already provides, or stimulate existing ones to utilize his services more extensively than they do at the base time.

#### **MARKET SEGMENTATION**

In attempting to expand his base market he might decide to enter new market segments. This can be an especially advantageous strategy in the highly segmented road transport industry. The principle behind this strategy is to identify either segments of

the market already serviced which signal growth, or to move into new but related territory. TNT one of the fastest growing firms in the express parcels delivery area have in May 1988 moved into the air freight business , to allow overnight delivery of parcels to European destinations to match their overnight delivery by road to United Kingdom destinations. The haulier might also for example target the expanding demand for services related to the growth in integrated distribution systems such as that of Marks and Spencers, or in the Just In Time high transport response production systems.

On the other hand the transport operator could decide that his most realistic strategy would be one of increasing his penetration into his existing markets. He would in other words concentrate in winning customers from his competitors either through price or service competition.

In essence the haulier who opts to improve his long term profitability by concentrating on his markets will have to develop strategies to compete with other transport modes and methods of operation, or be able to identify new opportunities, or be able to attack competitors already established in the same area of activity. This implies at least some degree of freedom of manoeuvre, and access to market intelligence information. It also assumes that the enterprises concerned are prepared to lead the market, at least occasionally and act rather than react.

All of these activities require a greater or lesser degree of marketing management awareness and expertise, and not a few operators might feel that a more introverted approach to improving their profitability would stand a better chance of success. In these cases, the obvious path is to concentrate on internal moves to improve the operating effectiveness of their existing fleet.

#### REDUCING OPERATING COSTS

There are a variety of approaches which the operator may adopt in attempts to improve the productivity of his fleet. They can be broken down into attacks on costs, the possibility of increasing prices, and the rationalization of his fleet and or transport related activities.

Attempts to reduce costs will usually start with a review of the basic fleet costs. The normal division of these costs is between running costs, that is those that vary with the usage made of the vehicle, and standing costs, that is those which have to be met whether the vehicle is running or standing idle. Typical running costs would include fuel, spares, tyres, materials, maintenance, and drivers wages. The only point of argument in the literature is whether drivers wages can be regarded as a running or standing charge. Edwards and Bayliss 1970, favour under running, others such as Lowe 1980, favour wages being regarded as a standing charge, since in to-days conditions labour cannot be shed on a

weekly, or indeed daily basis to suit slack times in vehicle utilization. Standing charges would normally cover items such as insurance, licences, depreciation, finance, buildings, and staff wages. From the point of view of gathering information for the fieldwork required for the thesis under review, the import of this division has influences on basic cost information. Edwards and Bayliss op. cit. conclude that running costs account for approximately 68% of vehicle costs and standing costs about 32%. If this break down is adopted by an individual haulier, he might very well come to the conclusion that the first step he should take in any scheme to improve the efficiency of his fleet is to concentrate on the running costs of his vehicles. This could lead him to invest time and money in means to up grade his routing and scheduling procedures. We are not criticising such acts, but would contrast them with the approach which might arise if the opposite categorization of costs were adopted.

If it is held that the driver is as necessary part of the vehicle as the engine and cannot be escaped as long as normal working takes place, and consequently should be regarded as a standing cost, then relative burdens change. Running costs would then appear to account for some 34% of total costs and standing charges 66%. Given that breakdown then the haulier might decide that the most obvious method of reducing costs is to cut the size of his fleet. In those circumstances the thrust of his management effort would be in the direction of calculating the minimum fleet

size he could operate with, consistent with his customer service policy.

The essential point being made is that the successful transport operator will likely be one who has accurate information, on the basis of the assumptions he finds most realistic, which provides him with knowledge concerning the costs of his business. Poor quality information must result in poor quality management information. All other things being equal, the greater the integrity of information upon which management decisions are based, then the greater the chance of the correct decisions being made. Since there is no more basic level of information than the costs of operating the fleet, then any attempt to improve performance in this area must start from quality information.

#### PRICE INCREASES

The possibility of increasing prices as a means of improving the long term profitability of the haulier may at first glance seem suicidal. It has already been pointed out however, that there is not one vast transport market, but a large number of sub market segments. The existence of reserved markets means that as Blauwens op. cit points out, road transport can raise its prices at least within spectrums of tolerance without losing custom. The difficulty is of course, that this may apply to the sector as a whole but not to specific haulier's product/market combinations. The status of price and demand for services in the road transport

industry is one of considerable controversy. This stems from a series of studies carried out in the late sixties and early 1970s. Edwards and Bayliss op. cit. came to the conclusion that the most important factors determining whether a manufacturer would choose a professional haulier or his own transport to move goods, were length of haul and size of consignment, all other factors including costs, were deemed to be of little influence. This appeared to contradict the results of an earlier, 1958, survey by the Traders Road Transport Association, which indicated that speed and costs were the most important reasons for choosing between transport operations. A further study by Sharp op. cit. under the auspices of the Ministry of Transport, came to the conclusion that price and speed were important factors in choice. It is interesting however, to note that in the Sharp survey the only time when transport managers indicated that a lower price might not secure a contract was when "*... a number of transport managers said they would not accept the 'cut price' rates of small private hauliers whose quality of service might be low or erratic.*" The weight of the evidence would seem to indicate that increasing prices would be a viable strategy only when there were some form of specialist service provided, or where high levels of service were desired, and were felt worth paying for. **But** see discussion on reserved markets.



## FLEET RATIONALIZATION

The rationalization of the fleet is the last of the alternatives discussed as a means of increasing long term profitability. The essential target here would be to identify those activities which are not contributing as effectively as they should to the profitability and or cash flow objectives already decided. Here again the basis of such identification would rest on information quality concerning the performance of individual or groups of vehicles. This could be done for example by drawing up performance ratios for the components of the fleet. The ratio between income per week and costs per week would for the purposes of illustration indicate those vehicles which were performing well or otherwise. As this ratio moved towards unity then management action would be indicated. The ratio approach can of course be extended to include income per drop to cost per drop, income from type of traffic to revenue, and indeed income from type of body/tractor combination to cost. The haulier would be capable of identifying those areas of his business which appeared to be going into decline and those poised for an upswing. Armed with this information he could decide whether rationalization of his activities was appropriate or not. It is not the intention to enter into a wide ranging review of management techniques , merely to put forward the view that successful transport organization might be expected to employ some or all of these approaches, and therefore it is legitimate to seek out evidence to support or refute this belief.

## TARGET CUSTOMERS.

The crucial next step in any strategy of growth must be the identification of target customers and concentration on capturing those with the greatest potential contribution to profitability. One of the great dilemmas facing the transport operator is to decide between offering a 'transport service' for sale and attempting to attract customers of a general demand type to his business to allow him to operate his general vehicles to maximum effectiveness, or to assess the needs of particular market segments, tailor his services to the demands of that sector's customers and seek a trading position on that basis.

The literature of marketing strategies frequently makes the claim that the successful company is the one which decomposes its market into a series of relatively homogenous groups and then concentrates on those with the most potential. This policy is said to be at the heart of the successful penetration of foreign markets by Japanese companies. This again is an area where evidence will be sought to support or reject the effectiveness of such a targeting policy in the professional sector of the road transport industry.

## COMPETITOR TARGETS.

Complementary to the strategy of identifying specific customer targets is the policy of anticipating the likely actions of

competitors in their attempt to attack such important groups. Porter op.cit. emphasised the importance of anticipating such actions on the part of the firm's most threatening competitors. It is of crucial importance to identify which methods the competition is likely to introduce into the market. They could for example try to attack by offering higher service levels, or lower prices, or try to secure the greatest value added segment by providing dedicated services. It is not important to cover all the possible competitive combinations, merely to bring out the point that knowledge of the rivals competitive strategies is important in planning growth.

#### **DIFFERENTIATION AND MARKETING MIX**

The company which is successful must be aware of its competitive advantage. The employees of the firm must be familiar with the attributes which differentiate them from their competitors, otherwise how can they convincingly deal with customers both existing, and perhaps more importantly potential. In the same vein great thought must be given to ensuring that the service line which the haulier deals in must be consistent with the general strategic thrust of his business. There is no point in deciding to enter a particular market, whose requirements conflict with the basic path of the firm, for example entering the refrigerated sector when all investment has concentrated on non temperature controlled facilities. It would be expected therefore, that the more successful enterprises had a clear concept of the advantages they

provided over their competitors services, and showed evidence of a rational approach to the services and facilities they added to their portfolio.

## CHAPTER 17. METHODOLOGY

The purpose of this section is to emphasise the researcher's belief that there should be a strong link between how the investigator sees the real world and the methods he employs to examine it. It draws heavily on Tomkins And Groves 1983.

The selection of an ontological viewpoint is not straightforward, nor is it held that such a choice need constitute a life long marriage, but once made then a state of sequential monogamy might be said to exist. The chosen ontology can be seen as having a major affect on the epistemology employed since the real world viewpoint must influence the beliefs of how knowledge can be collected, collated and analysed from the universe under investigation.

As in the marital state, if the analogy can be extended, the movement from one partner to another is not prohibited but must be justified. If one ontology cannot develop in sympathy with perceived changes in the nature of the area under study, then a new partner may be sought, but only after careful consideration that the move is justified. In the same mould, trying to draw on two or more ontologies at the same time is a recipe for confusion and conflict. These compounded by misunderstandings caused by the leakage of concepts and practices from one area to another.

On the other hand, as with the institution of marriage, such views might be seen as springing from lack of contact with the real world. The idea of conceptual purity might it could be argued sound fine, but the complexities of the actual world of research as opposed to that of the philosopher, mean that some blurring of the edges must occur.

It could also be argued that in the interests of the total view a variety of experiences and ontologies should be sampled. There may be much to be said for this standpoint, but surely the watchword must be yes, but not all at the same time!

#### THE RESEARCH ACT

Websters International Dictionary defines research as *"a critical and exhaustive investigation or experimentation having for its aim the discovery of new facts and their correct interpretation, the revision of accepted conclusions, theories or laws, in the light of newly discovered facts, or the practical application of such new or revised theories conclusions or laws."*

A reading of the literature would reveal that in addition the objectives of any research are to describe, explain and predict phenomena.

In the light of this definition and the set of objectives it might appear that the researcher must simply identify an interesting

problem and then set out to observe, record and interpret that which he sees or perceives to be going on. The difficulty here is that in many areas of interest the subject for investigation does not exist in a detached discrete framework containing generally agreed upon anchor points. A great many studies are concerned with the human entity and his relationship to the physical and social world around him. As a result careful consideration must be given to the nature of this relationship and the appropriate tools for its rigorous analysis.

#### COMPETING METHODOLOGIES

In the past the great bulk of rigorous research was conducted in the physical sciences. As a result a methodological approach was developed which became regarded as "right practice" and an essential reliable framework for new investigative projects. As interest in the social sciences developed they in their turn wished to break new ground and sought a framework within which to conduct this research.

In the initial phase many sociological areas sought respectability and acceptance by attempting to prove that they too were sciences in the traditional mould. Indeed in many textbooks on economics and various aspects of sociology the first chapter was frequently of the "Is economics or .....a Science?" type. There seemed to be a need to confirm what were essentially theories about human beings and their social actions and interactions within a framework of

validation which had its roots in the investigation of inanimate materials.

Many social scientists seen the models for research into the physical sciences as the standards against which all their efforts were to be judged.

It is of course, not claimed that the methods used in the physical sciences were somehow flawed or unreliable, merely that other research methodologies might be valid in appropriate circumstances

It is then to sociologists that we must look to for the development of research approaches outside the framework of the concepts of natural science which may make "good practice " for the investigation of social based phenomenon.

#### IS A METHODOLOGY REQUIRED?

In the course of the evolution of social based methodologies it was perhaps inevitable that some school of thought should pose the most basic question of all; is a methodology really needed for valid investigations anyway?

George Caspar Homas states in his Handbook of Modern Sociology "  
*The most important advice I can give the modern sociologist has nothing to do with the validity of my arguments. It is this: you do*



not have to believe anything about theory or methodology that is told to you pretentiously and sanctimoniously by other sociologists- including myself. So much guff has gotten mixed up with the truth that if you cannot tell which is which you had better reject it all. It will only get in your way. No one will go far wrong theoretically who remains in close touch with and seeks to understand a body of concrete phenomena."

Surely a crie de ceure that too much can be made of the methodological argument. It might also be seen as an encouragement to get on with the study and avoid too much isoteric philosophising, a view perhaps particularly applicable to the field of transport studies!

#### THE NEED FOR METHODOLOGY

On the other hand the transport field is one where the social interactions of the human actors and the real world are very complex. Any tendency to agree with Homas is counterbalanced by observations such as that passed by George Herbert Mead in "Creative Intelligence:Essays in the Pragmatic Attitude",where he is of the opinion that " *continuous advance in science has been possible only when analysis of the objects of knowledge has supplied not elements of meanings as the objects have been conceived, but elements abstracted from those meanings. That is scientific advance implies a willingness to remain on terms of tolerant acceptance of the reality of what cannot be stated in the*

*accepted doctrine of the time, but what must be stated in the form of contradiction of those accepted doctrines."*

This surely holds that methodologies should not be totally rejected but that a framework for investigation be acknowledged together with a preparedness to adapt that framework in the light of the results of the investigation. That is, a particular approach to the gathering of information is required, but this does not preclude its modification.

This is taken further by authorities such as Bulmer 1956 when he states that *"We can, and I think must look upon human life as chiefly a vast interpretive process in which people singly and collectively, guide themselves by defining the objects, events and situations which they encounter.....Any scheme designed to analyse human group life in its general character has to fit this process of interpretation"*. Denzin in "The Research Act" interprets Bulmer as calling for *"research and theoretical designs that accurately capture what he regards as the special features of human interaction. From this perspective the study of methodology demands a consistent theoretical perspective; theory and method must go hand in hand."*

A need for a methodology within which to construct a project is recognised by these authorities whilst at the same time they are calling for the development of methodologies which are apposite to the study of the social world. The natural science model is not

being rejected as ineffective simply as not being flexible enough to deal with the social interactions of the human experience.

Denzin 1975 develops these points *"I hold that methods are indeed of great theoretical relevance-that in fact every method has a different relevance for theory, and that significant advances in substantive sociological theory will occur only after sociologists adopt a consistent and viable framework for the dual analysis of theory and method. Each can be best assessed and evaluated in the same general framework...."* *"The function of theory which I define as an integrated body of propositions, is to give order and insight to research activities. Methodology on the other hand, represents the principal ways the sociologist acts on his environment; his methods, be they experiments surveys or life histories, lead to different features of his reality, and it is through his methods that he makes his research public and reproducible by others. As the sociologist moves from his theories to the selection of methods the emergence of that vague process called research activity can be seen."*

A coherent methodology is seen therefore as a requisite for research activity and the methodology must be relevant to the problem under examination. This stance is re-enforced if it is accepted that the objectives of research should include the description, explanation and prediction of the phenomenon under study.

To explain and predict phenomena implies the acceptance of the establishment of causality between the variables seen as affecting the system under investigation. This requires the acceptance of one or a set of relationships or hypothesis to the exclusion of others, that is verification must be established. Asher, maintains that to achieve this, then a temporal sequence of observations must be completed, co-variability must be shown and there should be the negation of a rival hypothesis.

To carry out this sequence of events then some form of framework must be established to allow continuity of activity.

If therefore the road transport industry is to be investigated in an organized way, then it is held necessary to select a methodology which is generally accepted as suitable for meaningful research activity to take place.

If the industry is seen as being affected not only by readily identifiable concrete forces such as legislation, but also by human actor's reaction to these factors, then by the same token the selected methodology should be such as to allow useful study of these elements.

## CHAPTER 18. NATURALISTIC VERSUS SCIENTIFIC METHODOLOGIES

There is a wide variety of methodological approaches available for any particular project, but the choice must be made not only between sub sets of methods but also between the two principal schools which have only been mentioned thus far. These are the naturalistic and the scientific approaches.

It is true that the core objectives of the two schools are the same; but there are crucial differences in emphasis. These centre around the location of theory generation and the nature of the environment within which research is conducted. To explain the choice of methodology which was finally arrived at for this project then it is apposite that these differences in ontological and epistemological frameworks be examined.

In considering definitions of research processes it is always as well to bear in mind that definitions are essentially ideals. There is little doubt that it could be argued for example, that there is no such thing as the purely scientific approach, since many scientists themselves point out that the concept is essentially a product of science philosophers rather than practioners. This might be illustrated by the current argument concerning the experimental validity for the existence or non existence of the "Quark".

## THE SCIENTIFIC APPROACH

The key characteristics of the scientific methodology can perhaps be categorised in a relatively small number of discrete steps.

A wide search of the literature is followed by the formulation of a theory stated in terms of relationships between previously decided categories of subjects.

This step is used to identify a "research problem" which is used as the basis of a hypothesis or set of hypothesis; these in turn are broken down into dependant and independent categories appropriate to the theory established as above.

The study then moves onto the collection of numerical data which measures the identified variables in an exact way.

This stage also has certain very marked characteristics;

The data collection methods are usually explicit and obtrusive in some way, usually physical employing exact quantitative or qualitative scales.

Causal variables are identified and MANIPULATED and extraneous variables tightly controlled.

There then takes place a verification stage based on statistical analysis of data collected from the current area only. These steps have wide ranging implications for the study. It should be noticed that there is a firm theoretical and variable specification drawn up prior to the start of the project. The methods of data collection are explicit and usually obtrusive. There is in other words deliberate intrusion into the universe being examined.

This format or some variation of it is generally regarded as the standard research approach which held sway in most areas of study until the early 1960's.

There are many authorities, as previously mentioned, who have questioned its relevance to the investigation of socially based phenomena, and it should be stressed that the business world, including the transport world are essentially socially interactive universes. Bulmer 1956, points out, *"the conventional protocol does not pin down in an exact way the nature of the analytical elements in the empirical social world, nor does it ferret out in an exacting manner the relations between these analytical elements."*

Perhaps the most serious criticism of the extreme scientific stance, at least in this researcher's opinion, is that by regarding all elements under investigation as having universal values which can be measured in an exact manner, such a methodology can

distance the researcher from how the participants perceive what is "going on".

In the transport industry it is quite possible to argue that some sectors have developed a form of subculture from which certain categories of outsiders are excluded. As a result certain aspects of their business activities would be at worst impossible to measure, at best open to wide interpretation. Bulmer argues this point maintaining that a scientific viewpoint enables the investigator to distance himself from the subject system, confident that his measures will reveal the true nature of the activity under investigation "*The research model can become a substitute for intimate knowledge of the field being studied.*"

#### THE NATURALISTIC APPROACH

The naturalistic approach is understood as referring to the style of research advocated by Bulmer 1956, Denzin 1975 and which owes much to Husserl's phenomenology, Dilthey's hermeneutics, and James's pragmatism. It is concerned with moving as close as possible to the viewpoint of the human actors in the area under study, attempting to appreciate their reality as perceived by them not the observer. It is NOT the importation of physical sciences methods and frameworks.

Bulmer 1956 held that such an approach would overcome the problems inherent in the scientific approach when applied to



social interactions, since the naturalistic method should be based on exploration and inspection.

#### THE EXPLORATION STAGE

The first or exploration phase, should take the form of obtaining close contact with the area under review whilst at the same time the researcher should be *"developing and sharpening his enquiry so that his problem, his direction of enquiry, data and analytical relations and interpretations arise out of, and remain grounded in the empirical life under study"* Bulmer op. cit.

The main thrust of such a view of research is to develop the "question" or research problem through familiarization of the world under study. The scientific approach would be to develop a problem prior to coming to grips with the study area, and have predecided means of measurement to test pre decided hypotheses. In the naturalistic approach flexibility is a key element, differing observation points should be adopted, so that significant data sources can be identified, and the vital relationships within the system selected for closer inspection. Given the belief that the real social relationships within an interactive situation are seldom what they first appear to be to the outside observer, this flexibility in approach is felt to be a

strong point in favour of the naturalistic over the scientific frameworks.

The exploratory stage is followed by an inspection of the system to sharpen the understanding of the interactions taking place within the universe under study. This includes the investigation of how the actual actors perceive their relationships within their world, how for example does legislation really affect them as opposed to how the legislators wished it to affect them. The main thrust of this stage is to try to find out what is really going on from the point of view of the actors rather than trying to interpret what is seen according to a predetermined set of hypotheses.

Bulmer was not alone in his criticism of the scientific approach, similar points were made by Denzin, Glasser, Stauss and others. There is a common point made by all however, which is felt to be central with regard to the study undertaken of the West Midlands Road Transport Industry, namely that the project should try to examine the problem from the point of view of the participants, rather than trying to impose an outside categorization of their activities

Such an approach is not seen as unstructured, the method is simply not rigid. It does not seek to mould the project into predetermined paths. It attempts to develop a methodology which

can accommodate a wide variety of human reactions rather than stereotyped ones.

CHAPTER 19. ONTOLOGICAL ASSUMPTIONS AND THE RESEARCH  
METHODOLOGY.

The crucial question when evaluating whether the scientific or naturalistic paradigm is appropriate to a study centres-in this students opinion, on the apposite ontological assumptions.

Denzin op. cit. states, "*.....I have selected symbolic interactionism as my perspective. This selection is deliberate because in my judgement interactionism best fits the empirical nature of the social world. It would be possible to use another theoretical stance..... but I am convinced that any other approach would lead to significantly different conclusions...*"

It is appropriate therefore to briefly review the ontological structures which can be linked to a naturalistic methodology. Central to this is the conviction that the ontological assumptions made concerning a study area have a direct influence on how the study should be carried out, and the type of conclusions which may be drawn from the data eventually collected.

It is felt that deductive reasoning should be primarily applied where the data collected have meanings to those involved which are quite independent of the situation which they are gathered from, whereas inductive reasoning is more appropriate where such conditions are not assumed and " *makes available a vast realm of*

*problems which cannot even be formulated within the normative paradigm.*"Wilson 1971

Morgan and Smircich 1980 put forward a sixfold classification of ontological assumptions. Their categorization is of course, not universally accepted but can be legitimately used for the purposes of this review.

1. *Reality as a concrete structure*
2. *Reality as a concrete process.*
3. *Reality as a contextual field of information.*
4. *Reality as a symbolic discourse.*
5. *Reality as a social construction.*
6. *Reality as a projection of the human imagination*

The set moves from where reality is seen as a deterministic set of structures where generally accepted measures can be made on bases which have definitive and universal meanings, to where reality is seen as essentially fleeting and is created by imagination, where measures mean what we think they mean. This classification can be viewed as as moving from the pure scientific view of what reality is, to the ultimate naturalistic

stance, holding that reality is transient and has little if any concrete structure.

The adoption of any of these propositions will obviously affect the nature of the epistemological process. If category 1 is accepted then the scientific methodology would be employed. Data would be collected about defined variables and generalizations made to all similar universes. If this were to be adopted for the investigation of the West Midlands Transport Industry then examination of say growth factors, would take place on the basis of selected variables. If it were hypothesised that education and training were major elements here, then some scale of education and training attainment would be drawn up and correlation studies completed to prove relationships. It would be likely that there would be no attempt made to investigate the socially interactive aspects of skill and training. It might be the case for example, that a particular type of manager can approach larger companies more effectively, or can deal with sources of finance in a more efficient manner, or even that some sectors of the industry had developed some practices which warned off individuals with particular attitudes to the law and business practice?

The second real world assumption differs only in degree from the type one ontology. There is still great emphasis on the use of standard statistical methods- without reference to the social context of the activities under examination. The tendency is to seek major one way environmental influences which can be measured

and used as the basis of mathematical forecasts of how other entities would react given the stimulus of the same specific variables

The third category is transitional between the scientific and naturalistic schools. Human actors are seen to be engaged in a continuous act of processing information about their environment. They learn from this and where required change their behaviour patterns on the basis of this new knowledge. There is an attempt to drop the barriers between the subject and the environment, to study the complete situation. This ontology usually deals in simulations. There might be an attempt to draw up a model of a typical transport firm, and by making changes in the factors affecting the industry show how the firm would react.

It is however, within categories 4, 5, 6, that the naturalistic approach to the relationship between ontological assumptions and the epistemology of a project are developed most strongly.

Reality as a symbolic discourse is a term used here to sum up the interactionist perspective favoured by Bulmer, Denzin and others. Denzin 1975 states "*The interactionists conception of human behaviour assumes that behaviour is self directed and observable at two distinct levels-the symbolic and the interactional (or behavioural). By self directed I mean that humans can act toward themselves as they would any other object*" As Bulmer, 1966 says, *the human " may perceive himself, have conceptions of*

*himself, communicate with himself, and act towards himself." This behaviour which Bulmer calls self instruction permits humans to plan and to align their actions with others"*

Denzin goes on to state the social world does not consist of objects which have some intrinsic meaning, but that the meaning of objects is dependent on man's plans and assessments of their meanings. It follows then that the interactionists take the view that since human experience is being constantly modified, meaningful and co-ordinated action can only take place between individuals towards objects when there exists a consensus of meanings regarding those objects.

This is not to imply that the interactionists see the world as in a continuous state of flux as people redefine the objects of their attention. Under such an ontology it is quite normal to see meanings as being stable within an interacting group, and because of this, being possible to attempt to predict the effect of a change in a specific variable. The underlying principle is that it is not the cause and effect which are seen as real but the meanings which have been placed on the reacting objects.

Nor does it mean that such an ontology precludes an organized epistemological framework, the interactionist does not maintain that since humans can change the meanings attached to objects it is not possible to study such interactions. Glasser and Strauss, in the *Discovery of Grounded Theory*, take the view that where



there is a consensus of definitions and meanings, and of reactions to them, then general formal theories can be developed.

As always, it is the interactionist view of the world that is the crucial factor, the adopted ontology affects the method of acquiring knowledge.

## CHAPTER 20. TOWARDS APPLYING A NATURALISTIC ONTOLOGY

The first step for an interactionist when investigating a new area is to become sensitized to the meanings employed in its social interactions, before he attempts operational definitions-although as Denzin, *ibid.* points out,"*ultimately all concepts must be operationalized-must be measured and observed.*"*The sensitizing approach merely delays the point at which operationalization occurs.*"

Take for example, the definition of a good driver.If the scientific investigator was asked to develop such a standard he might draw up a list of factors scoring on such areas as law abiding, observing speed limits and other job performance related measures.The interactionist on the other hand would first try to establish the context of the meaning of good.

If the area under examination was industrial relations in the transport industry , for example,it might be possible that other drivers could consider a good driver the antithesis of the factors already selected. They could consider good in this context to refer to someone who broke speed limits to secure more time off, or who arranged his drops so as to arrive at the busiest period so to gain a nice long wait, or whatever. Denzin *ibid.* says,"*...methods must be constructed so that they contribute to formal theory whilst at the same time permitting sensitizing*

concept analysis, and the discovery of universal interactive propositions."

It must be pointed out that this stage is not the sum of the naturalistic stance. The ethnomethodologists, the school who subscribe to category number 5, hold the interactionist view to be too rationalistic because they feel it pays insufficient attention to the role of emotion. This school would concentrate on how the actors in the area under study develop their view of the world. The main interest is in the actors themselves, rather than a wider interpretation of what is going on within the system being investigated.

Such a viewpoint would lead the researcher into questions such as HOW the drivers arrived at the conclusion that an obvious law breaker was a good lad! In exactly what ways does a newcomer to a firm reconcile the formal organization chart with the real set of relationships he perceives around him? The ethnomethodologist is not so much interested in discovering the rules which the actor employs, but the way humans can presume that there are rules which shape their behaviour. Zimmerman and Vider 1978 insist "*...we are concerned with HOW do people go about seeing, describing and proposing a definition of the situation? HOW do persons make a rule emerge and HOW do they use it?....HOW do persons see and describe social action as stable?*"

This is a perfectly good ontological viewpoint for specific problems , but it is felt that it is most appropriate for topics concerned with individuals in organizations developing rules rather than industry wide studies. It is felt that such an ontology is not suitable for an investigation into the road transport industry which is concerned with empirical information about growth factors

This trend is perhaps, seen in extreme form in category 6, where reality is seen as a projection of the human imagination. The experience is the same as the object being experienced; the human actor can only perceive the world through his experiences of it. An investigation from this stance would be based on the intellectualising of variations on experiences or the actual participation in the universe under study. The purpose being to try and feel how the actors feel

There are roles where this is appropriate ontology but in an investigation of the structure of an industry and movements within it, other ontological frameworks are considered more apposite.

Underlying this review of ontologies there has been a central question; must the researcher make a choice between approaches and follow that decision through to the conclusion of the project? Is it the case that the scientific and naturalistic stances are mutually exclusive? In answering this the student must decide if he

believes that any one of the various ontological positions CAN really provide THE answer of how best to study the real world. This will depend on his personal view of the area selected for examination coupled with the particular aspect he has decided upon as the focus of the study. It must also be said that the collection of any data depends ultimately on communication between the actors in the system and the observer.

In cases where the study is concerned with physical attributes then a consensus of key meanings can usually be achieved. If the project is concerned with say the effects of coastal currents on the movements of sandbanks then the student can concentrate on the methods of the study as the subject and how they can be measured fall within a framework of physical parameters. The variables isolated as important and their investigation are not likely to be biased by the student's presence.

If on the other hand the area under investigation concerned the effect of the sandbanks on marine life, then a human intrusion might significantly alter life patterns. Data collection methods would then have to be selected on a basis of disturbing the environment as little as possible. It is likely however, that no matter the lengths gone to to keep disturbance as minimal as possible, the mere physical presence of a human changes the real environment

It might be said then that even under the scientific protocol, when some form of interaction exists between the subject and the researcher, then the real world is disturbed.

Where human actors are involved then not only is the physical presence a problem, but is wholly effective communication possible anyway? A case can be made that no matter what attempts are made at sensitising the research approach to the system under study, total communication is not possible. Only if the sum of experience of the observer and the observed are identical will their exchanged information suffer no leakage. There may also be historical and power relationships which cannot in fact be either communicated or observed. In short, no approach will provide total understanding of what is going on.

This viewpoint was raised by Wilmot 1983, in the exchange which was quoted as the basis of this review of ontological influences on research methods. If this is held to be true, then the researcher is led into a cul de sac. If he holds that he can never FULLY understand a situation which involves the investigation of human interactions and the environment within which they take place, then it would follow that all results are flawed; indeed not only could they not be used to generalise from a specific situation to the general, the whole process of research investigation would be pointless. The only way to study a social phenomena would be to live the situation himself. This however, is merely a change in the viewpoint of the observer. The student who

undertook such a project would not, could not, experience the full ramifications of the universe under review since he would always be aware that he will eventually leave the system and hence would not suffer the full implications of any actions undertaken or rejected. He could ultimately feel "there have been worse disasters at sea" and exit the scene.

Even if the study were initiated in such a way that the researcher set up his own firm and participated in the road transport industry, then the fact that he was to analyse his actions in a way that would produce meaningful data would in itself affect the decisions that were made. In the last resort all philosophical approaches must be seen as having some limitations, the solution might be to acknowledge that the watertight assumptions of a rigid one to one relationship between ontologies and epistemologies is essentially an ideal formulation, which must be adapted to the real limitations of actual field work. To accept that at least for some research tasks more than one ontology may be effective might be the way forward.

This is not to postulate that ontological assumptions should be jettisoned if they seem to be inappropriate at any stage of an investigation, but to take the standpoint that hybrid methodologies and epistemologies may be feasible. At the start of an investigation some assumptions must be made of the relevant ontology, but subsequent investigations may show that the original decision needs variation. Such adaptation however, is surely

justified only when the study itself shows that the original ideals were incorrect. Changing horses should be dependent on perceived weaknesses in the approach which can be remedied by changes which are triggered by factors in the area studied.



## CHAPTER 21. ONTOLOGY AND METHODOLOGY ADOPTED

The general plan of attack for this particular project has been discussed elsewhere, it is the intention to deal here in more detail with the field work aspect of the study.

In this phase of the scheme there was a strong bias towards the interactionist school of thought-not to the exclusion of other approaches but as the central thrust of attack. This protocol was inevitably blurred at the edges but it is felt that it was most apposite as the central strategic core.

This stance infers that the naturalistic view of investigation was adopted. This was the case for the very reasons which have already been examined. The transport industry and movements within it, are seen as being essentially socially interactive in nature. It may be possible to apply a scientific approach to some aspects of the industry, such as fleet size, but even here degrees of meanings concerning what size implies abound. It was held that the central area of interest, namely the means whereby growth can be achieved was not suitable to the application of straightforward scientific type measurements. This is compounded by the fact that strict control of the subject area in laboratory style conditions was obviously out of the question, as was the manipulation of any identifiable key variables. The key to gathering insight in the

essential area had to centre around the recounting of past acts by the actors in the field.

The essence of the field work was then a series of interviews with managers active in the road transport industry. These started with a number of sensitizing encounters with firms in the local Coventry area. As discussed in greater detail later, the aim of this stage was to try and establish what exactly operators in the industry considered the best measures of size and growth. It was also intended to try to establish the general areas within which growth producing factors were to be found as perceived by transport managers, as opposed to outside observers. This sensitizing stage was followed by the full scale industry investigation as justified below.

#### THE NATURE OF THE INTERVIEW.

A workmanlike definition of an interview was given by Macoby and Macoby 1954, as *"a face to face verbal exchange in which one person, the interviewer, attempts to elicit information or expressions of opinions or belief from another person or persons"*. This apparently straightforward process is needless to say complicated by the ontological standpoint adopted. If the scientific protocol is in effective operation then there will be little or no room for confusion, if on the other hand the study is one where the interactionist sector of the naturalistic approach is appropriate some complications may arise. This would imply that

given the problem of consensus on meanings and interpretations then a simple straightforward interview is indeed a rare occurrence!

The underlying problems in eliciting accurate information from interviews were highlighted by Lazerfeldt 1954 when he postulated that there should be three major principles guiding the structuring and carrying out of studies based on interviews. In the first instance any questions raised should fit the experience of those undergoing the interview. The interactionist would see here the point that it is the meaning of the question which is important not the form of the wording of it. It is possible that individuals, because of differing experiences, might place very disparate meanings to identical words or phrases. The perception of the interviewer and the interviewee might very well be divergent even on quite common phrases. Take for example the word profit.

An interviewer asking a question concerning the profitability of a public utility, such as an underground railway system could quite conceivably receive the same positive response from an official of the Moscow and Paris Metros. The implications and the cost information involved in the criteria "profit" would however, be very different in the mind of each official.

In the framework of the interactionist it is essential before the start of the major body of the study to embark on the sensitizing phase. This would help to ensure that the nature of the final

interviews is such that meaningful interchanges of information can take place

The second element in Lazerfeldts scheme is the need to establish meaning. This particular point conflicts to some extent with conventional ideas about how an interview should be conducted. By general consensus non interactionists tend to maintain that the interviewer should take a passive role in the interchange. He should not actively participate in discourse with the interviewee as this might introduce bias into the responses. The general desire for a lack of bias is also subscribed to by the interactionists, but the school puts forward the point that the way to ensure accurate agreed meaning is to avoid static or passive questioning. Lazarfeldt suggests that the interviewer should probe the interviewee to remove, as far as possible, confused or blurred interpretation of concepts. The student subscribes to this stance wholeheartedly. It is felt that it is more than possible to discuss the meaning of an idea by sensitive positive enquiries without detracting from the respondents perception of meanings.

Thirdly, care must be exercised on questions relating to areas of social desirability. Respondents may not be willing to commit themselves to questions which might imply they have participated in actions which might be considered anti social. These of course might very well be the actions which the interviewer is interested in. In the context of the road transport industry the sensitizing

phase indicated that a significant number of the smaller hauliers were involved in quite widespread breaking of some transport laws. It was obvious that such questions had relevance to the state of competition in some areas, notably in the construction industry. It was felt that a direct question on these activities would elicit negative responses. It was decided that the best way around this problem was to raise the question by asking individual managers if they were aware of the problem, and then asking them the practices which their **COMPETITORS INDULGED IN**. This approach it was held would obtain the information, but allow the managers under interview to expand on the topic without attracting to themselves any opprobrium. As can be seen in the section dealing with the actual conduct of the research this was a very effective tactic.

## CHAPTER 2.2 PROBLEMS IN CONDUCTING THE INTERVIEW

Lazerfeldts approach was adopted in selecting the nature of the interviews which should be administered. It was also necessary to decide the actual form which the interviews should take.

It is generally accepted that there are three main types of interview structures

The standardised scheduled interview (SSI)

The unstructured scheduled interview (USI)

The unstructured interview (UI)

Each of these types have particular advantages and of course problems when applied to specific research situations. Given that the basic standpoint of this particular project is interactionist, then these attributes must be examined from that position.

Given that the respondents and the interviewer are frequently from different backgrounds and "work culture" settings then the possibility of common words or phrases having different meanings is quite usual. A SSI type of interview makes it extremely difficult to try and probe the real meaning of words or phrases used and

for this reason, among others, was rejected as the format for this study. The USI form is more flexible for this purpose and indeed the UI even more so.

All interviewers must motivate the respondent to participate in the process of interaction, a SSI form makes this more onerous. On the other hand the USI and the UI design allow the interviewer some flexibility in rephrasing questions in such a way as to catch and hold the interest of the subject.

The SSI has one major advantage that is clarity of intent is clearly laid down. The process of deciding the objective of the questions should ensure that their purpose is clear to the interviewer. There will be a set of predetermined key words and phrases to be employed. The USI and UI types however, may allow untrained questioners to realign the core thrust of the questions. This problem was not of importance in this particular project since no outside personnel were involved, the questions were drawn up and administered by the same individual.

The final crucial point in favour of the format eventually adopted was that of the respondents smoke screen. Under a SSI form the interviewer cannot challenge or probe particular statements from the respondent. In the USI and UI format a facility exists for asking supplementary questions which can elaborate on any particular response.

The choice of style then lay between the unstructured scheduled interview and the unstructured format. The totally unstructured form was rejected for the reasons summarised by Denzin 1975 when he said "*with it the investigator is continually acting towards his object (i.e. the respondent and his subject matter). He can make no clear distinction between the formulation of the interview and its administration, the interviewing ceases only when all the information needed to test and/or verify hypotheses has been gathered.*"

On the other hand with the USI the social act of the interview .."*breaks into three quite clearly discernible phases. In phase one, the researchers formulate and pretest questions; in phase two the questions are administered; in phase three the act terminates when all the persons selected in the sampling design have been interviewed.*" Since the project had very definable limits then it was obvious that the unstructured schedule form was the best choice. In final justification of the selection of the unstructured schedule interview a last quote from Lazarsfeldt "*a structured interview because of its rigidity will hardly be as good as an unstructured interview under its best conditions but hardly lets us down as much as the unstructured interview sometimes does.*"

This is both a clinching phrase and a warning. The warning element being well expressed by Denzin 1975 "*In the hands of a skilled interviewer, the USI and UI can hardly be surpassed . In the hands of the unskilled ,they can be disastrous.....so there is*



no hard and fast rule. The issue resolves largely into the personal preferences of the investigator, the intent of the investigation, the available resources, and the investigator's decision concerning what type of interaction he desires." All of these latter conditions predispose the student to the unstructured schedule format for the interviews required for this project. It must be stated however, that the student perceives no objection to the concept that it is possible to combine some of the essential elements of more than one interview structure in a specific interview format

## CHAPTER 23. SELECTION OF DATA COLLECTION AND ANALYSIS METHODS

As has been discussed above, the core difference between naturalistic and scientific approaches does not centre on whether it is possible or not to gather and analyse data. It is concerned with the nature of these processes.

It was therefore decided that the basic scales employed in the interviews should be centred around the Lickert 5 point module. That is a series of statements were to be put to managers and their responses would be marked on a level running from 5; strongly agree, through agree, undecided, disagree and strongly disagree which would be scored as 1.

As mentioned above, to minimize interpretation problems all questions were administered face to face to allow full scope to deal with Lazerfeldts guidelines for interviews.

### PRINCIPAL METHODS OF ANALYSIS.

There are of course, a wide range of analytical techniques which can be applied to a set of data for the purposes of extracting core information. The whole objective of this discussion has been to put forward the view that the selection of such methods depends not only on the inherent mathematical value of the process itself but also on the quality and reliability of the data

which are being analysed. These in turn depend very much on the nature of the phenomena being studied, and the researchers perception of how this universe can be interpreted. The final decision taken for this project was to employ Factor Analysis leading to a Cluster Analysis of the results.

It is obvious that this decision has to be justified.

### **FACTOR ANALYSIS**

As has been already discussed the train of thought which leads to conclusions under the scientific protocol is fairly well defined, once however human action and interaction is introduced to the situation, it becomes much more difficult to control and hence analyse and predict what is going on. Indeed some observers of the human scene still maintain that we have not yet progressed much beyond the descriptive stage.

The rigorous understanding of human activity may be difficult, but some attempt at its accurate description and at least tentative analysis must be seen as legitimate academic endeavour. A basic difficulty here is the reality that isomorphism is seldom encountered in studies concerned with socially interactive situations. That is to say it is unusual to encounter social problems where there exists a simple one to one causal relationship. It is much more common to find that there is a series of related causal variables.

It could therefore be held that it is good academic activity to try to investigate any possible underlying patterns among these variables which might apply to characteristics of the **type** of firm which the researcher wishes to learn more about.

Working on the assumption that many practising managers would not be able to relate accurately to scales of activity produced from a detached scientific viewpoint, and that anyway, their perception of what was actually going on would not be subject to the normal scientific measurement criteria, some technique was sought which would allow the use of Lazerfeldts approach, yet provide a basis for further meaningful investigation. Factor Analysis-in its Principal Component form was seen as the answer.

The general factor analysis family of approaches can be used in both an inductive and a deductive framework. Goddard and Kirby 1976, point out however that, "*usually factor analysis is regarded as a classical inductive method.....Used in this way it is a very powerful descriptive device.*" Principal Components Analysis is basically a data transformation procedure. A set of data is assembled appertaining to the universe under examination. This data will normally consist of scores of some description which attempt to measure the variables which have been selected as of prime importance for the activity under study. The first step is to try to eliminate redundancies in the original data by trying to summarize the variation in this set in terms of a smaller set of variables or factors which are a combination of the original

variables. There is an attempt to combine many of the detailed characteristics of a number of firms so that some multivariate scale can be determined against which individual firms may be measured.

The application of Factor Analysis to the core element of the project was not adopted without due regard to the many objections which might be raised to the technique. Child 1980 quotes McNemar 1951, as saying that factor analysts suffer from the struggle syndrome, " *when interpreting factors all factorists struggle and struggle and struggle trying to fit the factors into their initial hypotheses.*"

This could be considered an extreme view, but nonetheless there is a degree of truth in the stance. It is possible to indulge in statistical dredging, that is to seek some answer simply by applying as much statistical manipulation to a set of data as one can, hoping that some relevant conclusion may emerge. The greatest safety net here is to bear the problem in mind and limit the application of technique to reasonable levels.

A more potent objection is to read too much into a correlation coefficient thrown up by the analysis, since causal relationships cannot be inferred by correlations alone. Factors are derived from correlations and hence some form of additional validation must be employed, or at least conclusions from them must be treated with extreme care. It must also be remembered that

central to the whole development of the approach employed in the project was the belief that measurement of human behaviour is fraught with danger.

On the other hand as Child 1980 points out, "Whatever else we claim for factor analysis, it certainly enables us to describe a group. Starting with a mass of tests which show correlations we can end up with a few factors or dimensions. The factors are often taken as descriptive of the group."

Since the objective of the study was to describe those characteristics of a transport firm which seemed to be associated with either positive or negative growth, then it was felt that the use of Factor Analysis would produce reasonable results. Thus when a correlation exists, irrespective of the explanation offered for it, it can at least be said that an attribute of the company or its management is related to an attribute of growth. Multivariate Analysis has an additional attraction where the researcher is dealing with human interactions and their environment. It allows a very wide range of what might be called non specific measures to be based on how the actors perceive their world and their relationship to it. A wide set of measurements can be presented to an active manager and the question can be put, "To what extent does this apply to your company or to your competitors?" A score can be obtained showing how the actors conceive of particular elements affecting them, it is to these scores that the actual Factor Analysis procedure is applied. We might be interested in for

example the role of costing in a special class of transport firm, we could start a particular section of questions by presenting the manager with a statement such as "Full vehicle costing is seen as essential as a first step in pricing job tasks" We could then ask the manager to what extent he would feel that this was a position taken by his department and score on the type of scale discussed above.

This approach allows the researcher to make some measure of a manager's attitude towards those factors which the researcher has identified as apparently important in some way for the elements the study is examining. This study then used the scores extracted from a Factor Analysis scheme as input for a Cluster Analysis scan to try to identify those factors which were associated with particular growth types.

It is held however, that a brief justification and explanation of the application of Cluster Analysis is apposite at this stage.

The purpose of the first stage of the field work study was to identify through the use of Factor Analysis an organised description of those elements which appeared to affect the growth prospects of individual transport companies. The subsequent use of Cluster Analysis was to attempt to classify firms on the basis of groups or clusters, which had certain characteristics in common. Thus identifying growth firms as those grouping around scores on particular factors, declining firms around other factors and so

on. The ultimate objective being the ability to summarise those practices and policies which are associated with success or otherwise in the West Midlands Road Transport Industry.

## CLUSTER ANALYSIS

Everitt 1974 states that the objective of Cluster Analysis is to solve the problem that "*Given a sample of objects or individuals, each of which is measured on each of a number of variables, devise a classification scheme for grouping the objects into a number of classes.*" The number of classes to be determined by the researcher.

The end result of a Cluster Analysis routine will be the production of a number of groups, types or classes which will have certain elements in common - at least to a known degree of error.

Ball 1971 lists seven applications of Cluster Analysis

*Finding a true typology.*

*Model fitting.*

*Prediction based on groups.*

*Hypothesis testing.*

*Data exploration.*



*Hypothesis generating.*

*Data reduction.*

It is obvious from the discussion which has gone before that this study is most interested in the fourth and fifth applications of Cluster Analysis, but as always not to the exclusion of the other uses of the technique, especially the ability to generate hypotheses.

There are a wide variety of Cluster Analysis methods available, the initial choice selected for use in this study is known as Wards Method, this approach is one of the hierarchical methods. Such techniques may be subdivided into two broad categories; "*agglomerative methods which proceed by successive fusions of the number of entities into groups , and divisive methods which attempt to partition a number of entities into successively finer partitions*" Everitt 1974.

All agglomerative methods-of which Wards is one, begin with a measure which represents the similarity of the entities on a two scale matrix. In our case the Factor Analysis score and the growth element, they then proceed to merge groups on the basis of the most common Euclidian distance on the matrix. The final result is a *dendogram* showing the successive fusions of individuals. The ultimate result would of course, be the production of a group which contained all entities. The method allows the suspension of the

combination process at various levels of similarity , in this way allowing the effective classification of firms or entities into groups with common attributes within known boundaries of error.

Given the objectives of this study it is obvious that techniques intended to provide ever finer groupings of enterprises,i.e. the divisive approaches are not desirable for this project.

In Wards Method, at each step of the process every pair of clusters is considered and the two clusters whose fusion results in the minimum increase in the error of the distance measure are selected for combination. This approach has been used recently to investigate similar groupings of firms on the basis of their marketing strategy approaches. Doyle and Saunders 1985.

#### **SUMMARY OF GENERAL APPROACH.**

It is possible to summarise the general approach strategy which was eventually adopted in the following manner;

As a result of the importance of the human element in the road transport industry, it was held that the pure scientific approach was inappropriate for this sector, or at least was unlikely to be capable of fully accommodating the full range of human attitudes to be investigated. As a result a naturalistic ontology, biased towards the interactionist stance was seen as likely to be the most effective in the given conditions, -albeit tempered by the

belief that field circumstances might very well result in a pure protocol becoming perforce, blurred at the edges. This resulted in the belief that detached absolute measures of how and why enterprises had particular growth patterns were ineffective, and required a method which was capable of handling a wide range of varying levels of measurements.

This resulted in the conclusion that some form of multivariate analysis was likely to be the most productive. As a result of a wide ranging survey of the techniques available, Principal Component Analysis was seen as likely to be the best choice here. To attempt to group such enterprises into clusters with factors in common, it was decided that one or more of the Cluster Analysis methods would be applied to the results of the Principal Components Analysis. A wide range of such programmes is available, Wards Method of analysis, however, had been effectively applied in other studies. It was therefore decided to apply this approach, but for the sake of being exhaustive to also run the suite of alternative techniques which were available.

To ensure that the student and the respondent did not fall into the many traps present in the standard interview approach—especially those identified by Lazerfeldt, the Unstructured Scheduled Interview was adopted. The student administered all interviews to reduce interpretation problems to a minimum.

## Division Two

This section reviews the actual field work undertaken in the course of the project. Its purpose is to:-

Describe the sensitising study.

Discuss the reasoning behind the questionnaire developed.

To analyse the results of the survey

To explain the conclusions reached.

## CHAPTER 24. THE SENSITIZING STUDY.

A major component of the pre-field work stage of the project was the sensitizing study. As discussed in the Chapter on Research Methodology, it was felt that before any attempt was made to carry out an in depth investigation of the road transport sector, a sensitizing phase was essential. This was to ensure that the researcher could firm up the initial attitudes towards the eventual subject of the project. The aims of this stage were two fold. In the first instance to increase the basic familiarity with the sector, and secondly, to obtain any available a priori evidence concerning those aspects of the industry which were likely to form the core target of the subsequent fieldwork.

### FAMILIARITY

Experience over some twenty years of contact with the road transport industry at large tended to result in the opinion that to investigate the industry in depth would be difficult. This was based on the impression that the industry was highly fragmented, consisted of large numbers of small firms, and overall produced a very secretive, aggressive management who tended to resent any outside interest in their industry. In addition, past experience and a great deal of the literature suggested that the level of management expertise to be encountered would be very low, and as a result could be unsympathetic to attempts to analyse their actions

within an alien "academic" framework. In the event, although remnants of these attitudes and individuals still could be found in the industry, it became very clear that even at the time the sensitizing study was undertaken (Summer 1982) that such pre-conceived ideas concerning the industry would have to be substantially reviewed.

After the first visit discussed below, the usefulness of a familiarization phase became very obvious. Unless there is day to day contact with the research area, any increase in dynamism, any new approaches, indeed any new trends tend to pass un-noticed. If these movements take place at a very time concentrated, high pace rate, then unless they reach the general literature, knowledge outside the industry remains a "snapshot" of past experience. As was eventually discovered this was in fact the situation within the road transport industry.

It should be noted that the sensitizing study is not intended to be a data collection exercise. The intention is to bring up to date the impressions of an industry, or in the case where there has been no previous contact, to establish an overall view of what appears to be "going on" within the sector in question. Therefore the primary aim of the familiarization stage is to produce a clear understanding of the sub culture if any, within the area of interest, to ascertain any job specific jargon, to gain an appreciation of the sub sectors of the industry if they exist, to gain in other words a "feeling" for the general area of interest.

## OBTAINING INFORMATION.

When the above, albeit brief, discussion of the core objective of a sensitizing study is borne in mind it will be appreciated that a key word in the approach to this stage must be informality. To be sure, the aim of the exercise is to obtain information, but it is not necessary, at least at this stage, to approach firms with a rigorously structured questionnaire. The information which is sought is of a general nature, which is likely to throw up new broad insights, or point to an unexpected change, or an unforeseen acceleration of trends with which the investigator was already aware.

Categories of interest would therefore include such headings as the state of competition, the level of activity within the market, innovations which were in place or rumoured to be being developed, individual manager's estimates of future trends and so on. These types of information might be termed as arising from "hard sources" in as much as the researcher could approach actual firms and or organizations and in the course of conversation elicit some fairly definite views concerning these possibilities. Such areas are not the only, or indeed the most important sources of interest.

It is possible also to call on "soft sources" to help in forming an overall impression of the research area. These might very much involve personal interpretations of what is observed going on and what is hidden within the statements made by the actors in the

field of study. A small operator might for example indicate that the reason he is leaving the industry is because it is in his view, "played out in this area." The situation could also be interpreted as resulting from the fact that he has been too inflexible in his approach, has had a symbiotic relationship with a declining sector and cannot change to meet new challenges in his market area. This could lead to further investigation into the degree of competition managers perceive in their market, the extent to which they monitor their customers, and the level of response to change.

It is essential therefore, that the information gathered at the sensitizing stage cover more than one type of activity and also ranges over a variety of different management structures. At the same time, it must always be borne in mind that this is not the major field work investigation, and limits must be placed on the breadth and depth of this initial contact with the industry.

#### **APPROACH ADOPTED**

Bearing in mind the factors discussed above, it was decided that the actual sensitizing study should adopt a two pronged approach. On the one hand individual hauliers and transport managers would be invited to pass comment on a wide range of topics considered to be of broad general import for the industry, and at the same time they would be pressed to develop what they themselves considered to be specific areas of influence on the growth strategies of transport organizations.



It was considered essential that an informal atmosphere pervaded these initial contacts, and consequently no set agenda was proposed, nor were any notes taken live at the meetings. Any relevant areas were written up after a meeting, and prior to a discussion a short list of important topic areas was prepared and memorised so that if necessary, any conversations could be directed towards specific topics of interest. The absence of notes and lists worked well since not one individual refused to discuss his area of activity, although of course, some reticence did occur occasionally, especially with smaller firms when legislation and/or finance was mentioned.

It was considered that this loose structure whilst being very suitable for face to face contact in totally informal circumstances required a back up format. This was perceived as very important once the broad general areas had been aired and it became necessary to firm up those points which appeared to be of the greatest interest.

This second stage was dealt with by visiting a small number of firms within both the Coventry area and slightly more afield in the West Midlands Metropolitan Region. In the course of those visits it was believed that although it was still desirable to maintain an informal atmosphere, the fact that work time was being consumed by the transport managers visited, a more formal structure was likely to be expected by the respondents. A fairly non rigorous format was developed therefore which allowed the researcher to probe areas already raised in the more informal stage, and at the same time cue

operating personnel for more in depth discussion of major areas of interest. This particular format is explained below, when the results of this stage are reviewed.

There was no formalised attempt to select representative firms for these visits, organizations were visited on the basis of recommendation from individuals and from tentative proto hypotheses prompted by the initial discussions with managers active within the industry.

The firms selected included two small Coventry concerns active within the engineering and general haulage sectors. C. Doran Transport and J. Conway Transport. The larger firms selected were Wilkinson Transport Nuneaton and Wincanton Transport Services Wolverhampton. Contact was also made with a variety of other organizations such as Crowfoot Carriers, ARC Pre-mixed Concrete and Caples Transport also of Coventry. For reasons of confidentiality specific linkage of these firms with certain aspects of the operations reviewed will not be made.

#### **FIRM A.**

The activity in the construction sector proved to be most interesting. The firm in question operated 3 vehicles all heavy goods vehicles and all tippers. The main interest of the company was with sub contractors on the construction side of the civil engineering industry, and the principal activity employing the

vehicles was the movement of spoil. They were also occasionally engaged in other related operations such as the movement of aggregates.

It is emphasised that all operators for hire or reward must hold a Standard National Operators Licence for any vehicles over 3.5 tonnes. As part of the conditions laid down for the award of such a licence a full time named employee must hold a Certificate Of Competence In Road Transport Operations. Although some hauliers could claim this CPC on the ground of experience, examinations were introduced so that virtually all new transport managers were required to take such exams after January 1980. These examinations, although hardly formidable did present a problem for some of the smaller operators.

This is an important point with regard to the perceptions of firm A. Over a period of time the owner had developed a close working relationship with a particular sub-contractor. This firm employed upwards of 80 men which for that particular sector represented a medium sized organization. The firm was engaged primarily in pipe laying and hard rock tunnelling schemes. In other words, areas where large amounts of spoil were produced and where the services of HGV tippers were in demand.

The sub-contractor had grown over a period of years, and Firm A had become more and more specialised in dealing with his business. Firm

A frequently used the sub-contractors sites for storage and maintenance of his vehicles for example.

Firm A failed to obtain a CPC. A series of options then faced him, he could follow what was later revealed as a well trodden path in that sector, and ensure his wife stayed at home studied and passed the examination and then became a "books only" full time transport manager, or he could employ someone who already possessed a CPC, (although Firm A believed this was too expensive) or he could use another ploy which was claimed as common, that is pay a "fee " to a CPC holder who would claim to be a full time employee for purposes of obtaining an "O" Licence. Such individuals allegedly made a living by performing this service for a large number of Firm A type organizations, or finally Firm A could go out of business.

In fact none of these paths was followed. The sub contracting sector of the construction industry is notorious for "fly by night" organizations. The particular sub-contractor Firm A was dealing with had established a formidable reputation for getting the project completed on time and within cost. As part of maintaining this reputation it was necessary for him to employ a reliable transport operator who had access to sites for the disposal of spoil or who had other means of dealing with it. This particular sector of the transport industry also has a very poor public image. Most casual enquires concerning "cowboy" firms will meet with the response that they are very common in the construction sector. Firm A was perceived as not being in that category and as having a good

relationship with his main customer. The solution suggested by the sub-contractor was novel and of great interest.

A Standard "O" License is required only for hire or reward operations. A Restricted "O" Licence which allows the holder to carry his own goods anywhere is obtained far more easily, and most especially does not require the employment of a full time CPC holder.

Firm A operations became as follows. The sub-contractor sold his spoil (a marketable product anyway) to Firm A. The spoil then became the property of Firm A and could be carried on his own vehicles under a Restricted Licence anywhere in the United Kingdom. Where the sub-contractor had an agreement with the principal contractor or an agent, for example, at a land fill site, Firm A sold the spoil back to the sub-contractor at the point of disposal and then proceeded with the backfill.

All dealings were for nominal sums only, and of course were solely paper transactions anyway.

Conversations with Firm A proved to be extremely interesting. The owner did not perceive of the above arrangement as being illegal which strictly speaking it was not, but when pressed for further examples of law breaking within the sector was very forthcoming- at least in respect of competitors since" he himself did not break the law".

The nature of this relationship was considered to be of some importance, even although at this stage the extent of such relationships within the construction sector and other segments was unknown. It was patently a very close relationship. The degree of freedom enjoyed by Firm A to pursue any selected growth policy was severely curtailed by the closeness of his dealings with the sub-contractor. Firm A was in effect tied into the growth fortunes of his chief customer. The nature of the market within which the sub-contractor was engaged was very different in its growth parameters from the transport industry at large which an independent haulier would have to deal with. In the same manner his pricing policy would be even more constrained than normal. Not only was he tied into the sub-contractor, he was totally dependent on the sub-contractors negotiating ability with main contractors. Likewise the composition of his fleet was very much dictated by the needs of his main customer, and departure would bring pressure from that quarter. If Firm A tried to diversify then he would have to risk purchasing new vehicles without a CPC, the wrath of the sub-contractor, or simply add further spoil business- which meant dealing with other sub-contractors and perhaps bringing further demands from his principal.

If such close relationships could be seen in other sectors then their implications for the degree of freedom of action of the operators concerned were obvious. The bringing together of a coherent strategy of growth would at the very least be extremely difficult, and it would not be impossible to envisage hauliers being

tied into particular size limits and growth horizons-laid down not by themselves but by their chief customers.

A variety of other interesting practices were also mentioned as being common in this sector, ranging from employing drivers already drawing "dole money" to very sophisticated tax frauds involving evading excise duty on fuel and licences.

#### **FIRM B**

This was a more sophisticated operation. The proprietor of this organization held a CPC through grandfather rights, and although he had originally commenced business in the construction sector was rapidly trying to move out of that area.

Firm B was initially engaged in the movement of aggregates required for the production of on site concrete for major construction projects. The firm had built up good relationships with a number of main contractors engaged in a variety of construction projects but chiefly motorway and related peripheral schemes. The financial rewards were perceived as being attractive, and Firm B was anxious to maintain these relationships even when the main points of activity began to move away from his immediate area. He indicated that all information he had received from the operations managers of his customers seemed to reflect very favourably on his performance and level of service. He felt therefore that he had found a market niche where he could make a good living from his

transport activities. When it was suggested to him that he appeared to be becoming over reliant on a small number of very powerful customers, the reply was that such large scale customers made a wide range of activities available.

On deeper probing it emerged that Firm B had no real appreciation of the break down of vehicle operating costs into fixed or variable elements, did not display any familiarity with the most elementary costing concepts, and appeared to believe that as long as his variable costs were covered and a "little on top" then the future held only promise. Firm B also displayed little investigative effort into the nature of the market he was slowly becoming specialised in.

It was and is, in many ways a peculiar one. The concrete which is mixed on site has a much higher value than its constituent parts. The majority of these have low value/volume ratios and are not capable of bearing high transport costs to their point of use. There is also a geographical dimension to the problems Firm B eventually faced. Sand and gravel deposits in the United Kingdom follow a very rough North South distribution (because of the glacial outwash which laid them down) this also coincides with the main thrust of motorway construction at the time of the sensitizing study.

As the main contractor moves from a particular location he might very well wish to maintain the services of an operator as apparently as effective as Firm B. At the same time as the main centre of activity moves away Firm B would begin to face higher and



higher indirect costs. These would include higher wage payments for his drivers, overnight expenses for vehicles and drivers, and of course lower utilization of his vehicles as a result of longer journeys. Concurrently the main contractor would be moving closer to the orbit of other suppliers of aggregate and other local hauliers in the new area not faced with the problems which B was encountering. These difficulties gradually made themselves obvious to Firm B and attempts were made to diversify. The situation nevertheless raised important areas which were eventually to play a part in the design of the final questionnaire.

To what extent was it likely that successful firms employed a much more aggressive marketing and product knowledge than did Firm B? To what degree was it necessary to target specific customer and market sectors? There also appeared to be a need for much clearer understanding of vehicle costs and business objectives. The sensitizing stage did not claim to even begin to answer these questions, merely to identify them as perhaps important for the core field work .

#### **WILKINSONS**

A visit was made to this firm on the recommendation of several contacts within the industry who identified it as one of the cutting edge firms within the West Midlands transport sector. In the course of a number of visits the firm was subject to a number of mergers, becoming Lex Wilkinson and eventually Federal Express. It is not the

purpose here to discuss these organizational changes, but they were taken to be indicative of the increased levels of activity which gradually emerged in the industry in the course of the 1980s.

This particular firm was a large scale operator. At the time of initial contact the fleet contained approximately 500 vehicles, making it one of the largest private fleets in the area. At this period, 1982-3, the vast majority of this fleet consisted of vans as the business was mainly interested in the parcels delivery sector. The most important information gathered from the discussions held with this organization was the extent to which their particular sector was on the brink of substantial re-organization.

The construction sector, and the smaller general hauliers who had formed the original part of the sensitizing phase, had appeared to be rather conservative in their approach to their business. This was especially so on the management of growth prospects for the firm. Indeed it is not unfair to say that the majority of managers approached in the initial stages had not really thought out a coherent approach to the question of future growth, and were overwhelmingly interested in the day to day operations of their firm rather than future plans.

This state of affairs was not uncommon for many sectors of British Industry at that time. As Doyle 1982 op.cit. pointed out, many British Managers appeared to REACT to developments in their sectors rather than ACT to introduce them.

It must in fairness be admitted that this was also to some degree the case with Wilkinson. The impression of innovation was at first very strong, it soon became obvious in the course of conversations, that a great deal of this activity was in response to the proposed "next day" parcels service which the new arrival from Australia, TNT were proposing to introduce. Even so, the company did not simply await the arrival of the "Antipodean" but set about organizing its own version of modern parcel operations. This was interestingly, backed up by the employment of academic consultants to appraise the viability of "Hub" operations based systems.

The management of the Firm A and Firm B organizations showed initiative and drive. The management of Wilkinsons whilst certainly displaying these qualities also, in addition projected an impression of much more sophisticated market research, of identification of desired target market segments, of specific types of traffic being targeted, in other words exuded a more modern management approach to the industry

In terms of future research activity it rapidly emerged that the stereotype transport manager of the late 1970s was being replaced in some sectors at least, by a much more professional individual. At the same time, it also became apparent that some sectors of the industry were beginning to experience important changes in the level of service which their customers were demanding. This was made obvious at Wilkinsons as the move to market segmentation by time of delivery proceeded over a series of visits.

Such increases in performance targets inevitably pulled through higher levels of demands on the expertise of managers. As the volume of traffic increased it became necessary, even in the early stages, to plan for more effective handling of information. The volume of information, and the need to process it accurately and above all speedily, resulted in the firm assessing its needs for Information Technology very thoroughly indeed. The enthusiasm for IT within the road transport industry was for the researcher at least, a new phenomenon and held obvious implications for investment levels. Any increases in that area would have "knock-on" effects on management quality and "technological pull" influences on general levels of management expertise.

#### **WINCANTON**

Over the period of the initial visits it became obvious that a contrast existed between the nature of the firms visited, to redress the balance somewhat it was decided that a visit to what was seen as a more conventional, medium to large sized haulage company was required.

Casual but directed conversations within the industry resulted in a visit to Wincanton Transport Ltd. in Wolverhampton, a subsidiary of Unigate PLC. The original intention was to visit a main stream haulage organization and assess the developments which could be observed-albeit informally.

Whilst this firm certainly was carrying on a degree of what might be called standard road haulage business, several trends were observed which held import for the direction of the industry as a whole.

The first of these was the move towards greater participation in the contract hire sector. This sector was identified by the operator as a future growth area and one which they intended to expand their interests within. The main thrust was apparently to be in dedicated vehicles, that is to say providing vehicles, usually with a driver, to carry out a specific job task for outside customers. This was a departure from the usual transport situation where the firm would tender for a particular contract from the customer, rather than providing vehicles for the customer to operate to their own individual patterns. The potential extent of this sector was not apparent at the time of the sensitizing study, but it clearly carried implications for the traditional methods of hauliers doing business, implying a much closer relationship with the customers requirements than was the usual case in the past. The traditional view was that the haulier simply moved the goods, with very little contact with the customer other than discussions of rates, volumes, origins and destinations.

During the discussions with the company it emerged that important developments were also taking place in the field of food distribution. Many of the larger retailers were demanding different patterns of trading including more frequent deliveries, and possibly

in the future moving into the distribution industry themselves. This also recommended itself for future research.

A great many informal conversations were engaged in with a wide range of interested parties, including fellow lecturers, students, and transport managers from many organizations. All indicated that the Eighties would be a period of rapid development in many, but not necessarily all sectors of the road transport industry.

It had been an almost universally held belief in the sector, that most transport managers had to be led to new operating methods by their customers, that they were traditionally conservative, and virtually totally unfamiliar with the concept of positive marketing. In the course of discussions with actual operating managers however, it began to emerge that these perceived attributes were, for many, rapidly changing.

The mechanisms for that change were not apparent at that stage, but a strong contender emerged in the fact that many operators seen themselves as being drawn inexorably into a much closer contact with their customers and the total transport market. A prime mover in this area was believed to be the emergence of faster and more effective information handling techniques. These allowed the customer to reorganize his activities around much shorter planning horizons, and naturally to demand that his goods move in similarly tightly controlled time slots. The concept of a culture of change

with pace setter firms at the cutting edge emerged and was felt worthy of further investigation.

## RESULTS

This period of familiarization, which lasted in a defined sense about one year, actually continued throughout the entire period of the project, even when personal problems resulted in the mainstream activities being curtailed . It resulted in the production of a more formally defined list of areas which it was believed would bear further more rigorously constructed research, and contributed some light on the core objective of the study, namely the identification of those management policies which are most strongly associated with successful road transport organizations in the professional sector of the West Midlands road transport industry.

The extent of, and the complications within the law relating to the transport industry loomed large in many conversations. The extent of avoidance, evasion, and the burdens of complying with the legislative framework appeared to be a major environmental factor worthy of further investigation. The influence of general, externally imposed constraints within the transport environment on the ability of a transport operator to develop a coherent policy for growth, was deemed to be of some importance.

The ability of managers to identify appropriate customer and market trends so as to ensure a good seed bed for future growth was seen

as an essential ingredient for success. On more than one occasion smaller operators were inclined to point to the decline of their sector as a reason for their in firm problems. The observer might very well have thought that the real problem lay with an inability to identify market changes and position the firm within a growth sector. To identify those policies which a successful management would employ it was believed necessary to investigate the whole range of competitive marketing strategies likely to be employed. In that way some attempt could be made to link the high flying company's policy profile with the less fruitful ones.

The belief in the need for an enabling mechanism was also strongly reinforced by the informal conversations held during the sensitizing phase. It was deemed apposite to pursue the concept of a growth culture- some mechanism which could link the dynamic parts of the industry with the more sluggish. Even at that early stage it was felt that this would probably emerge within the retail led food distribution sector.

#### **EVOLVED APPROACH.**

It was decided that a two tiered approach was required for the study to proceed further. In the first instance those firms which had succeeded had to be identified. A measure that could be employed to identify success had to be arrived at, and this could then be applied to the target fleets. This stage attracted the title of the Desk Research Phase.



The next phase would consist of a follow up study which would incorporate a formalized questionnaire designed to provide sufficient data which could be analysed to allow the identification of the types of approach which were most strongly associated with success within the industry.

It was believed that such a portfolio of policies would very likely prove to be not sector specific, that is to say, that it would emerge that success depended on a series of management approaches which could be applied over all sectors within the transport industry. In the same manner those firms not achieving high success rates could be identified over the industry by a lack of adoption of the said types of management portfolio.

## CHAPTER 25 DESK RESEARCH .

To allow the study to proceed to the actual research phase it was believed that the following sequence of events had to be initiated;

Desk research.

Testing of basic hypothesis.

Field work follow up.

Interpretation of results.

### THE DESK RESEARCH.

The professional sector of the road transport industry is notorious as being a difficult area to investigate. Not least of the problems which the researcher is likely to face is the attitude of the industry to researchers of any kind- an attitude usually of uncompromising hostility. The roots of this reaction are not obscure, indeed they are well known to anyone with even a casual acquaintance with the industry.

The primary element in the afore mentioned hostility has its origins in the frequency of government surveys, and also in the vast quantities of regulations and forms which have already been pressed on the industry. The other major source of a general presumption of lack of co-operation is to be found in the nature of the structure of the industry itself. In terms of numbers of firms, the majority of sectors in the industry are dominated by

large numbers of small firms. These firms tend to be owner operated and such individuals are commonly suspicious of outsiders prying into their affairs. The road transport sector has long been regarded as an area which attracts individuals possessed of a rather robust personality, a type of character who by nature resents intrusion into his affairs.

It was for these reasons, although not for them alone, that it was decided that the first stage of the project should take the form of a desk based survey of the structure of the Professional Sector of the West Midlands Road Transport Industry.

It was believed important to assess the nature of the West Midlands Industry in the light of other studies which had investigated industry structure in other regions of the country. The most notable being those of Bayliss and Bayliss and Edwards *ibid*. The intention was not simply to repeat the type of analysis which had been applied to other regional fleets, but to test some of the general conclusions which had been reached on the basis of those surveys. At the same time it was the intention of the student to identify growth firms over a period of time. Such firms could then be investigated in the field work phase to attempt to isolate the key characteristics which marked them out for growth.

## BASIC IDENTIFICATION.

The 1933 Transport Act, introduced a licensing system which differentiated between own account and professional hauliers, this basic separation continued until 1970, when under the provisions of the 1968 Transport Act, a general O Licence was introduced which effectively removed the difference between own account and hire or reward operations. The important result of this change, from the point of view of potential researchers into the structure of the road transport industry, was that it made the collection of data relating to the two sectors extremely difficult to obtain. As a result of these changes we have an authority such as Bayliss saying, " *Thus the latest available statistics on the structure of the professional road haulage industry are for 1969.....*" Bayliss, 1986, *ibid.*

This position was however, not strictly correct. The Goods Vehicle Operators (Qualification) Regulations, 1977, reintroduced a distinction between own account operations and hire and reward operations. Although the new distinction does not preclude a firm which only operates on an own account basis from obtaining either of the licence types which would allow it to carry other peoples goods for hire or reward, there are grounds to believe that the vast majority of firms did not, and indeed do not so do.

The most important of such grounds is the need to employ a full time qualified transport manager. If the firm in question wishes

to obtain either a Standard National Licence or a Standard National Licence with International Operations then it must furnish proof in its application that such a full time employee exists. Such an employee must hold a Certificate of Professional Competence in Road Transport Operations of the appropriate type. If on the other hand, the firm simply wishes to carry its own goods then a Restricted Licence can be obtained as of right with the minimum of fuss. It should be pointed out that if a professional haulier type of licence is applied for then under the 1986 Transport Act such applications must be published in the local Press together with the location of the Operating Base. Local interested parties can object to the granting of the Licence for a variety of reasons, including environmental grounds which cover noise and amenity loss.

It is postulated that these factors alone are sufficient to assume that the overwhelming majority of firms which apply for a professional type licence do so because they intend to carry out at least a significant proportion of hire or reward operations.

In 1970 there was a widespread fear in the industry that the removal of the distinction between own account and hire or reward operations would result in a massive increase in the professional fleet as own account operators moved into the professional field. There has been little evidence to support this. Bayliss 1973 stated that in the first year after the removal when a surge in such activities might have been expected,

less than 2% of the total tonnage moved in the professional sector was new tonnages carried by old own account operators. The study conducted by Bayliss did uncover a large increase in new entrants into the professional sector but such increases are of no concern to us at this stage. The important point is that under conditions when own account operators could easily enter the professional sector very few apparently did so. Given the difficulties discussed above, and the fact that the industry was very bouyant at the time of the Bayliss survey, then it is felt that the postulation that the majority of firms applying for professional type licences after 1977, intended to carry out professional operations is a safe one.

This is not to say that ALL such applicants were professional hauliers. A significant number of such firms might very well require such a licence because of the day to day nature of their primary business activity. There were good a priori reasons to believe that many of the applicants for Standard O Licences were based on the belief that the need to carry other people's goods could arise occasionally and should be planned for. The result could be seen for example, in applications from wholesalers in the vegetable and meat market areas. The carrying of freight was not their main business but where vehicles could be more effectively utilized by carrying some produce for fellow traders, or for suppliers the ability to do so could be attractive. In the same manner some manufacturing companies applied for Standard O

O licences since in the course of their manufacturing business other peoples goods could be occasionally carried.

Such applications posed a slight problem for the initial desk phase of the study. It was obvious by definition that such firms were holders of the professional haulier type of licence, but it was also equally obvious that they could not really be classified as professional hauliers, and as such could not be included in any subsequent analysis of the industry. Some attempt had to be made to remove such firms from the proposed data base.

#### APPLICATIONS AND DECISIONS.

The procedures for applying for an "O" Licence adopted by the Licensing Authority and laid down in the various enactments came to the aid of the student. All applications for a new O Licence, a variation of an existing Licence, or the continuation of a Licence already held, must be published in documents referred to as the Application And Decisions of the local Licensing Authority.

As has already been discussed in Division One, the entire United Kingdom is divided into twelve Traffic Areas one of which is the West Midlands Area. This administrative area was not identical to the Local Government West Midlands Metropolitan Region. It was decided to limit the study area to the Metropolitan Region for two main reasons. In the first instance this area included

the industrial heartland of the West Midlands Traffic Area, and hence the greatest concentration of professional hauliers. Secondly since no official monies were available to fund the research the decision had to be taken to try and limit travel expenditure, since the Metropolitan region did in fact contain the greatest concentration of industrial activity and the major population centres, it was felt that the geographical limitation of the study was justified.

Each month Applications And Decisions provides all transactions in the relevant Traffic Area under the various categories mentioned above. Each application must contain specific information, as under:-

The applicants name and address.

If the applicant trades under a name other than his own this must be disclosed, if a subsidiary the parent company name must be given.

The nature of the organization has to be indicated, that is whether it is a public limited liability company or a sole proprietor.

The details of the application, the existing fleet that is the number of vehicles applied for, either initially or as a variation to an existing licence





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Or whether a continuation without variation is desired.

The location of the operating base.

The name and address of the transport manager and the reference number of his Certificate of Professional Competence in Road Transport Operations.

As can be seen from these details it was possible to eliminate most of the non specialist holders of Standard O Licences. In doing this the business name proved to be the most useful, since it frequently included an indication of the nature of the business activity carried on ( See Exhibit 25. for an example). Such applications would include terms such as "Meat Wholesalers, Vegetable Wholesalers, or "Delta Metals" or, a very common one, "Scrap Metal Dealers" and such like. Retail stores were also frequent applicants, as were farmers, and of course general manufacturing organizations. All of these categories were identified and eliminated from the data base.

Owner Drivers proved another type of organization which was easily identified. The majority of these traded under the name of the operators themselves. Many included some reference to "Road Transport" or "Haulage Contractor" or similar titles in tandem with their family name thus making identification a routine matter. The main group which caused some concern were those

applications which a priori, it was believed were from owner drivers, but which did not refer to road operations anywhere in their title. To deal with this group recourse was made to the entry concerning the holder of the Certificate of Professional Competence. It was first postulated that an individual who did not really need a Standard O Licence would be discouraged from applying for such a licence by the Certificate of Professional Competence and Operating Base requirements. Such regulations could be both costly and difficult to comply with, therefore the majority of applications from individuals were seen as implying that at least a significant proportion of their activities involved professional transport operations. In the majority of cases examined the address of the nominated transport manager corresponded with the address of the applicant, either being the same individual or in most other cases the wife, or possibly the sister of the applicant. This was taken as an indication that the applicant was in fact an owner driver, since if they were an organization engaged in another activity it was likely that an employee would be responsible for transport and or warehouse operations. This would not of course be a reasonable assumption if the firm in question was extremely small, such as a family retail shop, but in that case why operate a vehicle over 3.5 tonnes, and become involved in the complex application for a Standard O Licence rather than a Restricted Licence which would be granted as of right, and would allow them to carry their own goods anywhere.

By applying this screening procedure it was believed that the data base constructed effectively consisted only of professional hauliers, or organizations whose activities contained a large proportion of professional transport activities. To test this, telephone contact was made with a random selection of 25 organizations from the data base-all described themselves as "haulage contractors" or engaged in "haulage work". As a further check, access was obtained to the data base of "Industrial Market Locations", a commercial data base supplier located at Leamington Spa, who provide listings of business activities in the West Midlands. This data base did not include details of owner operators, but their numbers for professional corporate hauliers located in the West Midland was not incompatible with the researchers. It should perhaps be pointed out that Industrial Market Locations' data were gathered for a different purpose from the students data and could not be substituted- in any case the price levels discussed would have prohibited this.

The essential point is that through the use of Applications and Decisions as a source of information, it was possible for the student to construct a data base for the professional haulage sector of the West Midlands Road Transport Industry. In the initial trawl only identification was tested, but of course this was insufficient for the purposes of the project. A more complex data base had to be constructed as discussed below.

## TIME SERIES AND OPERATOR CLASSIFICATION.

At the core of the motivation to carry out the project under review was the desire to identify those characteristics which singled out some transport operations as growth firms. There were other factors which were felt were important to test in the context of the West Midlands, but this was the most important central objective.

The majority of previous studies had relied on the comparison of a one year set of data with that of another year, such as Bayliss 1973 *ibid.* and Sharp 1970 *ibid.* no known study examined an entire Traffic Area over a period of time in order to investigate growth firms within that area. The student intended to carry out this type of review. Instead of comparing an analysis of fleet distribution between one year and another, the intention was to examine year by year what was actually happening to the west Midlands fleet in terms of individual firm growth changes and subsequently, to attempt to identify why particular firms led such trends.

The selection of a time cycle was important, since of course, an open ended period for study was impractical. It was decided that the O Licence validity period was the obvious interval to select. The O Licence, irrespective of classification was valid for a period of five years, therefore if the Applications and Decisions source was monitored for a five year period then all holders of

O Licences in the West Midlands would have the details of their fleets published on at least one occasion. It was also believed that such a time period would allow the pick up of applications for variations such as to identify the most rapidly growing firms within the regional fleet.

The transport industry- like any other- consists of a combination of different types of organizations. It was deemed apposite that the information in Applications and Decisions be sub divided on the basis of firm structure and activity.

As has already been discussed in Division One, there has developed a substantial body of accepted wisdom which has held that those firms engaged in long haul operations will be able to reap some economies of scale such that their rate of growth, and or their average scale of operations would be greater than hauliers engaged in the short journey business. As a consequence it was felt necessary to identify those firms which had a mix of activities where long haul movements were the most important.

There are basically two approaches to the task of such identification. The first and perhaps the most obvious, was to approach a cross section of firms within the industry and ascertain through direct questioning which of them had a majority of their business in the long haul sector. This option would have involved a high expenditure in time and perhaps finance.

The alternative was to gain access to some official data which allowed the identification of such firms, at least to an acceptable degree of accuracy. The solution was found in the combination of the sub classifications of the Standard O Licence and the complimentary Certificate of Professional Competence In Road Transport Operations Examinations.

Any operator who wished to engage in international operations, that is road transport operations involving journeys outside the British Isles, is required to have a full time employee, nominated as Transport Manager who has passed the relevant examinations in National and International Operations.

To obtain such a Certificate involves studying and successfully passing two distinct examinations. The International syllabus requires a detailed knowledge of EEC and European national traffic laws and regulations with a recommended study time of 32 hours and some 14 separate areas of knowledge to be tested. It is in other words a substantial task. Those operators who were not likely to be engaged in international movements would thus be very unlikely to undertake the high time and cost commitment which obtaining the International Licence would involve. It could be held then, that those hauliers who did in fact hold International Licences were likely to actually be engaged in such operations and not hold the licence purely as a precaution. Given that their operating bases were in the West Midlands area then it could be safely assumed that such

organizations were on average engaged in longer haul operations than firms holding only Standard National Licences.

The desk research phase could then trace the monthly variations in the sizes of the various fleets within the International Haulage Sector. At the same time size of entry and the average scale of operations could also be easily recorded. Thus allowing the conclusions of the "accepted wisdom" to be tested against actual data.

Applications and Decisions provided the means whereby firms could be classified as either an Owner Operator or a Limited Liability company. It was hoped that such a division might indicate different growth rates for the two categories which could be subsequently investigated to ascertain the reasons for the differing types of ownership, and whether or not these had an influence on the growth and or success rates.

#### SUB CONTRACTING.

The literature abounds with references to the degree of subcontracting which exists within the industry and the student



was very anxious to identify if possible, those firms engaged in this activity. This seemed to be a very daunting task, and short of actual field investigation, no obvious solution immediately presented itself.

The initial examinations of the Applications And Decisions listings once again provided data which was felt to be of an acceptable level of integrity. As has been pointed out above, the address of the operating base, and the location where vehicles are to be kept are integral pieces of information included in all applications. As data was being extracted for input into the initial investigations it was noted that a great many hauliers indicated that their operating bases, and or, the location of their vehicles were in fact at the address either of other hauliers or of sundry manufacturing and trading companies.

The question then had to be asked, what possible motivation could say Dunlop Tyres, or ACR Concrete, Massey Ferguson, or Jones Haulage or indeed any of the other well known ( and not so well known ) organizations have in allowing a particular haulier either to store their vehicles or have their operating base in their premises? The corollary was of equal interest, what would be the advantages from the operators point of view of associating his operating base, which is after all the legal location of his Certificate of Professional Competence holder, with the name of either another haulier or that of a manufacturing or trading company?

The answers to these questions were believed relatively straightforward. The manufacturing company would derive benefit from allowing such activities only if the haulier in question had some form of contractual arrangement with the firm. The company could have easier, more direct communications and control with the transport firm, and could reap certain operating advantages such as more effective loading and loading times if the vehicles were actually located at its main manufacturing and or distribution points. The transport operator would find it difficult to determine benefits from locating his base at another's premises unless there were some interdependence. If not then the establishment of an independent identity would be extremely difficult. In the cases where he was seen to be at the base of other transport operators there was always likely to be the constant threat of any business he could capture being poached by the other transport company. Potential customers could always use that presence as a bargaining counter whenever prices were being discussed. It is also probable that customers might feel that he owed some form of allegiance to the owner of his premises and might divert his vehicles to his lessor's needs in emergencies. If the location were at a manufacturing or other trading company's location then again there would always be present the thought that such company's business requirements might receive preferential treatment.

There was the possibility of course that the non transport company was generating income from spare ground and or offices

by renting or leasing them to transport operators. Examination of the Applications And Decisions data however led to the conclusion that this was an unlikely explanation.

In the first instance, the numbers of transport firms involved were small, seldom more than two, most commonly only one being located at manufacturing locations. At the same time, since the numbers of vehicles involved were also known, it was evident that it was not a case of one or two very large fleets being in these locations, as fleet sizes were on the whole rather small. In the case of location at other haulier's bases the size of fleets involved were on average the smallest, most commonly being one or two vehicles.

The researcher was left with the conclusion that such arrangements could be taken as prima facie evidence of some form of sub contracting relationship being in existence between the haulier concerned and the owner of the premises. This allowed the collection of data for yet another category of firm namely sub contracting or closely related hauliers.

This category was of interest to the student. If freedom of action was important in allowing a manager to draw up a portfolio of successful growth strategies, then the availability of data on firms in a subcontracting or dependent arrangement would provide a good contrast with firms not in such arrangements. If on the other hand, as some critics of the

transport industry have implied, transport operators are very poor marketeers and even worse strategists, relying on being pulled into more dynamic postures by their customers, then the relative growth rates of sub contractors and the rest of the industry would be instructive. This being especially so after a follow up survey to investigate the actual management practices of the various selected categories of transport organization.

There was a problem associated with this classification. The absence of a base or holding point for vehicles at another's premises could not be taken as an indication that such operators did not engage in sub contracting relationships. It might be acceptable to deduce that such a relationship was in operation when the evidence outlined above existed but the non presence of such evidence did not rule out sub contracting between the other operators and or outside parties.

It was felt that where a haulier was located at another organization's premises then it indicated a very close relationship indeed, perhaps going beyond normal contractual relationships. It was concluded that the final appraisal of such arrangements would have to be postponed until the actual field work phase of the project. It was also decided however, that initial investigation of this category of operator should go ahead as they so obviously represented transport firms with extremely high levels of dependence on the primary firm concerned, indeed sub contractor was felt to be too weak a term

to illustrate the relationship , and they have been classified Symbion firms.

Hauliers outside the symbion category, even if they were involved in sub contracting operations, were felt to demonstrate greater degrees of initiative and freedom. They might very well have close relationships with one or a small number of customers, but if for whatever reason they feel they have to extend their customer base, or move into a different sector then this could be attempted by them much more easily than by the symbion type of firm.

It is therefore assumed that for these reasons the operators not identified as symbiotic can legitimately be regarded as a separate "normal" category, subsequently termed Jobbing Firms.

#### DATA BASE IDENTITIES.

The above progression resulted in the entries in Applications And Decisions being divided into a number of sub groups and employed in the construction of the final data base.

INTERNATIONAL OPERATORS. These were firms who held International Licences and as such could be considered to have on average longer hauls than those firms which held only National Licences. This group was further subdivided as under;

INTERNATIONAL LIMITED LIABILITY COMPANIES.

INTERNATIONAL OWNER OPERATORS.

Both of these groupings were further divided as under;

SYMBION LIMITED LIABILITY COMPANIES.

SYMBION OWNER OPERATORS

JOBGING LIMITED LIABILITY COMPANIES.

JOBGING OWNER OPERATORS.

The description Jobging being adopted to indicate firms which had at least apparently, a greater degree of management action and freedom open to them than had the Symbion firms.

NATIONAL OPERATORS. These were organizations which held only National Standard Licences and could thus be expected to have on average a profile of shorter hauls than those involved in international operations. This category of haulier was sectioned into the same sub groups as the International Operators.

To further clarify the basis behind the position that international operators would on average have longer hauls than national operators, it is important to remember that some 62% of

all Tonnes moved by road within the United Kingdom move on journeys of 25 miles or less, whereas only about 5% move on journeys of 150 miles and over. ( Government Road Transport Statistics 1986.) The geographical position of the West Midlands Metropolitan Area suggests that international journeys, that is those moving outside the United Kingdom, would normally usually be on hauls of more than 150 miles. At the same time there will most certainly be firms in the West Midlands not involved in international journeys who would undoubtedly classify their business as being long haul. Such firms would certainly consider regular journeys to say the South West, North East and West England, all parts of Scotland, Northern Ireland and the Republic of Ireland as falling within the long haul category.

Since the volumes of traffics likely to be involved in such journeys are by examination of national survey data seen to be small, then it can be assumed that the proportion of such firms in the numbers of the West Midland Fleet holding National Licences only, will be small, and can be safely ignored for our purposes. In any event, international journeys can reasonably be expected to be on average longer, and hence any advantage to be gained by long haul operations should show up very clearly in growth patterns for firms primarily engaged in such traffics. The numbers of National Licence holders exclusively engaged in long haul national journeys was deemed to be so small as to be unlikely to significantly affect patterns within the fleet. This would not be the case if such operators could be shown to

represent an unusually large proportion of the West Midlands Fleet; no evidence to support this was discovered. The West Midlands Traffic Area Office was of the opinion that the West Midlands Fleet contained no such bias. Cumberland House, Broad Street, Birmingham. Discussion with E. A. Davies 23rd. July 1983.

#### MEASURES OF SUCCESS AND GROWTH.

The core objective of the project is, of course, to determine those management characteristics of a transport organization which distinguish it as a potential growth and/or successful firm. The most basic determinant which had to be decided was therefore the fundamental measure of what was really meant by the statement "growth and or success". In the field of transport studies in general this apparently simple measure has caused a great deal of methodological argument. The only generally accepted position being that there is, as of yet, no universal answer to what is precisely meant by growth and success within the industry. One position is nonetheless clear, before growth or success can be measured there must be some general agreement as to what constitutes size and output within the industry. Once there is agreement as to how to measure size, then growth and or success might reasonably be defined in terms of variations in size and output.

The most common argument concerning the measurement of size centres around whether firm size should be measured by the



number of vehicles owned or the carrying capacity of the fleet, or some other measure of output.

Kirtz 1974 *ibid.* argues that fleet capacity is a more accurate measure of size since if number of vehicles is taken as the basic standard, then a small lorry is given the same weight as a large one. In the same fashion if a vehicle is worked on a 12 hour shift or 24 hours per day this does not affect the firm size if size is measured by the number of vehicles.

The researcher would not disagree with these observations, but believes that they do not preclude the more simple measure of size through the number of vehicles actually in the fleet as being equally as valid.

If we accept that fleet capacity is a good measure of size, and ascertain the capacity of a particular fleet, then the very same objections raised by Kirtz may be brought against this measure. Simply because a fleet has a particular capacity available is no guarantee that this capacity is being utilized to the full. A poorly managed fleet consisting of say 5 vehicles with a carrying potential of 100 tonnes operating at 50% capacity, may in fact be moving less actual tonnages than a fleet made up of 3 vehicles of capacity of 20 tonnes operating at 100 % levels of utilization. It is submitted therefore that the measure of size through simple AVAILABLE capacity of the fleet is no more relevant than numbers of vehicles operated.

Kirtz *ibid.* points out with reference to whether fleet capacity is more desirable or not than fleet numbers as a measure of size, that in favour of fleet numbers in contrast with capacity "These disadvantages do not seem to affect the general conclusions which can be drawn from the study referred to." That is Bayliss and Edwards 1971, *ibid.*

It should also be noted that the enquiry into the road haulage industry by the Price Commission 1978, in all circumstances and data collections employed number of vehicles as the measure for size of transport operation. The basic rationale was that for the effective operator, market conditions would determine the capacity of his vehicles, and hence within any particular activity since competition would move firms towards the same general type of vehicle, fleet numbers would offer a good measure of firm scale.

Finally in "The Structure Of The Road Haulage Industry In The United Kingdom And Optimum Scale" Journal Of Transport Economics And Policy 1986, Bayliss out of evidence concerning the size and structure of the transport fleet illustrated in some 12 tables employed fleet size in no less than 9 of the tables that is in 75%. It is therefore postulated that in spite of some weaknesses, fleet size is an acceptable measure for indicating the scale of operations of the transport firm. By definition therefore, changes in fleet size, as measured by the number of vehicles could be taken as a measure of the growth and success

of firms within the Professional Sector of the West Midlands Transport Industry.

#### BASIC DATA COLLECTED.

The data base was constructed for the "O" Licence cycle 1978 1982. This allowed the student to examine all fleets within the West Midlands Metropolitan Region, and also any variations which were applied for over that period. This enabled a picture to be built up which included the parameters listed below:-

The relative sizes of the National and International fleets.

The volume and direction of movements within these fleets.

The relative proportions of the various categories of the fleet.

The identification of growth firms.

The overall composition of the West Midlands fleet and changes in it over the cycle time.

By using the post code as a location indicator the geographical dispersion of any component part of the fleet could be studied

This basic data base could be utilized to test the various hypotheses formulated concerning the application of the "accepted wisdom" to growth rates; the size of transport firms; the structure of the professional fleet and the relationship between these elements for long haul and short haul firms.

The results of the analysis of the data base, the hypotheses and their testing form the basis of the next section in this thesis.

## CHAPTER 26 THE WEST MIDLANDS FLEET, THE BACKGROUND.

### SECTOR FOR STUDY.

"The West Midlands Road Transport Fleet" is an all embracing phrase which would encompass all commercial goods vehicles operating within the West Midlands Metropolitan area, but it is not that entire entity which was the subject of the study. The sector which was of greatest interest was that part of the West Midlands Fleet which could be seen to exhibit growth activity, that is, that part of the fleet which was experiencing the entry and exit of vehicles.

It is true to say that over the period of the project there was also a great deal of activity with regard to organizations within the fleet. There were many businesses which, for a variety of reasons, could no longer continue in existence within the road transport industry and left the sector. There were also a great many who entered the sector. These were not of special interest for study as it was held that those who had left the industry patently did not operate a portfolio of policies of interest to the core of the study, whereas those who were new to the industry if effective would show up over the period of licence monitoring.

The sector which was examined in depth can therefore be defined as those business organizations who over the cycle of one Standard "O" Licence or longer showed success by increasing the size of their fleet, together with those less successful firms who experienced a decline in their fleet size but never the less continued trading.

It was considered that it would be within this particular segment of organizations active in road transport that the reasons behind the success of one firm and the decline of another could be identified. It should be noted that the project was therefore interested not only in positive movements within the fleet but also negative ones, although for the purposes of in depth investigation it was proposed only to investigate those firms showing positive growth characteristics.

#### **TIME CYCLE INVESTIGATED.**

The period covering the time from January 1st. 1978 until December 31st. 1982 provided the data for the investigation. This was selected because the validity of a Standard "O" Licence is five years, the Certificate of Professional Competence Regulations came into full effect in 1978 and hence all operators in the West Midlands Area would pass through the Licensing Authority records during that cycle. The five year period would also of course ensure that any increases or decreases over a suitably lengthy period would be tracked and recorded.

Since the project commenced in 1981 it was obviously not practical to cover the subsequent licence cycle, that is the January 1983 to December 1987 period.

All data contained in the Applications and Decisions publication which related to the study area were extracted and entered into a series of files in a Harris System 38 computer. All subsequent allusions to computer data should be taken as referring to information contained in these files rather than from other sources, if at any time other sources are referenced due notice will be given. All computer data related to the project is included in the attached Appendices.

#### **DATA FILE STRUCTURE.**

The basic raw computer input was directed to a series of files which related to the structure of the industry as defined for the purposes of the project. It is normal practice in the literature to classify the road transport fleet either according to the number of vehicles operated or as to whether the haulier is engaged in long or short haul operations, or on occasions the nature of the sector in which the business is engaged, see Bayliss, Pettite and others. As discussed earlier it was deemed that for the purposes of this particular investigation, such a classification although partially employed was not entirely effective.

ALL DATA WERE THEREFORE CONSIDERED UNDER TWO DIFFERENT SEGMENTATIONS OF THE GROWTH FLEET. ON THE ONE HAND A DIVISION WAS MADE ON THE BASIS OF TYPE OF ORGANIZATIONAL STRUCTURE, THAT IS LIMITED LIABILITY FIRMS AND OWNER DRIVERS TOGETHER WITH A SUBDIVISION OF NATIONAL AND INTERNATIONAL OPERATIONS; AND ON THE OTHER HAND, THE FLEET WAS DIVIDED INTO SYMBION AND NON SYMBION FIRMS, AGAIN WITH A FURTHER SUBDIVISION ON THE BASIS OF NATIONAL AND INTERNATIONAL OPERATIONS. AN IMPORTANT POINT IS THAT WITHIN THE SYMBION OR NON SYMBION CLASSIFICATION THERE CAN BE SOLE PROPRIETOR, PARTNERSHIP, PRIVATE LIMITED LIABILITY COMPANIES AND PUBLIC LIMITED LIABILITY COMPANIES, THEIR MAIN FEATURE IS WHETHER OR NOT THEY SUGGEST A SYMBION RELATIONSHIP.

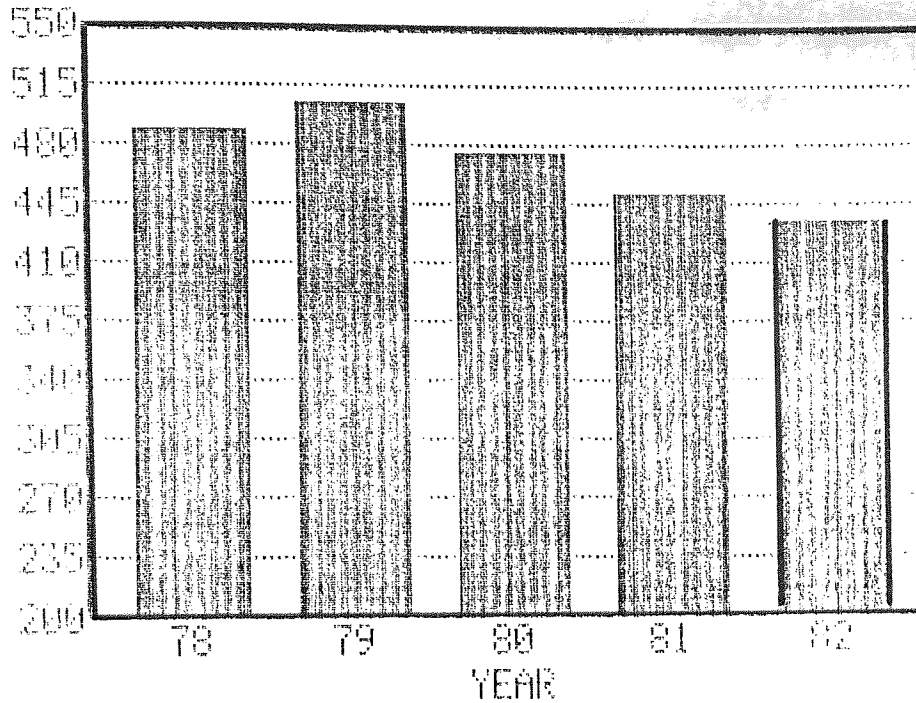
THE BASIS BEHIND THIS DIVISION HAS ALREADY BEEN DISCUSSED UNDER THE HEADING OF "DESK RESEARCH. THE PARAMETERS." THE INTENTION BEING TO ATTEMPT TO DISCOVER WHETHER OR NOT BASIC ORGANIZATION, LENGTH OF HAUL AND POSSIBLY, VERY CLOSE RELATIONSHIPS WITH CUSTOMERS MIGHT BE IDENTIFIED AS HAVING AN IMPORTANT INFLUENCE ON THE SUCCESS AND GROWTH RATES OF THE FIRMS INVOLVED.

#### **NATIONAL CONTEXT.**

THE CONSEQUENCES OF THE DERIVED NATURE OF THE DEMAND FOR TRANSPORT, AND THE EFFECT OF THE GENERAL LEVEL OF ECONOMIC ACTIVITY ON THE SIZE OF THE TRANSPORT FLEET HAVE ALREADY BEEN REVIEWED IN DIVISION ONE. THE SEGMENT OF THE INDUSTRY SUBJECT TO



# NATIONAL FLEET ACTIVITY



GRAPH A

## Exhibit 26

To show the levels of activity within the National Fleet for the period covered by the study.

Source: Transport Statistics. HMSO.

|                      | 1978           | 1979 | 1980 | 1981 | 1982 | 1986 |
|----------------------|----------------|------|------|------|------|------|
|                      | Million Tonnes |      |      |      |      |      |
| Rigid Vehicles       | 921            | 907  | 867  | 790  | 874  | 834  |
| Articulated Vehicles | 500            | 509  | 450  | 435  | 436  | 552  |
| All Vehicles         | 1421           | 1416 | 1317 | 1225 | 1310 | 1386 |

Exhibit 27.

To show the relationship between total tonnes moved and heavy goods vehicles.

Source: Transport Statistics. HMSO

investigation under this project cannot therefore be treated as being isolated from these general influences.

Exhibit 26, shows the general level of activity in the national fleet for the period 1978 to 1982. It will be seen that the national fleet suffered a quite dramatic drop in numbers over this period, but especially between 1979 and 1981. As would be expected from the general discussion already noted, a major cause of this drop in numbers could be sought in a general decline in economic activity over the period in question. The general economic conditions affecting the United Kingdom at that time are too well known to be rehearsed here, suffice to say that as would be expected the national fleet showed a sympathetic movement with the overall economic situation.

Exhibit 27, shows this effect even more clearly. This illustrates the pattern for the movement of the total amounts of goods lifted by heavy goods vehicles over the same time cycle. It should be pointed out that the decline in numbers of vehicles on the road would likely be less severe than the decline in tonnes carried. Many firms would stay in business whilst operating at a lower utilization level with the same vehicles, and probably also at lower profit levels, never the less the general relationship is obvious.

Traffic Carried. Million Tonnes

|               | 1978 | 1979 | 1980 | 1981 | 1982 | 1986 |
|---------------|------|------|------|------|------|------|
| Professional. | 734  | 730  | 658  | 635  | 659  | 769  |
| Own Account.  | 686  | 686  | 659  | 591  | 651  | 618  |

Traffic Carried. Billion Tonne Kilometres.

|               |      |      |      |      |      |      |
|---------------|------|------|------|------|------|------|
| Professional. | 60.5 | 61.4 | 54.7 | 55.8 | 56.8 | 68.7 |
| Own Account.  | 35.9 | 37.9 | 35.0 | 34.4 | 34.3 | 32.4 |

Exhibit 28.

To illustrate the relative position of Own Account and Professional Fleet utilization.

Source: Transport Statistics. HMSO.

## OWN ACCOUNT AND HIRE AND REWARD.

Exhibit 28, is perhaps of more interest. This shows the total tonne kilometres moved by the national transport fleet over the period 1978 to 1982 with the addition of 1986 figures for comparison. In this exhibit, tonnes moved are shown divided between own account vehicles and hire or reward operations. As would be expected the general trends illustrated above are reflected, but it is of importance to note the relationship between the two sectors. Far and away the greatest proportion of tonne kilometres run is accounted for by hire or reward vehicles. This might at first glance be taken to indicate that the hire or reward fleet is of vastly more importance than the own account fleet, but this would be a false interpretation. It is of interest to note the declining proportion of tonne kilometres taken up by the own account fleets. Research elsewhere notably by Bayliss 1971 *ibid.* have shown that own account vehicles on average run on much shorter journeys than hire or reward vehicles, hence the importance of the hire or reward fleets is exaggerated in this exhibit. It is not relative importance that is the object here however, but to show that the proportion of goods move on own account vehicles has declined since approximately 1980. The data for 1986 perhaps show that trend more clearly.

## OWN ACCOUNT AND HIRE OR REWARD RELATIONSHIPS.

This change in the relative proportions of goods moved by the two types of Licences could have important implications for the study at large. If there was a general movement away from moving goods by own account vehicles then the inference would be that there would be an increase in the available market for professional hauliers. This would be the case even when there was an overall slow down in the general levels of demand for transport. This increase in available traffic would represent a transfer from one mode of operation to another. The total volume of goods moved would not have gone up, but the relative market for hire or reward vehicles would have.

Those firms which managed to increase their fleet size over this period could reasonably be considered as likely to show a portfolio of management policies which could manage change and lead to success in the future. In the same manner those segments of the market which showed relative growth during this time might also be reasonably hypothesised as to exhibit at least some of the characteristics required for future growth.

These exhibits of course, involve national trends, which might or might not have been reflected in the West Midlands Industry, but the nature of the forces underlying these trends were obviously of some import. It is to the West Midlands Fleet then that attention must be directed.

## THE WEST MIDLANDS ENVIRONMENT

The economic fortunes of the region for the period of review of fleet activity have been almost uniformly bad. In 1976 the per capita GDP output for the region was about 98.1% of the United Kingdom figure, at that time the second highest level in the country, by 1981-82 that proportion had fallen to 90.6% which was in fact the lowest of the English regions. (1984 Regional Abstract of Statistics.)

This decline was very much influenced by a higher than average regional dependence on industries with lower than normal growth rates. The region at that time had the greatest proportion of its income in the country derived from traditional manufacturing industries, 33.1% as opposed to the national average of 24.8% Regional Abstract of Statistics op. cit.

Within that manufacturing base there was a particular dependence on metal manufactures, vehicle manufactures, and other metal goods. These were three of the slowest growing industrial sectors of the review period. In addition, throughout these areas of economic activity there was a slower than national average growth rate. Thus we find vehicle manufactures growing locally at an annual rate of 38% at then current prices, compared to 57% nationally, whereas distribution was growing nationally at 93% again at then current prices, in the West Midlands the figure was 77%. In 1979/80 the region had the lowest proportion of personal

# UNEMPLOYMENT RATE

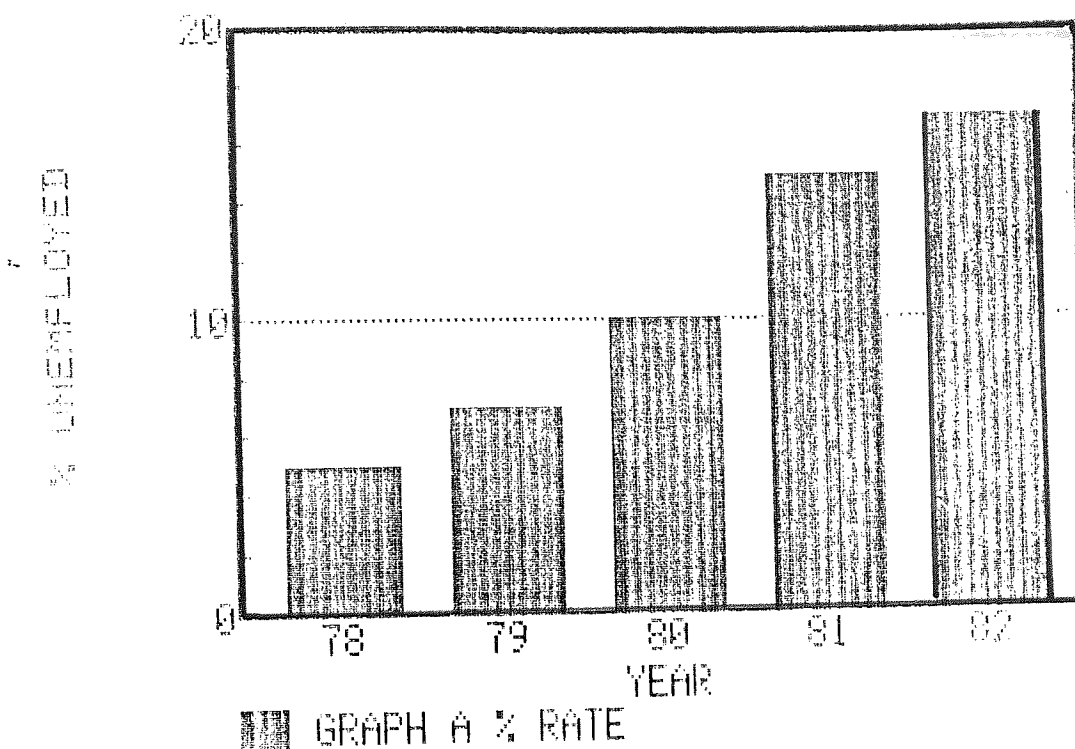


Exhibit 29

To show the levels of unemployed in the West Midlands Region

Source: Regional Abstract Of Statistics. HMSO.



GDP/HEAD(UK=100)

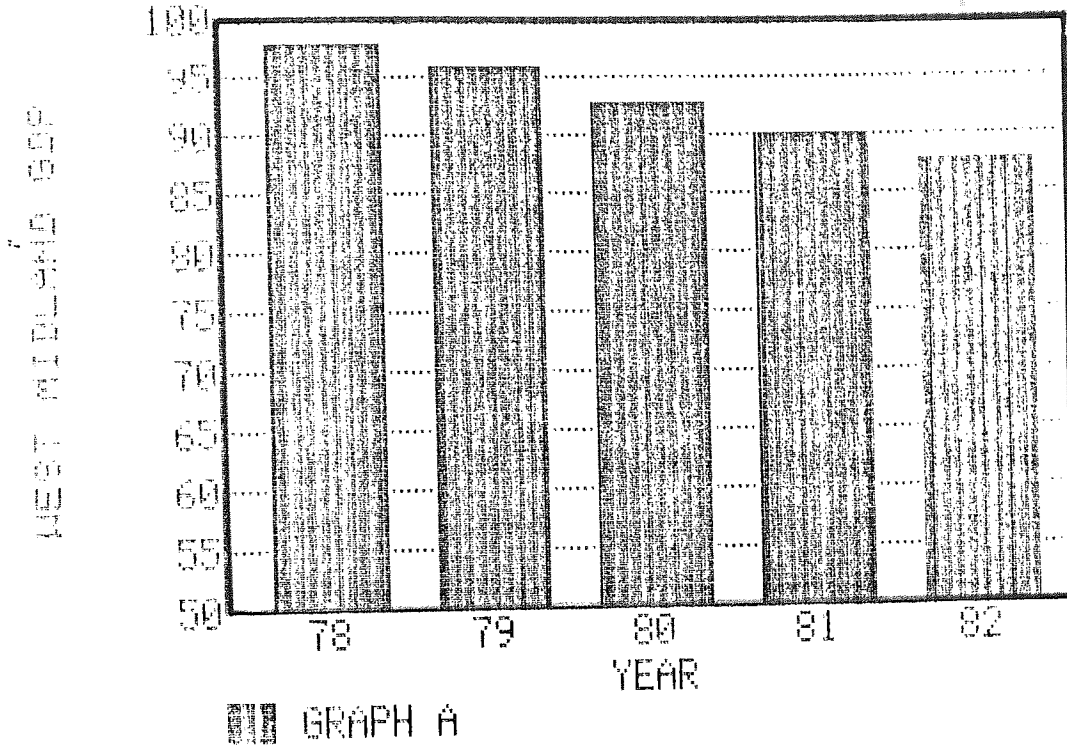


Exhibit 30

To show the levels of GDP in the West Midlands as a percentage of National GDP.

Source: Regional Abstract Of Statistics. HMSO.

incomes derived from profits and professional earnings (5.9%), and the highest derived from employment (84.4%) in the United Kingdom.

In terms of Gross Value Added per employee, in 1982 the West Midlands achieved about 89% of the national average, this was higher than Northern Ireland and East Anglia, but lower than any other region of the United Kingdom. Regional Abstract of Statistics *ibid.* In general terms the pace of economic activity in the region was slowing down very rapidly over the period of interest with inevitable effects on the transport fleet.

#### **EFFECT ON EMPLOYMENT.**

The general economic and business considerations reviewed above can perhaps be narrowed down for impact. Exhibit 29, shows the percentage unemployment rate for the West Midlands over the 1978 to 1982 period. From one of the most prosperous industrially active regions of the United Kingdom, the area suffered rapid decline over the time span considered. The entire country was of course suffering a similar slow down in manufacturing activity but the region was particularly hard hit. Exhibit 30, shows the Gross Domestic Product for the West Midlands manufacturing industry as a percentage of that of the country as a whole. As can be seen not only was the entire manufacturing sector of the United Kingdom experiencing problems but within the West Midlands its relative share was also in decline.

# STANDARD/RESTRICTED FLEETS

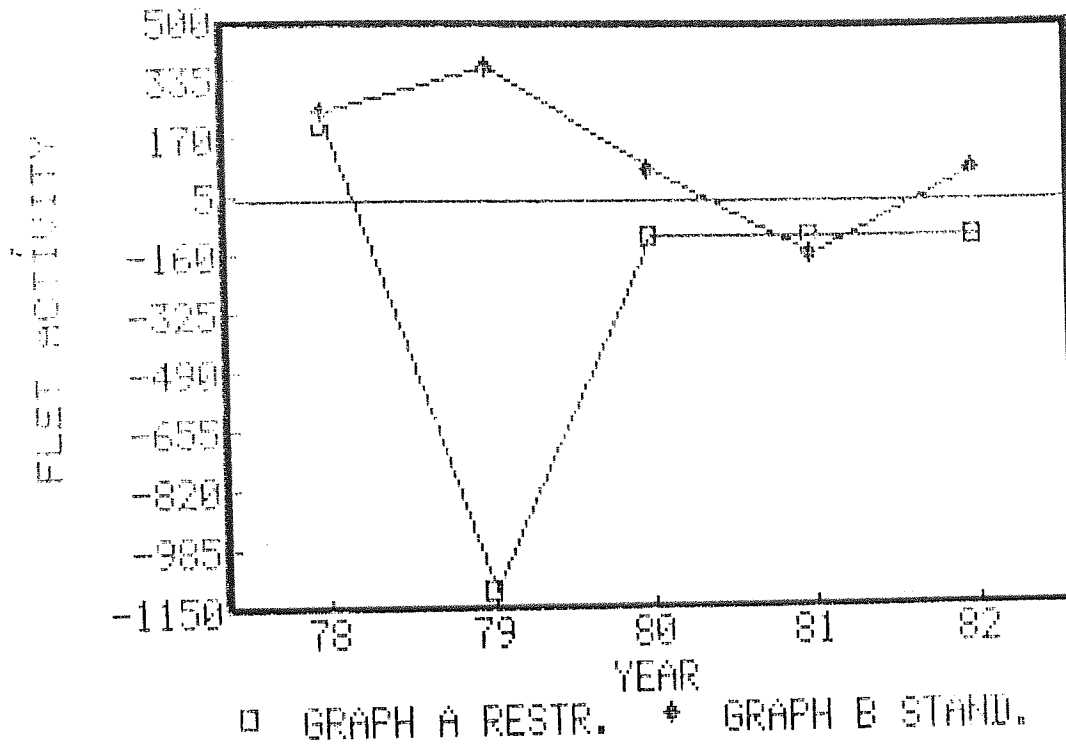


Exhibit 31

To show the relative levels of activity in the Own Account and Professional Fleets.

Source: Research Data

## CHAPTER 27 WEST MIDLANDS FLEET ACTIVITY.

All exhibits in this chapter were drawn from data contained in the computer files constructed for the project, and refer to the sectors of the West Midlands Fleet defined above under "DATA FILE STRUCTURES".

Exhibit 31, illustrates the actual "state of play" for non professional and professional fleets in the West Midland sectors under investigation. The vertical axis refers to net numbers of vehicle movements, that is the final state of the fleets after taking into account all vehicles removed from existing "O" Licences and all vehicles added. A Restricted "O" Licence is the equivalent of the old own account licence and a standard the rough equivalent of hire or reward licence types. It must be remembered that these data refer only to active firms, that is organization who continued to survive in the industry, and does not include data for firms who discontinued economic activity.

### 1979 AND AFTER

The obvious salient structural question is to account for the rather stark movements of 1979. If reference is made back to the exhibits illustrating the national fleet, it will be observed that 1979 does not appear to have any particular significance. Although this was a time before the project was actually launched, certain

tentative hypotheses can be proposed to explain the rather dramatic movements in the fleet.

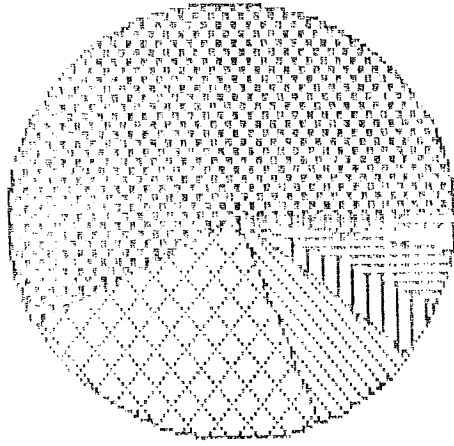
The first must be that the own account sector is the one which first bore the brunt of the general decline in economic activity. Transport is subject to derived demand, and consequently there is a time lapse between a decline in general economic activity and its taking effect on the transport fleet. It will be noted that from 1979 onwards the professional sector did in fact also suffer a decline, indeed not turning the corner until 1981 and after.

The apparent more dramatic fall in the restricted fleet can of course be explained simply by the fact that it is in total a larger fleet, and thus a decline in the manufacturing base with its subsequent knock on effect on the multitudes of small manufacturing firms in the West Midlands would of necessity embroil large numbers of vehicles. What is more interesting is the increase in the professional fleet in 1979, and the relatively stationary size of the restricted fleet after 1980.

#### **RELATIVE FORTUNES**

The increase in vehicle numbers in the professional sector between 1978 and 1979 was probably mainly due to own account operators cutting their own investment in transport, but still producing goods and hence still desiring that they move to their markets. This meant a temporary increase in business for all operators in

# TOTAL FLEET COMPOSITION



|   |        |                 |
|---|--------|-----------------|
| □ | 0.44%  | 100+ VEHICLES   |
| ▨ | 2.02%  | 41-100 VEHICLES |
| ▧ | 4.14%  | 16-20 VEHICLES  |
| ▩ | 4.23%  | 21-40 VEHICLES  |
| ▦ | 8.36%  | 11-15 VEHICLES  |
| ▤ | 23.15% | 6-10 VEHICLES   |
| ▥ | 57.66% | 1-5 VEHICLES    |

## Exhibit 32

To show the size structure of the growth sector of the West Midlands Professional Fleet.

Source: Research Data

the transport sector. The effects of the general economic decline could not be avoided indefinitely, and therefore vehicles did leave the professional sector subsequently. It must be emphasised none the less, that even during the period of steepest decline, some transport firms were expanding, and other factors were at work which meant that increases took place in the relative amount of goods available for movement. Some evidence for this can be gathered from the period after 1980, where it can be seen that the restricted sector did not exhibit any particular signs of growth in vehicle numbers, whereas the professional sector did. It is suggested that this was influenced by the dramatic and far reaching changes which were taking place both in the transport sector itself and within the ranks of its major customers. See "PATTERNS OF CHANGE IN THE WEST MIDLANDS TRANSPORT INDUSTRY" later. Those fleets which experienced growth and decline over this licence cycle are now discussed in greater depth below.

#### **SECTOR STRUCTURE/ ACTIVITY- LICENCE CYCLE 1978-1982.**

No clear ordered information existed for the detailed structure of the West Midlands Fleet, although the information was hidden within the general statistics published in the form of the Application and Decisions of the Licensing Authority.

Exhibit 32, shows the structure of the fleet over the five year licensing cycle which was of interest to the study. As is evident and as could be expected, the small organization dominates the

## Fleet Growth In West Midlands

| Fleet Size. | 1978 | 1979 | 1980 | 1981 | 1982 |
|-------------|------|------|------|------|------|
| 1-5         | 60.5 | 57.6 | 53.7 | 53.8 | 52.8 |
| 6-10        | 22.1 | 26.1 | 24.6 | 22.3 | 16.6 |
| 11-15       | 6.4  | 6.4  | 9.9  | 9.0  | 16.7 |
| 16-20       | 4.2  | 3.4  | 3.9  | 3.8  | 5.24 |
| 21-40       | 3.9  | 4.2  | 5.4  | 6.7  | 5.2  |
| 41-100      | 1.4  | 2.3  | 2.5  | 3.8  | 3.3  |
| 100+        | 1.4  | 1    | 1    | 1    | 1    |

### Exhibit 33

To illustrate patterns of growth in West Midlands. All figures represent % share of active fleet in respective year. All figures rounded up.

Source: Research Data.



industry at least in terms of numbers of firms, with some 81% of firms owning 10 vehicles or less. The position of the owner driver, the one vehicle firm is also still obviously important.

It can be assumed that the total fleet sizes represented in each year in the Applications and Decisions represent a good sample of the industry in that year, some two to three hundred firms appearing in any one listing. If that is accepted then the profile of the fleet on a year to year basis can be seen from those applications. Exhibit 33, summarizes this year to year progression.

It is of interest to note that there has been a trend towards larger fleets in the region, bearing in mind that the sample covers only those firms still in existence and indeed those growing. With this caveat it can still be argued that the position of the small, 1-5 vehicle, organization declined over the period albeit only gently, from about 60% of the fleet in 1978 to around 53 % towards the end of the licence cycle. The medium to large fleets, those with 11 to 20 vehicle exhibit a small but steady increase. The very large fleets probably remained stationary in terms of their share of the total fleet. It might be appropriate to indicate that all available information suggests that the fleets have undergone even faster growth in the medium to large categories since the mid 1980s- especially as a result of amalgamation.

# CONCENTRATION

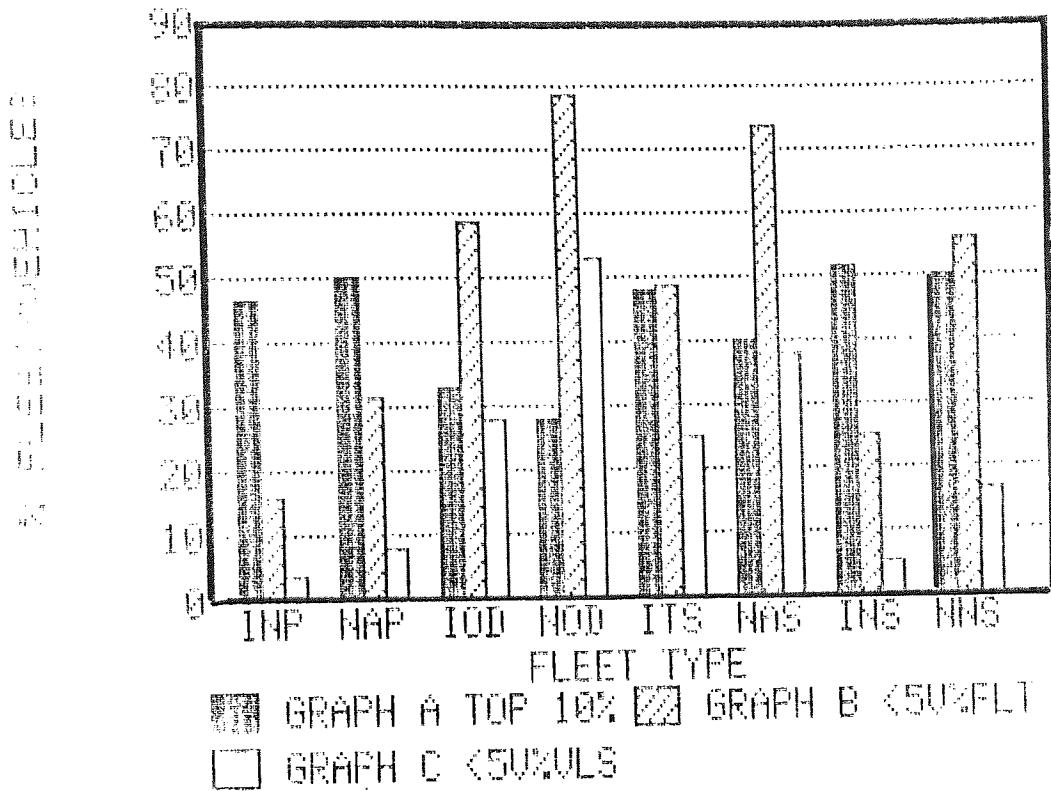


Exhibit 34

To illustrate the levels of concentration in the various types of fleets within the growth sector of the West Midlands Fleet.

Source: Research Data

## CONCENTRATION.

Although it is of some interest to note the gentle but continuous movement towards greater number of larger fleets, any subdivision of the fleet by numbers of organizations gives a very false picture of the underlying concentration of power in the transport industry of the region.

Exhibit 34, illustrates this important point. Graph A shows the percentage of vehicles owned by the largest 10% of organizations within the subdivisions of the fleet, graph B the percentage of firm numbers within the 5 vehicles and less category and graph C illustrates the percentage of vehicles of the appropriate total fleet controlled by these smaller organizations.

A slightly more detailed discussion of Exhibit 34, may exemplify what is an important point. The WAP fleet represents all those organizations which have some form of limited liability structure. Within this fleet, the largest 10% of firms control about 50% of all vehicles whereas the hauliers operating fleets with 5 or fewer vehicles control around 5% of vehicles, even although they represent some 15% or so of organizations. In the WOD fleet, the National Owner Drivers, the position is somewhat changed. The smaller organization account for nearly 80% by number of organizations and about 53% of the vehicles in this fleet. Even here however, the largest organizations have considerable power since they own some 28% of all vehicles.

The small fleets would obviously present a fragmented front to the buyer of their services, whereas the larger firms even in this market structure could still wield considerable market strength. When the division of the fleet into symbion and non symbion fleets is examined the situation is of greater interest.

#### **SYMBION FLEETS.**

In the NAS fleet, that is those organizations holding National Standard "O" Licences and falling within the symbionic classification already discussed, the balance of power in terms of vehicle ownership is evenly divided. The largest organizations controlling 40% of vehicles and the smaller hauliers some 38%. As it would be expected, in terms of numbers of organizations, the small companies are dominant, around 72% of the total. It is suggested that this is as a result of the nature of the symbionic relationship. In small firms it was discovered that a significant proportion of the founders, and or owners had had some close relationship with the type of firm and traffics which formed their main trade. This tended to lead to a very close relationship with their major customer, often as already mentioned taking the form of locating the operating base at the premises of the principal source of business.

This practice was especially common in sectors such as the movement of aggregates, especially ready mixed concrete. Even a very cursory examination of the lorries moving on the region's

roads will indicate a good number of such vehicles in the liveries of the major suppliers of this vital building material. The practice in the industry however is not to employ drivers but owner drivers. The driver enters into a contract with the supplier of the "Mix" which includes a financial arrangement for the purchase of the vehicle, and a " guaranteed" supply of destinations to run to. The owner driver is effectively tied into the parent organization and frequently locates his vehicle/vehicles at the place of business of the main supplier. A very similar arrangement was found to exist in certain of the food distribution sectors, especially in temperature controlled operations.

#### **SUPPLIER OPERATOR ADVANTAGES.**

The advantage to the operators is obvious, primarily a confirmed market. The main customer secures all the benefits of his own fleet without the problems of its management- in effect a dedicated fleet. It is of interest to note that many of the contract hire companies covered in later field work, pointed to these relationships as producing adverse effects on the industry. The symbion firms were performing tasks the contract hire or dedicated fleets might very well be attracted to, but because of the large numbers of owner drivers available, the outside organizations maintained that corner cutting, and sometimes illegal operations resulted in prices well below the levels they would find sustainable. This may be as it may, but such

# FLEET ACTIVITY TOTAL

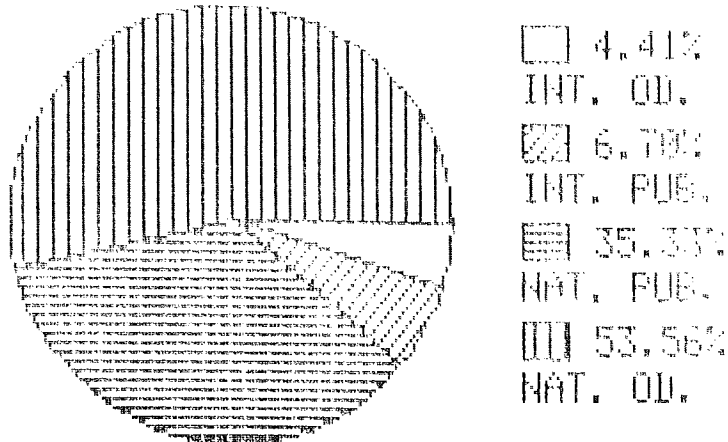


Exhibit 35

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by firm type.

Source: Research Data

# FLEET ACTIVITY TOTAL

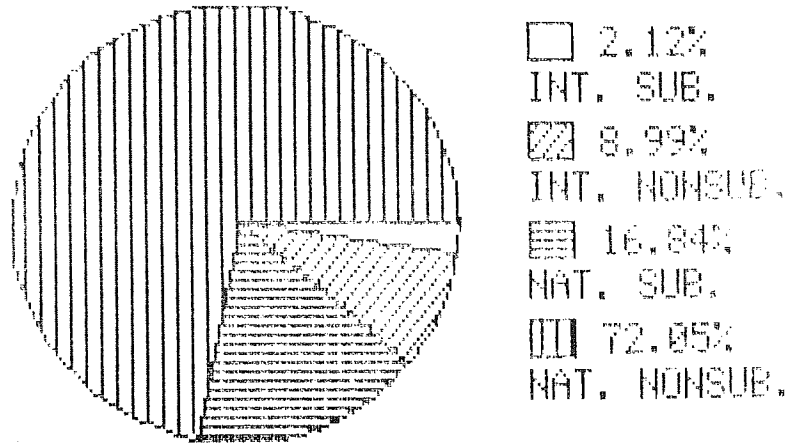


Exhibit 36

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by activity type.

Source: Research Data

relationships obviously allow the small hauliers an opportunity to conduct a great deal of business.

Contrast this position with the NNS fleet. This is the National Non Symbion fleet, here the smaller firms represent about 55% of all organizations yet control only around 15% of vehicles, the 10% largest companies account for 50% of all vehicles.

It is reasonable to hold that Exhibit 34, illustrate some interesting contrasts. The principal questions it raised for the project once again centred around the reasons why these small numbers of large organizations were so effective when large numbers of hauliers operating in the same relatively small geographical and industrial region were much less so.

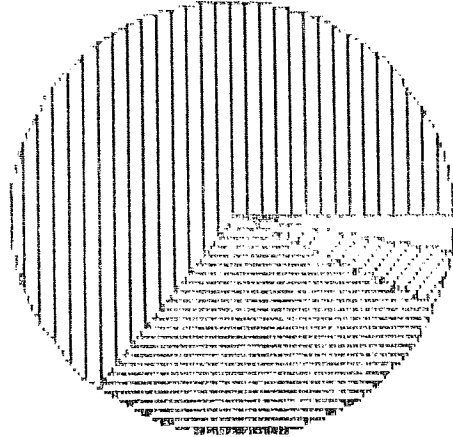
#### **ACTIVITY PATTERNS.**

The degree of power concentrated within the largest fleets was of prime interest for the study, but it was also of interest to determine which section of the fleets showed most activity in terms of the numbers of changes to the fleet. It was postulated that those sectors which showed most activity would be those where most growth , either negative or positive was taking place.

Exhibit 35, and 36, illustrate the growth activity for the two major subdivisions of the fleet, namely by organizational type and symbion or non symbion activity. It can be seen that in



# FLEET ACTIVITY 1978 1.



□ 2.49%  
INT. OD.

▨ 4.27%  
INT. PUB.

▤ 28.93%  
INT. PUB.

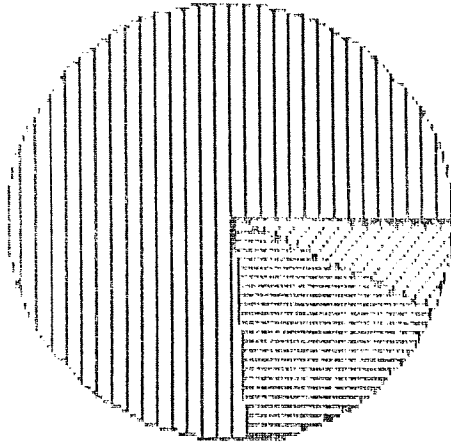
▧ 64.41%  
NAT. OD.

## Exhibit 37

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year and type of haulier.

Source: Research Data

# FLEET ACTIVITY 1978 2.



□ 8%  
INT. SUB.  
▨ 6.76%  
INT. NONSUB.  
▤ 17.44%  
NAT. SUB.  
▧ 75.80%  
NAT. NONSUB.

Exhibit 38

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year and type of haulier.

Source: Research Data

# FLEET ACTIVITY 1979 1.

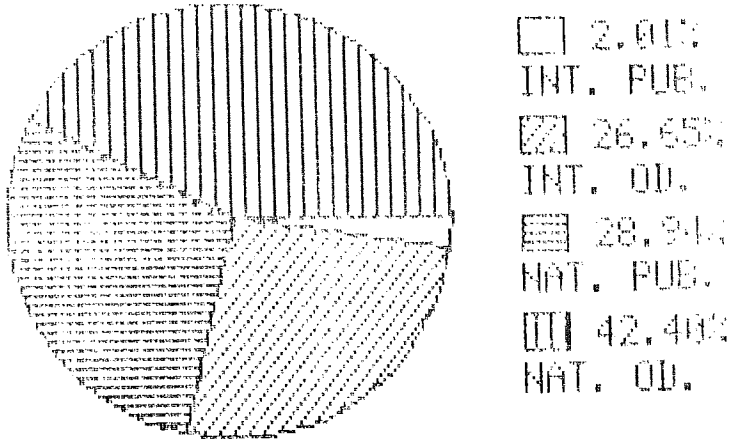
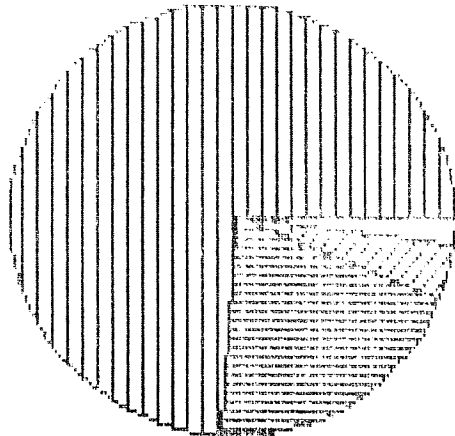


Exhibit 39

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year and type of haulier.

Source: Research Data

# FLEET ACTIVITY 1979 2.



□ 1.8%  
INT. SUB.  
▨ 4.15%  
INT. NONSUB.  
▧ 2%  
NAT. SUB.  
▩ 73.9%  
NAT. NONSUB.

## Exhibit 40

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year and type of haulier.

Source: Research Data

# FLEET ACTIVITY 1980 1.

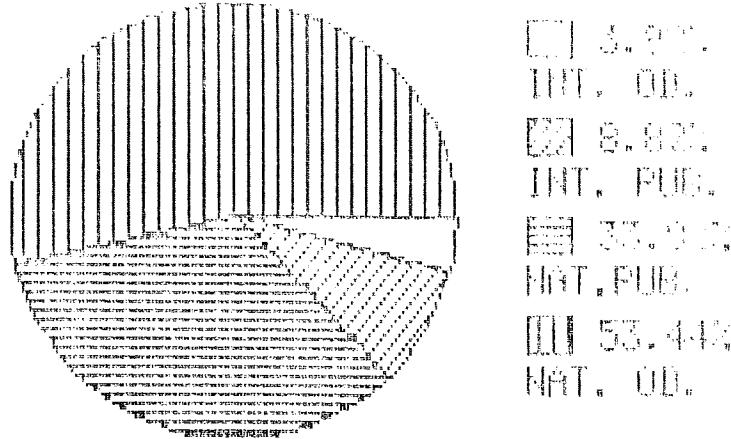


Exhibit 41

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year and type of haulier.

Source: Research Data

# FLEET ACTIVITY 1980 2.

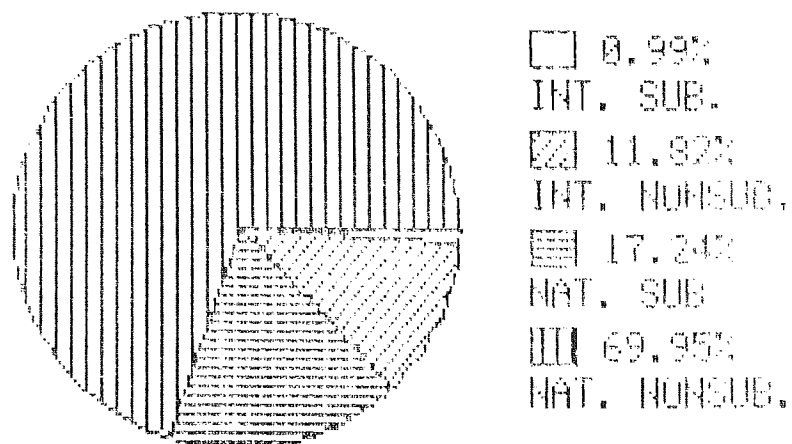
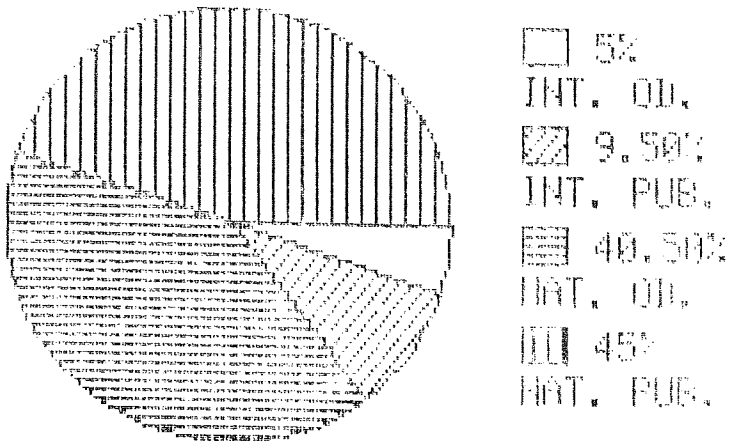


Exhibit 42

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year and type of haulier.

Source: Research Data

# FLEET ACTIVITY 1981 1.

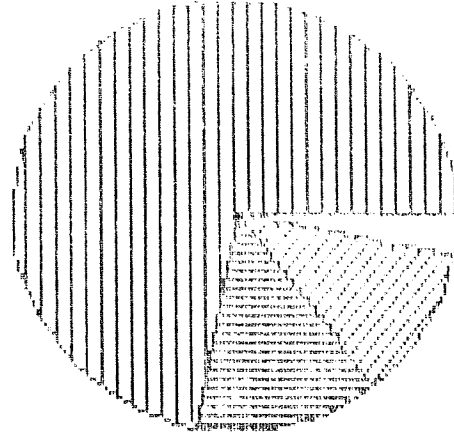


## Exhibit 43

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year and type of haulier.

Source: Research Data

# FLEET ACTIVITY 1981 2.



|                    |       |              |
|--------------------|-------|--------------|
| [Vertical Lines]   | 72%   | NAT. HONSUB. |
| [Horizontal Lines] | 13.5% | NAT. SUB.    |
| [Diagonal Lines]   | 11.5% | INT. HONSUB. |
| [Grid Pattern]     | 3%    | INT. SUB.    |

## Exhibit 44

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year and type of haulier.

Source: Research Data



# FLEET ACTIVITY 1982 1.

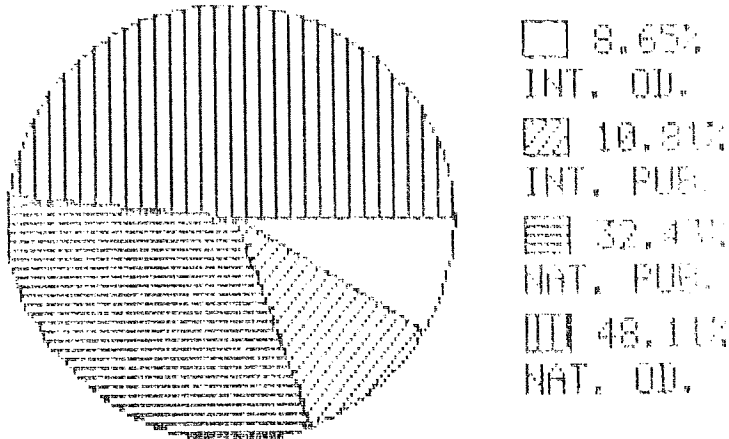


Exhibit 45

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year and type of haulier.

Source: Research Data

# FLEET ACTIVITY 1982 2.

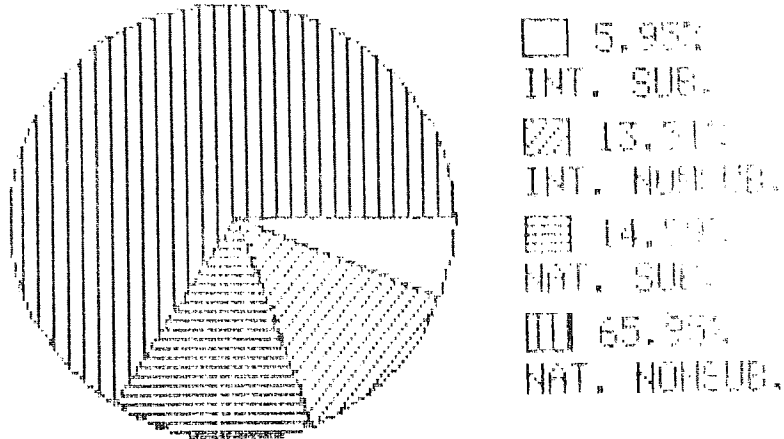


Exhibit 46

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year and type of haulier.

Source: Research Data

|           | 1978    | 1979    | 1980    | 1981    | 1982    |
|-----------|---------|---------|---------|---------|---------|
| Structure | NO 64%  | NO 42%  | NO 53%  | NP 45%  | NO 48%  |
| Function  | NNS 76% | NNS 73% | NNS 70% | NNS 72% | NNS 66% |

NO = National Owner Driver

NP = National Limited Company

NNS= National Non Symbion/Non Sub Contractor

% = Percentage share of variations

#### Exhibit 47

To show the most active type of fleets in the growth sector

Source: Research Data

percentage terms by far and away most activity occurs in the national licence sector, this is as expected since the number of companies involved in international traffics is comparatively small. The division between symbion and non symbion activity also follows the relationship which would be expected from the total numbers involved.

As would also be expected this general pattern is repeated over the period of the licence cycle. Exhibit 37, to 47, illustrate this. One point of interest can be seen in 1981, where the normally dominant position of the owner driver sector is usurped by the national limited liability sector. This being due perhaps to the start of the revival of the professional sector. The limited liability sector probably attracting more activity because the own account operators were seeking larger hauliers to carry their goods. It would usually be expected that the owner driver sector would be most prominent in terms of activity within the fleet. This is the very area where entry is easiest, barriers to entry being very low. At the same time it is the very sector which punishes inefficiency most severely. Many pressures can be brought to bear on the small organization, and if effective financial procedures are not followed, the firm can run into difficulties very rapidly. These points will be discussed in greater depth later.

# FLEET ACTIVITY 1978

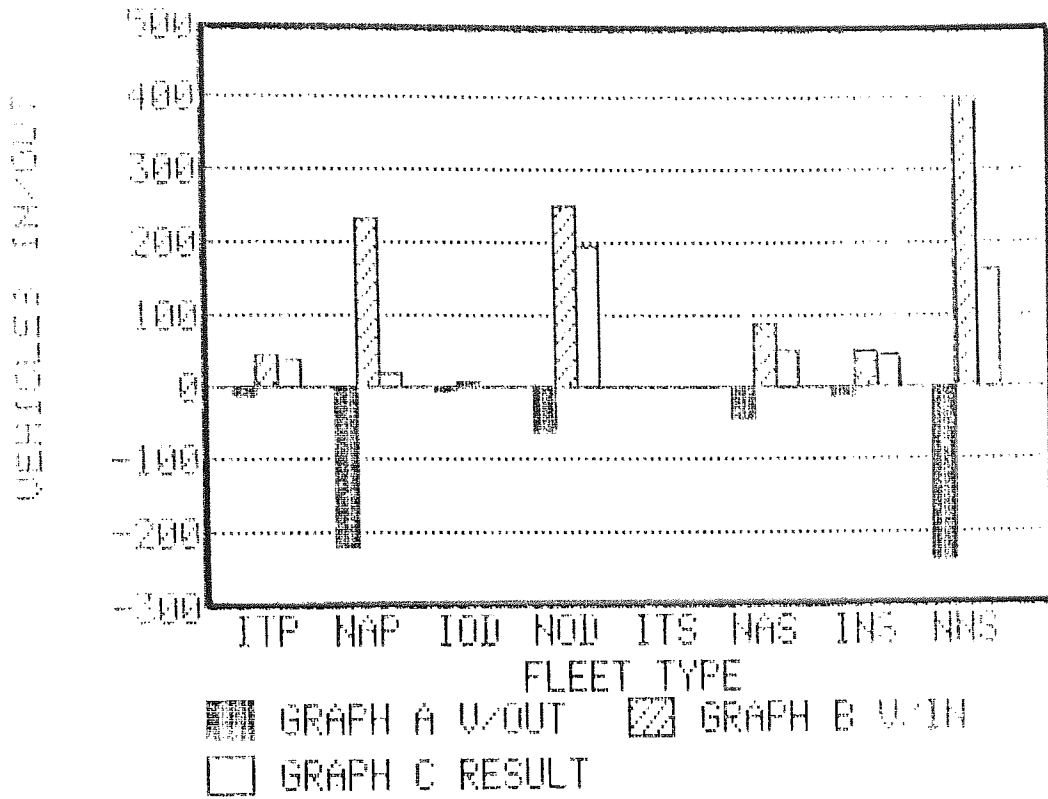


Exhibit 48

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year, type of haulier and numbers of vehicles involved.

Source: Research Data

# FLEET ACTIVITY 1979

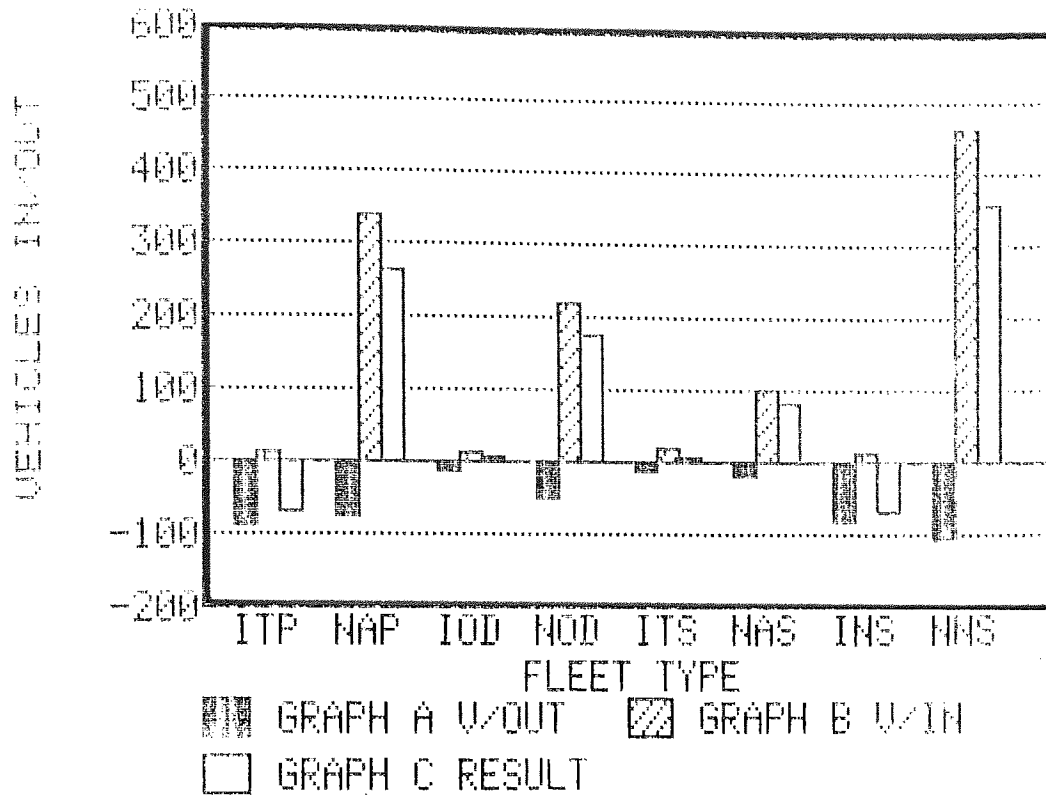
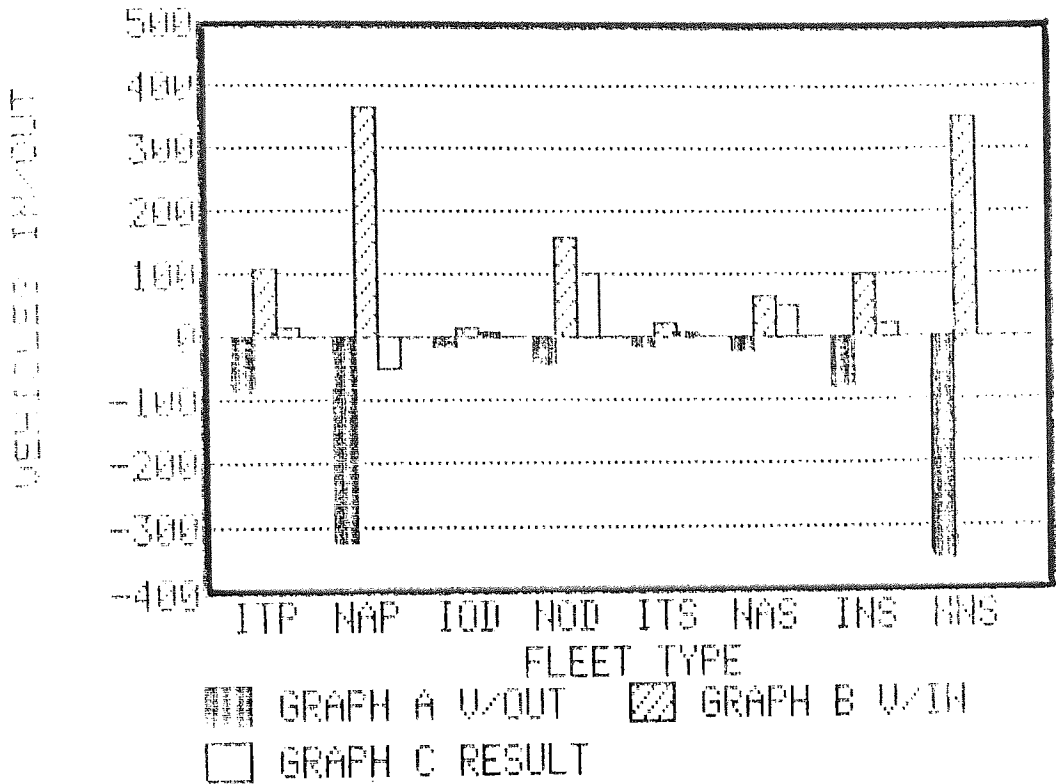


Exhibit 49

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year, type of haulier and numbers of vehicles involved.

Source: Research Data

# FLEET ACTIVITY 1980



## Exhibit 50

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year, type of haulier and numbers of vehicles involved.

Source: Research Data

# FLEET ACTIVITY 1981

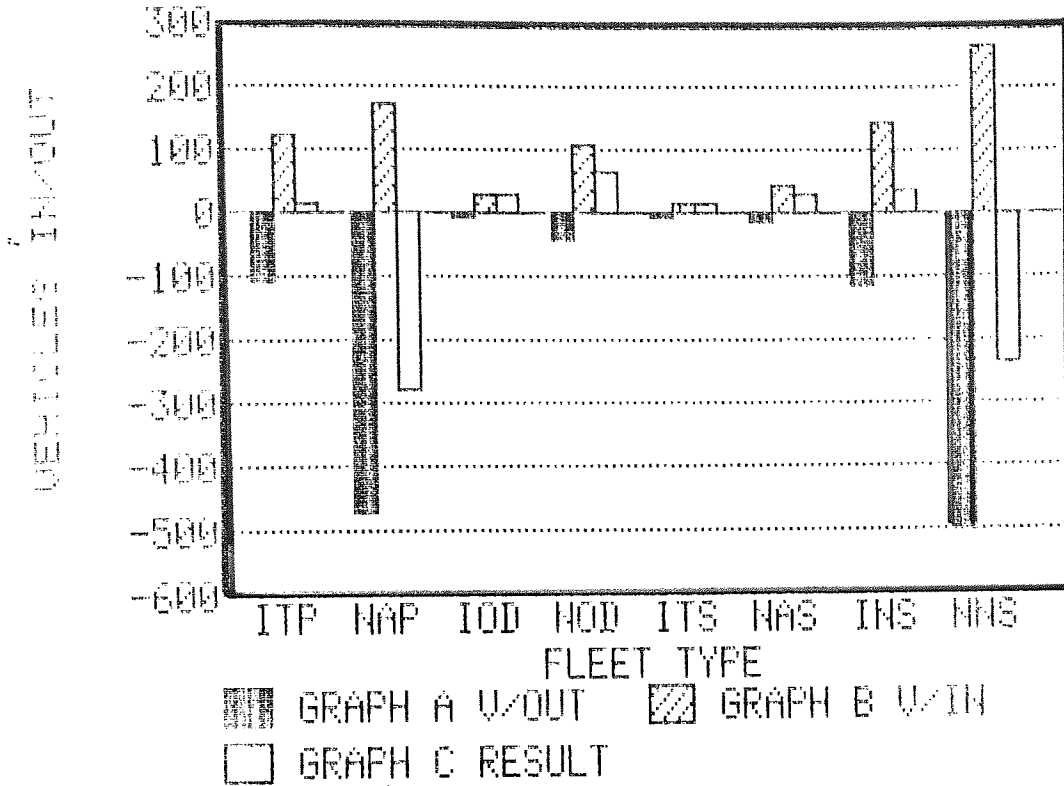


Exhibit 51

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year, type of haulier and numbers of vehicles involved.

Source: Research Data



# FLEET ACTIVITY 1982

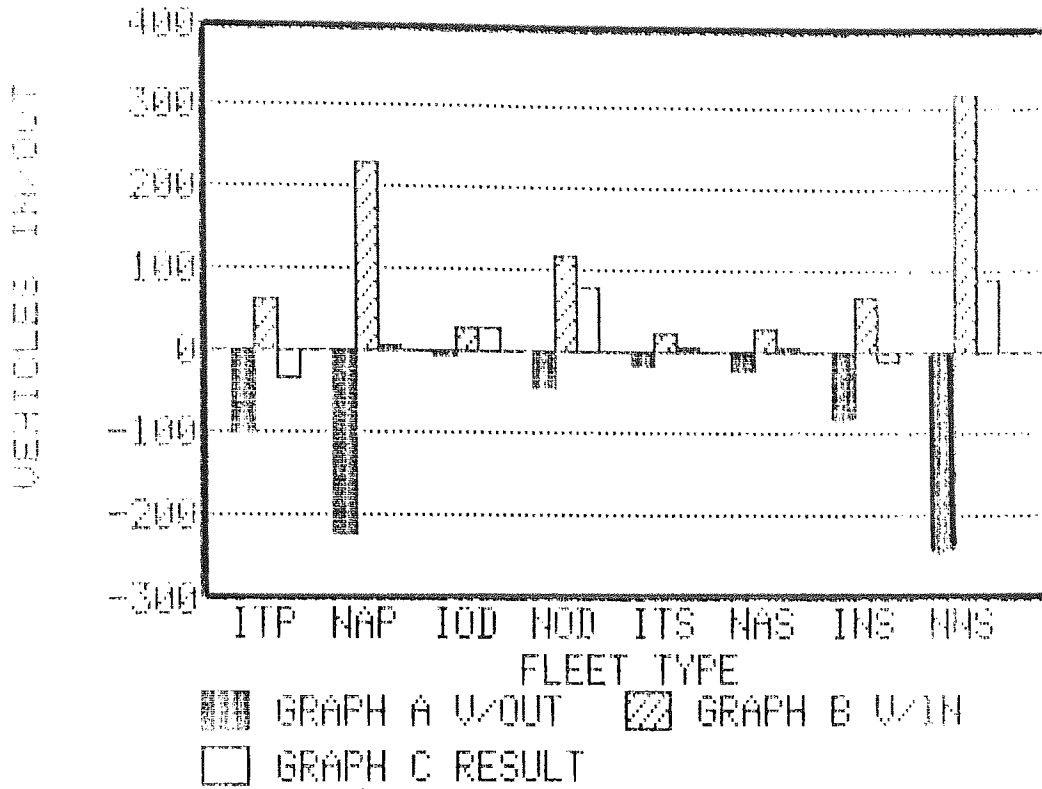


Exhibit 52

To illustrate the levels of activity in the growth sector of the West Midlands Fleet by year, type of haulier and numbers of vehicles involved.

Source: Research Data

## VEHICLE MOVEMENTS.

A more accurate picture of the importance of the rates of activity can be seen when the numbers of vehicles involved, as opposed to simply the frequency of change is taken into account. Exhibit 48, to Exhibit 52, illustrate the state of activity within the fleet in terms of vehicle movements.

The most important information to be gleaned from these charts is that although a great deal of movement in vehicle numbers did take place over the licence cycle, the end result was normally to leave the total fleet with a positive balance. That is there is a normal situation of success and failure, but the demand for transport is such that some market opportunity usually exists for those firms flexible enough in their management approach to take advantage of it.

As can be seen in for example 1978, all fleet types experienced egress of vehicles with the major share of activity being in the NAP fleet. When relationships are investigated, most exits appear in the non subcontractor/nonsymbion sector. This is to be expected as those firms not tied to particular customers might be actively searching around for alternative business, as some of their demands decrease. At the same time the same element of freedom would allow firms in this sector to accommodate the move away from own account transport typified in Exhibit 31. Note that when the fleet is separated on the basis of relationships, the

weight of new vehicles entering the industry fall heavily in favour of the non symbion segment.

Exhibits 49 to 51, cover the period 1979-81 and the general picture of Exhibit 31 is again followed, with of course variations showing the areas where most activity was taking place. In 1979 the greatest movement out of own account movements occurred. Both the NAP and the NOD fleets experienced significant inflows of vehicles to take advantage of this switch of method of operation. It should also be noted that there were still at that time unsuccessful firms which were experiencing a reduction in their fleets. This can be seen by the outflow data for all fleets in the exhibits.

Of more import is to observe that although the national symbion sector experienced a healthy net increase in its fleet, the greatest by far influx was in the national non symbion sector. The NAP and NOD fleet will contain both symbion and non symbion firms, when filtered to expose these the greatest growth appears in the NNS area, an area which of course will contain limited liability and owner drive organizations.

It is reasonable to postulate therefore, that non symbion hauliers have some advantages over those firms which form very close ties with their major customer.

## THE INTERNATIONAL FLEET.

Contrast the position of the national fleets in 1979 with that of the internationals. The ITP fleet, that is those holding international licences, and being limited liability organization, experienced a net outflow of vehicles , whereas the IOD that is those owner drivers with an international licence actually obtained a net inflow, small it is true but never the less an increase in the fleet. When this situation is translated into symbion and non symbion classifications, the situation remains unchanged, that is , in the international fleet in 1979 those firms with a close relationship with their major customer achieved security whereas those engaged in the open market place experienced the most difficulty, a situation in contrast with the position in the national operations only fleet.

It could be said that this situation was influenced by the changes which were taking place in the home market and were not reflected in the international field. That is the switch away from own account operations to new forms of transport and distribution. This allowed those professional hauliers who were capable of doing so, to turn to this new traffic. In the international markets however different conditions prevailed. The general run down in economic activity affected the non symbion firms most. If a particular manufacturer was experiencing a decline in the demand for his goods, the obvious path for him was to reduce his dependence on a series of hauliers and to concentrate his reduced

traffics with that haulier he had most experience with. A path of course which allowed him to concentrate on the haulier over whom he had most power. To reinforce this view, it should be noted that in 1978 the international symbion fleet did not appear at all in the vehicle movement tables.

#### NATIONAL TRENDS.

It is interesting to note from reference to Exhibit 26, that the national position did not appear to reflect these movements in 1979. There are a number of ways of explaining this. It could have been that the own account operations temporarily increased the utilization of their remaining vehicles and carried more goods in them, or that the trend was initiated in the West Midlands and did not filter out to the national fleet until later, or as is the most likely explanation the 1979 figures constructed for the project are closer to events, and the trends in them were not reflect in nationally collated data until the following and subsequent years.

In 1980 a slight variation can be discerned, with substantial inflows and outflows of vehicles in all fleets. In this year the fortunes of the symbion fleets look more healthy with an obvious net increase in the size of the fleet. The non symbion fleet showing an overall increase of 2 vehicles, too small in fact to register on the chart.

It must be remembered of course, that within these patterns there were firms which were growing strongly. It is an obvious comment, but movements were not firm symmetrical, that is although the overall size of the fleet in the NNS sector may have remained relatively stable in 1980, many firms would have reduced their operations while others would have increased theirs. 1981 saw a substantial net outflow of vehicles. This egress being confined to the NAP and NNS fleets. This was the time when the West Midlands Fleet had absorbed the general slow down in the demand for transport, but note that within these two fleet sectors there was even at that time, a substantial inflow of vehicles.

#### **RECOVERY.**

1982 seen the start of a period of recovery in the fleet which has continued to the present time (1988). In net terms the owner drivers appeared to have fared best, this sector, with the smallest scale of operating unit, is naturally the first to respond to any upswing in demand for transport, the non symbion area again being the one which apparently captured the greatest share of any upswing.

Two important points must be made. In the first instance the general level of output in the region did not recover at this time, indeed economic output continued to decline relative to the rest of the country for some time. Secondly, the non professional sector did not exhibit the recovery apparent in the hire or reward

segment of the industry. It is postulated that what was occurring was the switch in transport demand to new methods of operations, and the introduction of new services which a more effective industrial base, searching for more cost effective methods of operation was prepared to utilize.

## CHAPTER 28 SOME GENERAL CONSIDERATIONS.

Some general considerations concerning relationships can be put forward at this stage. In the first instance, a symbion or very close sub-contractor relationship appears to afford some degree of security. The haulier by definition develops a very close working liaison with his main customer which becomes finely attuned to the needs and demands of the major source of business. At the same time examination of the size profile of such firms indicates that they are normally, although not invariably, smaller scale operations. Reference to the Condscriptive Statistics included with the loose bound computer data will confirm this statement. There is therefore a need for most consumers of transport to employ the services of other hauliers in addition to those who have developed a symbiotic relationship with them. The advantage to the haulier arises when the host organization experiences a decline in the demand for its products. As a consequence their overall demand for transport also reduces, but since some output will be produced, unless the host goes out of business, then the symbion firm might very well experience an increase in demand as the host's range of hauliers employed is rationalised. This scheme of events has been discussed above.



## PROBLEMS AND ADVANTAGES.

The difficulty for the haulier is that a basic element of freedom has been sacrificed, and he becomes locked into the pattern of growth and contraction of the host firm. The haulier cannot decide to move into other traffics if he perceives a turndown in his main area, since unless he co-operates fully with his landlord, who also happens to be his main customer, he might very well lose his operating base. In the same way, the host if faced with difficult trading conditions may indeed be happy to divert more and more traffic to his resident haulier, but he will also be very aware both of the hold he has over the premises and the negotiating power on rates which increased usage may confer upon him. This is especially so if the trader is subject to intense price competition, and although the field work indicates later that price is not every thing, it was invariably considered important.

By extension of this power relationship it can be seen that if new markets emerge, then the symbion firm would face much greater difficulty in entering them- unless of course his host organization was one of the participants in the new modes of trading. In such a combination of circumstances, the symbion firm might very well find itself at the leading edge of developments in changes fuelled by their markets. It must be said that such opportunities although encountered, depend on the symbion firm being capable financially and managerially of exploiting them.

This combination was rare, and in the Chapter dealing with "PATTERNS OF CHANGE IN THE WEST MIDLANDS ROAD TRANSPORT INDUSTRY" it is postulated that a new breed of symbion firms emerged, the large scale scientifically managed third party distributors and contract hire organizations. These hauliers are just as locked into their customers as the owner driver, but operate on a vastly greater scale from their own premises and usually service more than one customer.

#### SYMBION DILEMMA.

The most crucial problem for the symbion firm, be it one of the smaller old type or one of the newer specialist companies, is the same. If their host is growing so will they, if the host crashes they are faced with great difficulties. In the case of the smaller firm they will almost certainly go out of business with the host, the larger organization may be able to slice some custom from elsewhere but could find this very problematic. A classic example has been provided in August 1988, by the demise of Adams Distribution Services in the Midlands area with a loss of of some 280 jobs, the reasons given by management being the increasing use by firms such as Sainsbury of their own distribution network. In effect their own third party operated systems. In the same manner at the same time, Harris Transport of Coventry shed about 120 jobs because its host company Hariss Stores exited the market, in fact, this was the result of a takeover and subsequent rationalization of distribution networks. The lesson is clear

symbion relationships can have advantages, but there are also dangers.

#### **THE FREE HAULIER.**

The free haulier is of course, only capable of entering new markets and introducing new methods of trading and operation, if the management is capable of delivering the package of skills and drive which are required. An examination of Exhibits 48 to 52, show that many in this sector were not capable of so doing. Very large numbers of vehicles can be seen to be being dropped from this fleet sector at all periods of the licence cycle. At the same time, there is also ample evidence of new vehicles entering the fleet, thus indicating that some at least of the hauliers concerned were adapting, were introducing new techniques of trading and operations, were in short exploiting the freedom which they had to respond to changes in the market.

#### **SOME BASIC APPRAISALS.**

After the initial investigation of the basic structure of the West Midlands Fleet, some basic initial hypothesis could be appraised. These were not the core of the study, but peripheral areas of interest which suggested themselves either before the sensitizing study or during it.

## LOCATION AND SIZE.

It has already been pointed out that a very large proportion of the tonnes of freight moved in this country moves on journeys of 25 miles or less. This can be taken to indicate that many hauliers pick up a significant proportion of their traffics from their immediate localities. In the course of early discussions with transport managers it became apparent that certain sectors of the industry had their own customs of the trade. Anecdotal evidence suggested that terms of doing business varied from traffic to traffic, sector to sector. One traffic appeared to depend very much on "on the spot" over the telephone contracting, other areas gave the impression of protracted negotiations being involved.

At the earliest stages of the investigation it was postulated that a variation in the terms of trade might so affect the ability of a manager within that sector to control his own vehicles that decisions concerning operations were effectively taken from his hands. This in turn was seen as perhaps significantly affecting the ability of his organization to succeed.

It was decided to test this proposition in terms of location, implying pick up of local traffics, with the type of industry in the area, with the size profile of transport firms in that locality. Bayliss 1971 *ibid.* had already tested a slightly similar proposition, namely that a rural or inner city location might influence growth and success. In that test no attempt was made

to relate a range of locations, or any provision included to relate industry type to size patterns.

#### THE APPROACH ADOPTED.

A decision was made on a two tiered approach. In the first instance all industrially rated land in the West Midlands was located on a standard Cartesian map of the area. It was assumed that like industries tended to congregate in specific areas. Secondly all transport organizations in the licence cycle, including those exhibiting growth and those who were either stagnant or were new entrants, were identified by their post codes. In a very small minority of examples this was not possible as their entry in Applications And Decisions sometimes included addresses not in the standard Post Office sources employed to provide codes. This was usually due to urban clearance sites being designated small industrial estates, but not making the same transition in the post code volumes.

It was hypothesised that since most traffics were picked up locally, and if similar trades employed similar trade practices, and if such conditions had any effect on the size structures of transport firms in those sectors then transport firms in particular geographical areas would show common size profiles.

It was proposed therefore, that an initial screen be run to find by inspection if such a clustering occurred within the West

Midlands Fleet. The Null Hypothesis being that transport firms would be seen to be concentrated in specific postal code areas and within those area exhibit a similar size profile. This indicating that practices of the trade in those area had a significant effect on management practices within the transport industry in the districts concerned. The Alternative Hypothesis being that no such clustering existed and size profiles depended on the internal management of the haulier.

The testing of this hypothesis was a little unusual. It is normal to formulate hypotheses, choose a sample and a level of probability of an error occurring, select a test statistic, decide what the evidence must show in order to support or reject the basic hypothesis, take a sample and calculate the test statistic, and finally make a decision. On this occasion the entire population in question was available, and the decision to reject or accept could be resolved by visual inspection of the data.

All data were eventually collected and a Sort routine initiated on the Coventry Polytechnic Harris System 800. The output from this run is presented in the loose bound computer material which is attached. As can be verified by inspection no significant clustering exists. In the small number of occasions where it does firms of all sizes can be detected. Therefore the Null hypothesis was rejected and the Alternative Hypothesis accepted. This, what in effect was a "blind alley" for the research served to confirm the belief that the answer to the core problem would be best

sought in the portfolio of approaches which individual hauliers brought to bear on the problems facing them.

#### **INTERNATIONAL AND NATIONAL OPERATORS.**

The next area which attracted attention was whether the advantages which the literature assigned to those firms engaged in long haul operations resulted in significantly greater firm size profiles, and or higher growth rates.

The advantage of this study over previous ones, was that the introduction of the Standard Licence with International Operations allowed the segmentation of the fleet into those carrying on international operations and those concentrating on national operations only, this point has already been discussed. The effect of the classification was that it could be argued that those hauliers with international operations on average ran longer hauls than those whose business was mainly national. If there was an obvious difference in their growth rates then the proposition that longer hauls brought with them many advantages might be taken as valid. If this was the case then success in the industry might be strongly linked to patterns of haul length, rather than management policy portfolios.

## TESTING THE HYPOTHESIS.

The six step procedure adopted to test this hypothesis is listed below;

A null and alternative hypothesis were formulated.

A sample and a risk factor,  $\alpha$ , were chosen. The factor  $\alpha$  representing the probability of a type 1 error.

A test statistic based on the sample was chosen.

A decision on what the evidence must show to support or disprove the hypothesis was made.

The sample was made and the test statistic calculated.

The decision rule was applied.

Taking each step in turn. The problem to be investigated was whether or not those fleets engaged in international operations showed a higher success rate than those engaged solely in national operations. The obvious measure appeared to be rates of growth based on the yard stick already selected to indicate growth and success, namely the number of vehicles in the firm's fleet. A number of situations presented themselves. The average growth rate for the international fleets minus that of the national fleets would equal zero, that is the growth rates were the same. The average growth rates for the international operators minus that of the national ones would be greater than unity, that is the international growth rate was greater, or the growth rate of international hauliers minus that of national organizations



would be less than unity, indicating that the national operators had a growth rate greater than international firms.

The six step procedure for hypothesis testing as described above after Christensen 1977 was applied to this position.

The three possible situations can be formulated as

$H_0: u_1 - u_2 = \delta$  versus  $H_a: u_1 - u_2 \neq \delta$

$H_0: u_1 - u_2 \leq \delta$  versus  $H_a: u_1 - u_2 > \delta$

$H_0: u_1 - u_2 \geq \delta$  versus  $H_a: u_1 - u_2 < \delta$

Where  $u_1$  = The mean for the growth rate for a sample of international operations firms.

$u_2$  = The mean for a sample of national hauliers.

$H_0$  = The null hypothesis.

$H_a$  = The alternative hypothesis.

$\delta$  = Any specified constant.

For the purposes of the example, the project was interested in ascertaining whether or not on the basis of a sample, the international fleet could be said to have a higher mean growth rate than that of the national fleet. The null hypothesis selected therefore was that the growth mean of the international fleet minus that of the national firms was not less than unity, if it could be shown that it was not less than unity, then the alternative hypothesis, that is was greater than unity would be accepted, thus:

1.  $H_0: u_1 - u_2 \leq 1$ ; versus  $H_a: u_1 - u_2 > 1$ .
2. Sample  $n_1 = 12$ . The active international fleet 1978.

$n_2 = 81$ . The active national fleet 1978.

Let  $\alpha = .005$  The risk of a type one error.

3. Let the test statistic be  $t = (y_1 - y_2) - \delta \div s_{y_1 - y_2}$ . Where;

$y_1$  = Mean of sample 1.

$y_2$  = Mean of sample 2.

$s$  = Standard error. See Christensen 1977 p. 411

4. On the basis of  $\alpha$  decide decision rule: reject  $H_0$  if  $t > t_{.005}$  on the basis of standard tables for the  $t$  distribution with a  $df = n_1 + n_2 - 2$  or 91,  $t_{.005} = 2.576$ . Therefore if  $t > 2.576$  we reject  $H_0$ .

$$5. t = (y_1 - y_2) - 1 \div s_{y_1 - y_2} = (y_1 - y_2) - 1 \div [s^2_p (1/n_1 + 1/n_2)]^{1/2}$$

Where  $s^2_p$  = estimate of pooled variance for the two populations.

When  $s^2_p = (n_1 - 1)s^2_{/1} + (n_2 - 1)s^2_{/2} \div n_1 + n_2 - 2$ ; where  $s^2_{/1}$  is variance of  $n_1$  and  $s^2_{/2}$  is variance of  $n_2$ .  $\therefore$

$$s^2_p = (11)4642 + (80)2783 \div 91 = 3007.7$$

$$t = (39 - 23) - 1 \div [3007.7 (.0833 + .0123)]^{1/2} = .8388$$

$\therefore t < t_\alpha \therefore$  we accept the null hypothesis that the mean of the international fleet - the mean of the national fleet is less than unity. The alternative hypothesis is rejected and it might therefore be stated that the average mean growth for the international fleet is less than that for the national fleet. In other words the international fleet would APPEAR to have a lesser mean growth rate than the national fleet. If the same calculation is carried out for 1980, the  $t$  value becomes  $-1.564$  which again is less than the  $\alpha$  value so the same claim could be made, notice that the ITP mean value in the 1980 sample was 16% as opposed to the NAP one of 42%.

| FLEET<br>TYPE | GROWTH<br>PRCNT. | START<br>SIZE | FINAL<br>SIZE | GROWTH<br>DIRCTN. |
|---------------|------------------|---------------|---------------|-------------------|
| ITP           | 39               | 19            | 23            | 4                 |
|               | -50#160          | 2#125         | 1#127         | -4#19             |
| WAP           | 23               | 19            | 19            | 1                 |
|               | -78#200          | 1#250         | 2#237         | -43#30            |
| IOD           | 37               | 4             | 4             | 1                 |
|               | -50#100          | 1#10          | 1#12          | -1#3              |
| NOD           | 67               | 3             | 4             | 1                 |
|               | -67#400          | 1#18          | 1#24          | -6#20             |
| ITS           | 0                | 0             | 0             | 0                 |
|               | 0                | 0             | 0             | 0                 |
| NAS           | 6                | 4             | 5             | 1                 |
|               | -78#400          | 1#32          | 1#21          | -25#20            |
| INS           | 38               | 12            | 14            | 3                 |
|               | -50#200          | 1#125         | 1#127         | -43#19            |
| NNS           | 48               | 9             | 9             | 1                 |
|               | -72#400          | 1#250         | 1#237         | -43#30            |

Exhibit 53 Total Cycle Activity 1978

All data except growth percentage in vehicles. Mean above range. Source research data.

| FLEET<br>TYPE | GROWTH<br>PRCNT. | START<br>SIZE | FINAL<br>SIZE | GROWTH<br>DIRCTN. |
|---------------|------------------|---------------|---------------|-------------------|
| ITP           | 9                | 33            | 23            | -10               |
|               | -55±60           | 5±150         | 8±79          | -71±10            |
| NAP           | 44               | 9             | 12            | 3                 |
|               | -70±300          | 1±45          | 1±63          | -16±27            |
| IOD           | 31               | 6             | 7             | 1                 |
|               | -50±200          | 1±12          | 1±17          | -4±6              |
| NOD           | 71               | 3             | 4             | 1                 |
|               | -83±400          | 1±12          | 1±19          | -7±10             |
| ITS           | 65               | 10            | 12            | 2                 |
|               | -55±200          | 2±22          | 6±28          | -12±10            |
| NAS           | 80               | 4             | 6             | 2                 |
|               | -67±300          | 1±45          | 1±63          | -7±18             |
| INS           | 2                | 21            | 15            | -6                |
|               | -50±60           | 2±150         | 1±79          | -71±6             |
| NNS           | 55               | 6             | 8             | 2                 |
|               | -83±400          | 1±36          | 1±61          | -16±27            |

Exhibit 54 Total Cycle Activity 1979

All data except growth percentage in vehicles. Mean above range. Source research data.

| FLRET<br>TYPE | GROWTH<br>PRCNT. | START<br>SIZE | FINAL<br>SIZE | GROWTH<br>DIRCTN. |
|---------------|------------------|---------------|---------------|-------------------|
| ITP           | 16               | 13            | 14            | 1                 |
|               | -45#150          | 2#79          | 3#89          | -6#10             |
| NAP           | 42               | 24            | 23            | 1                 |
|               | -66#300          | 1#832         | 2#598         | -234#25           |
| IOD           | 48               | 4             | 5             | 1                 |
|               | -50#150          | 1#15          | 1#18          | -2#3              |
| NOD           | 59               | 3             | 4             | 1                 |
|               | -89#400          | 1#17          | 1#12          | -10#4             |
| ITS           | 100              | 4             | 7             | 3                 |
|               | 50#150           | 2#6           | 5#9           | 3#3               |
| NAS           | 75               | 4             | 6             | 2                 |
|               | -67#400          | 1#34          | 1#33          | -8#11             |
| INS           | 20               | 11            | 12            | 1                 |
|               | -50#150          | 1#79          | 1#89          | -6#10             |
| NNS           | 47               | 13            | 13            | 1                 |
|               | -89#400          | 1#832         | 1#598         | -234#25           |

Exhibit 55 Total Cycle Activity 1980

All data except growth percentage in vehicles. Mean above range. Source research data.

| FLEET<br>TYPE | GROWTH<br>PRCNT. | START<br>SIZE | FINAL<br>SIZE | GROWTH<br>DIRCTN. |
|---------------|------------------|---------------|---------------|-------------------|
| ITP           | 79               | 18            | 19            | 1                 |
|               | -81#900          | 1#80          | 3#145         | -48#65            |
| NAP           | 36               | 19            | 16            | -3                |
|               | -90#500          | 1#811         | 1#481         | -330#20           |
| IOD           | 69               | 5             | 8             | 3                 |
|               | -50#200          | 1#17          | 1#30          | -1#13             |
| NOD           | 53               | 3             | 4             | 1                 |
|               | -25#300          | 1#29          | 1#34          | -6#7              |
| ITS           | 96               | 4             | 7             | 3                 |
|               | 14#200           | 1#7           | 3#12          | 1#5               |
| NAS           | 78               | 3             | 4             | 1                 |
|               | -50#500          | 1#20          | 1#20          | -4#7              |
| INS           | 63               | 15            | 17            | 2                 |
|               | -81#900          | 1#80          | 1#145         | -48#65            |
| NHS           | 37               | 13            | 12            | -2#4              |
|               | -90#400          | 1#811         | 1#481         | -330#20           |

Exhibit 56 Total Cycle Activity 1981

All data except growth percentage in vehicles. Mean above range. Source research data.

| FLEET<br>TYPE | GROWTH<br>PRCNT. | START<br>SIZE | FINAL<br>SIZE | GROWTH<br>DIRCTN. |
|---------------|------------------|---------------|---------------|-------------------|
| ITP           | 17               | 22            | 20            | -2                |
|               | -75±130          | 2±85          | 1±55          | -35±14            |
| NAP           | 50               | 11            | 12            | 1                 |
|               | -92±1333         | 1±84          | 1±65          | -47±48            |
| IOD           | 71               | 3             | 5             | 2                 |
|               | -66±200          | 1±6           | 1±14          | -2±10             |
| NOD           | 49               | 3             | 4             | 1                 |
|               | -75±200          | 1±10          | 1±17          | -6±10             |
| ITS           | 71               | 8             | 8             | 1                 |
|               | -50±250          | 1±33          | 2±29          | -8±10             |
| NAS           | 32               | 4             | 4             | 1                 |
|               | -75±200          | 1±15          | 1±18          | -4±6              |
| IWS           | 28               | 16            | 16            | -1                |
|               | -75±133          | 1±85          | 1±55          | -35±14            |
| NNS           | 55               | 7             | 8             | 1                 |
|               | -92±1333         | 1±84          | 1±65          | -47±48            |

Exhibit 57 Total Cycle Activity 1982

All data except growth percentage in vehicles. Mean above range. Source research data.

## ALTERNATIVE APPROACH.

The above method after Christensen 1977, *ibid.* was deemed useful as fleet data were collected in the initial stages of the project. In the later stages, although similar objectives were still valid, this approach was superseded by a more simple but arguably more accurate method.

After 5 years of data on the active fleet had been gathered, it was obvious that although each year's data represents in effect a sample of the the total fleet, the entire five year folio represents the complete fleet for that cycle, therefore a comparison of the year to year statistics for a complete five year set gives a more accurate insight into what actually occurred, as opposed to an estimate of the population characteristics, which after all is what Christensen's or any other method attempts to provide.

## CYCLE PROFILES.

If an examination of the cycle profiles as described above is undertaken, then the basic hypothesis put forward could be questioned, moreover other interesting characteristics emerge. Exhibits 53 to 57, cover the usual fleet classes under review and have been extracted from the computer data enclosed in the soft binding.



Exhibit 53, shows the data for 1978. The ITP fleet shows a definite SUPERIORITY in the mean growth percentage increase in fleet size over the NAP fleet, as is also the case in 1981. This is not the case in the other three years. The respective averages over the five year cycles are 32 and 39.1978 & 1981 raise the question of the degree of reliability of the Christensen and similar approaches.

The crux of the matter is that the Christensen technique, as all statistical methods do, makes some basic assumptions about certain characteristics of the respective populations, in this example that the variance of the two total populations is the same, and that they are normally distributed. As can be seen from the computer data, the distribution of the yearly samples frequently have a high Kurtosis value and sometimes are skewed to the left, have negative skewness, and sometimes to the right, have positive skewness.

Nie, Hull, Jenkins, Steinbrenner and Bent 1975 define these properties as " ...skewness is a statistic needed to determine the degree to which a distribution of cases approximate a normal curve.....it will take on a value of zero when the distribution is a completely symmetric bell shaped curve....."Kurtosis is a measure of the relative peakedness or flatness of the curve defined by the distribution of cases. A normal distribution will have a kurtosis of zero."

Reference to the computer data shows that the relevant data for 1980 have positive values for the kurtosis measure in both cases, and also some skewness. In 1978 a small negative and small positive variation is present in kurtosis, together with similar values for skewness, an examination of the complete portfolio of the cycle shows that although some samples such as the 1978 data used above, come close to the normal distribution virtually all in some way deviate from it.

The application therefore of techniques such as those described by Christensen 1977 *ibid.* can, as already pointed out be best regarded as giving only approximate solutions. The same type of objection can be raised to many other sample based approaches. It is for this reason that greater reliance is placed on the cycle profile which it must be emphasised includes ALL active organizations in the fleets.

## CONCLUSIONS

The evidence from the licence cycle is that for the period under review the mean growth rate of the international fleet was NOT clearly greater than that for the national fleet. If it is accepted that the international fleet on average undertook longer hauls than the national fleet, then it follows that it is not clearly the case that organizations with longer average haul will reap advantages which will allow them to secure a higher mean growth rate.

## SYMBION AND NONSYMBION FLEETS

A major point of interest was whether or not the symbion fleet showed a faster growth rate than the non symbion fleet. If this were to be the case, then a major growth policy would be to establish such a relationship.

Examination of the licence cycle data will show that with the exception of 1982, the mean growth rate for the NS fleet is substantially greater than that for the NNS fleet. It would be reasonable then, to state that the NS fleet has a higher growth rate than the NNS fleet. The objective of this project is to decide the policy portfolio which would lead to greatest success, any additional information in the cycle data must also be examined.

When the mean Start Size and Final Size is looked at, it can be readily observed that the NNS fleet contains considerably larger fleets, moreover, when Growth Direction is examined, it can be seen that within the range of vehicles involved in movements the NNS fleet covers larger units. It can be concluded therefore, that although the RATE of growth in the NS fleet may be greater than that of the NNS fleet, the NNS fleet covers larger companies and larger vehicle movements. It is held therefore, that the NNS fleet will contain success portfolios of greater potency than those in the symbion fleet. Establishing a symbion relationship cannot be seen as a high success policy.

## GROWTH AND START SIZE.

It is a common proposition in the literature that start size is a significant factor in deciding growth and success rates. To attempt to test this hypothesis for the West Midlands Fleet, Pearson's Correlation Coefficient was calculated for all fleet segments for growth rates and start size, as was the Coefficient Of Determination. The second measure can be taken to indicate the amount of variance which is explained by the independent variable, in the tables it is designated "R Squared". The results can be examined in the computer data. No significant values for the coefficient of determination were found. The same conclusion results from further detailed analysis of the cycle data. It may be held therefore, that for the West Midlands Fleet start size does not appear a major factor in growth and success.

## SIZE RANGE.

As can be clearly seen from Exhibits 53 to 57, the mean start size and the mean final size of the international limited liability fleet is greater in every year bar one, than the national fleet, yet the same caveat about average growth rate exists. When attention is drawn to the range of sizes associated with both these measures, then it will be noted that in four out of the five years of the cycle the greatest sized firms are in the national fleet. The contrast is even greater if the respective non symbion fleets are examined.

## FINAL CONCLUSION.

This research therefore must question the accepted wisdom that start size is a major determinant of growth rate, and that organizations engaged in long haul operations will reap economies which will allow them to grow at faster rates than their competitors who operate chiefly on short haul work. The sources of this conflict with the "accepted wisdom" could be many. The most important are considered to be; the entire five year cycle was used in this case, the dangers of using a small number sample have been discussed above, most significantly the nature of the distribution of firm sizes could cause inaccurate results, moreover the pattern of concentration might lead to a selection of a sample too biased in favour of firm numbers, rather than share of the proportion of the fleet. All other studies used samples rather than an entire cycle. There might be factors at work in the West Midlands absent from other areas- although no evidence of this was found.

It was concluded that further explanation must be sought to account for those firms which did not conform to the conventional wisdom pattern but were, never the less, patently successful.

## CHAPTER 29 THE QUESTIONNAIRE.

As a result of the issues raised by both the desk research phase and the sensitizing study, it was decided that the final questionnaire would be best constructed on the basis of a two tiered format. This final stage was a result of the emergence of the importance of the sub-contractor factor, and the general results produced when the West Midlands data were subjected to the "conventional wisdom" criteria. If rates of growth and market success did not in fact show themselves to be linked to the expected elements, what characteristics of the road transport organization marked it out for successful growth?

As has been argued in the section on Methodology, it was felt that the answer to this question would be best discovered by utilising a semi structured interview approach to produce data which could be subsequently analysed using Principal Component Analysis. This in turn could be linked to a Cluster Analysis Programme to determine which characteristics if any, the successful companies shared.

### REASONS BEHIND FORMAT.

The survey had to produce information of two distinct types. In the first instance general data had to be produced which not only

identified the firm, but also indicated the nature of the sector it was engaged in. In conjunction with this it was desired that the initial part of the interview would produce information which would throw light on the "state of play" within the industry in areas considered to be of interest and importance. These areas were not seen as being necessarily a source of input into the Principal Component Analysis, but were viewed as contributing to the general ethos of the firm and its sector. Secondly, the questionnaire had to produce data which could be employed in the second phase of the analysis of the industry, namely the identification of the policies and procedures, the strategies and tactics which were associated with the successful firm, if indeed such a success portfolio existed.

As is the case with any questionnaire, careful thought had to be directed to the content and length of the final brief. Length was not perceived as being of critical importance. The details were to be completed during the course of a face to face interview with the relevant personnel, and it was concluded that any span of attention problems could be dealt with in the course of the interview. If the questionnaire had been conceived as relying on a mail response, then the situation would have been viewed somewhat differently. Indeed the nature of the information which was required, and the problem of postal questionnaire length were two of the reasons which determined the semi structured interview format in the first instance. The nature of Principal Component Analysis is such that a large number of questions are virtually

inevitable. The basic aim of the approach is to assess a sample on the basis of a wide ranging list of characteristics which the researcher has concluded will have significant influence on the nature of the subjects under study

#### THE FIRST TIER.

As can be seen in the questionnaire example which follows this discussion, stages one to three serve to identify the firm which produced the responses contained in each data collection. It was felt that the identification of main traffic types and patterns of operation was important. The sensitizing study indicated that the nature of the traffics which made up the bulk of a firms business could have an effect on management policies.

To give an extreme illustration, a firm engaged exclusively in the tipping sector was unlikely to find that to improve its stock control its customers initiated the introduction of information technology - on the other hand the operator might introduce IT on his own initiative to reduce administration costs. Alternatively an organization in the frozen foods sector could find customer pressure for the introduction of a wide range of innovations. In the same manner the inherent nature of operations could have similar effects. The differing needs of multi drop or single drop long haul patterns could demand a variety of management responses



Three main types of pattern were discerned in the sensitizing study. The Base- Drop- Base pattern applies when vehicles move to large volume customers, or where the customers demand the exclusive use of vehicle capacity. Such movements can be seen in household removals, tipping and some general haulage work. In this method of operation there is little scope for cost reduction through the use of better routing methods. Multi Drop working can be seen for example in the general haulage sector, the food industry, and others. In this system the vehicle leaves base and makes a number of drops, and perhaps pick ups before returning to base. In such an environment effectiveness might be increased by the use of better scheduling, cost control, and route planning. Tramping, as the name suggests, is the least structured of all the work patterns. A vehicle will leave base, proceed to A, drop a consignment, move to B to pick up another load which is transported and dropped at C, the vehicle then moves to D and so on, until it eventually returns to base. In this pattern there is the possibility of introducing planning and work methods similar to those in the multi drop situation which could improve the firms profitability and growth potential.

It is important to identify which pattern predominates in an organization's customer operations profile, as the tactics employed to improve the firms performance might be affected.

## ENVIRONMENTAL FACTORS.

The extent and complexity of legislation directed to the road transport industry has already been discussed in Division One of this Thesis.

The originators of legislation invariably protest that the regulation is intended to be of benefit to the industry. This section in the survey is designed to assess the opinion of the operators, who are after all the subject of the various Acts, whether or not the legislation is helpful, or indeed whether it contributes to higher costs and hence inefficiency within the industry.

It was also intended that this section would indicate the extent to which operators actually complied with the various regulations. It is already a well established opinion in the industry that enforcement of wide ranges of the regulations is very poor. On at least two occasions in the course of this study, Prosecuting Solicitors with Police Forces remarked that the Construction And Use Regulations were one of the most complex and least understood pieces of legislation which police at the "sharp end" had to apply. There seemed therefore a prima facie case that many regulations were either avoided or could not be effectively enforced. This section was intended to throw light on these considerations.

The above areas of interest were not the only considerations in investigating this particular aspect of the industry. If there were wide spread avoidance or other "underhand" activities in the industry, then these could have significant effects on the ability of individual firms to grow within specific sectors. The sensitizing study indicated that this might often be the case, at least in the tipping and construction areas. Anecdotal evidence at that stage suggested some or all of the following activities occurred.

#### ILLEGAL PRACTICES.

There was alleged to be widespread fraud practised with regard to diesel fuel. The government operates a differential taxation policy with regard to diesel fuel used in agricultural vehicles and machinery. One of the conditions applied to such fuel is that it should not be used in commercial vehicles, or of course be made available for re-sale. To enable Customs to keep check on the fuel it is dyed for easy identification. It was frequently stated that "those in the know" could obtain such fuel at prices significantly below the commercial fuel price, hence giving them a substantial competitive advantage. The sources were claimed to be two fold. In the first case simple straight use of the dyed fuel, this could however, be easily detected by on the road or site checks by either the Police or the Customs, and secondly processed fuel.

This second source is of some interest. Fullers Earth which has highly absorbent properties is extensively used in the manufacture of explosives and as a commercial absorbent filter. Controlled diesel fuel, that is dyed diesel, can have the dye removed by passing it through a filter of Fullers Earth, the refined product can then be passed on to the transport operator cleared of the dye, and still at a price below the commercial fuel level.

Evidence of this practice is hard to gather, but it is of interest to note that the "Times " uncovered just such a wide spread practice in Northern Ireland in 1984 with distribution to this country. The operation was on a commercial scale, and allegations are made that the same type of process is carried out extensively in agricultural areas in the United Kingdom.

Tax avoidance and the use of drivers already on Social Security payments, together with other alleged malpractices might have the effect of making the legitimate operator find himself at a significant disadvantage. This was important, as the sensitizing study indicated that such goings on were particularly important in the tipping and construction areas. This is a sector dominated by the owner driver, and one which has very few large organizations . This sector tends to have a concentration of very large buyers- the construction companies, and in conjunction with the mode size of the transport firm, this means that the buyer of the transport service can usually determine the price which will prevail in the market. Transport firms in this situation tend to be price takers.

Given the cost advantages which small scale firms can reap from the many illegal practices open to them, then it would be very difficult to see how an organized, well thought out portfolio of legal strategies would have much relevance in this area of the road transport industry.

It was for these considerations that it was felt that such a section should be included in the final questionnaire. The small average size of particular sectors might be said to be materially affected by illegal practices, or in some cases, customs of the trade, rather than by the usual economic factors. In the same manner, the absence of such practices from other sectors with larger firm size profiles might go some way to explaining why particular strategies could operate in those particular environments.

It must be pointed out at this stage, that the inclusion of this set was on the basis of the sensitizing study, and final comments on this area are to be found in the section dealing with the analysis of the survey results.

#### TECHNOLOGICAL INFLUENCES.

It was strongly hypothesised that those firms which operated in market conditions which were favourable to the use of information technology, and who actually implemented such management aids, would show greater growth and success activity than those who did

not. At the same time if as the literature and the sensitizing study indicated, that the use of IT was not as widespread in the industry as the theoreticians felt it should be, then some explanation of the reasons should be sought.

It was for these reasons that this section of the questionnaire seeks the perceptions of operating managers as to why they do, or do not employ IT. The literature would seem to indicate that even within those firms which do employ IT the majority would seem to use it in the administrative rather than the operational area. They seem to appreciate the benefits available in cutting down the amount of "administration paper" within the organization but are less effective at employing IT in the operational management of their fleet.

#### CUSTOMER INFLUENCE

In the search of the literature and through the researchers' experience of the industry itself, the opinion was formed that in a significant number of cases the pressure for the introduction of more advanced management approaches originated not from the transport firm itself but from its customers.

The quotation from Harvey 1982, which has already been used can be usefully repeated. Road transport firms he claimed " *have traditionally been poor industrial marketeers and are responsive*

to buyers demands, rather than being innovative or creative in their own right as volume sensitive activities,.....management effort tends to be concentrated on selling with a myopic concentration on price rather than added value or system efficiency .....

all the major initiatives for compatibility of handling systems, equipment, administration, data processing and unit handling have come from the purchasers of, not the providers of transport....."

If this indeed is the case, and it must be remembered that Mr. Harvey was United Kingdom Managing Director of the SPD Group, a firm with its origins in the own account sector, then the market sector the transport operator was engaged in would significantly affect his rate of introduction of high tech methods and hence also his growth/success levels.

This was felt to be worthy of further investigation, since it would seem once more to put forward the belief that the road transport industry itself was incapable of formulating a strategy portfolio for growth, and would have to rely on outside sources for the energy to drive the engine of change, success and growth.

At the same time, if the pressure for the introduction of IT had been internal in origin then this was also of interest. This was likely to be especially so if there was evidence of a knock on effect from other road transport operators. If a competitor had introduced more modern management techniques as a result of

customer pressure and another firm had felt it necessary to follow suit, then although the original initiative had come from outside the industry, such evidence would indicate that there were nevertheless competent managers within that particular sector.

Similar considerations were held to apply to the introduction of new handling methods, body systems and other technological innovations.

#### MANAGEMENT AND START UP FINANCE.

This section was designed as part of the first tier information gathering exercise. The sensitizing study indicated that many founders of a transport business tended to enter sectors they had previously been employed in. This meant of course, that if this was a sector which was subject to any of the major influence factors discussed, then the future strategies and growth path of the organization might be affected by the initial start up decision. The study was particularly interested in studying firms which had changed sectors over the years as a result of their market experiences. It was felt that within such organizations a more explicit picture of successful growth policy portfolios might be found. At the same time it was not held that it was only within such firms that such groupings of policies could be found.



Since the 1968 Road Transport Act government departments, many academics and other interested parties in the industry itself have believed that one of the problems facing the industry has been a low level of general management expertise. In 1968 it was suggested that one of the ways to solve this problem, be it a real or perceived one, was to introduce some form of qualification for transport managers. This belief was eventually given substance by subsequent legislation in 1978, in the form of the Certificate in Professional Competence in Road Transport Operations, which all transport managers responsible for vehicles of 3.5 tonnes or more were required to hold.

It was held to be important to investigate whether there was any relationship between the path followed to obtain the CPC and the growth pattern of the firm in question. It was not hypothesised that this was likely to be a critical factor, but it was felt that it might be of influence.

#### SOURCES OF FINANCE

One of the elements which was frequently raised in the sensitizing study was finance. As with many industries with a small firm profile the sources of finance provided a frequent target for criticism. These criticisms usually fell into two broad types. In the first instance the availability of start up finance was seen as virtually non existent and secondly many voiced vehement

criticisms when they discussed the attitude of commercial sources to requests for finance for expansion.

The main areas of investigation concerned finance for expansion. This was especially the case if customers were involved in the provision of this resource. At the same time, it was felt that the nature of the presentation from the firms themselves could have a significant effect on how those sources reviewed any proposition. Discussions with the small business beureau of Lloyds Bank in Coventry indicated that many transport operators, especially the small to medium sized firms, tended to approach the bank for finance particularly poorly prepared.

#### GENERAL MARKET CONDITIONS.

In the light of the foregoing discussion, and the importance placed on the general market conditions in Division One, it was held that some investigation of how the organizations covered by the study perceived their market was of importance. Indeed it is believed that this element has a major effect in influencing the pattern of growth which a firm may or can follow. Given the very wide range of influences which can be discerned within the general category of Market Conditions it is obvious that some selection of the forces involved must be made.

As has already been discussed, the extent of price freedom which the transport operator possesses can be regarded as an important

influence on his growth potential. If for example he is engaged in a market where the customer determines the "going rate" then he is likely to experience particular problems. His freedom to price his services would be virtually non-existent, with consequent effects on organizational targets for growth, finance, profitability, and general management planning. It might be possible for example, that the only growth path which such a management could perceive would be to reduce costs through illegal practices.

On the other hand, such opportunities might not be available, but nevertheless, competition in that sector might be so intense that profit margins were reduced to the level where the setting aside of reserves for any increases in the size of fleet was virtually impossible. In such conditions the average organization could remain in "business" over a long period of time, but would remain roughly the same size, since any ability to set prices approaching a viable level for growth was precluded by market conditions.

Again, the business may have developed its services to the extent whereby it required higher prices than its immediate competitors to support its level of product menu, but because of the degree of superiority the service it was making available, could sustain such price differentials.

Reserved markets have already been discussed in Division One. In the United Kingdom there is little empirical evidence to support

the existence of such sectors. On the basis of the literature, the sensitizing study, and the personal experience of the industry, it was nonetheless felt that the concept had validity even in the context of the United Kingdom. It must be said, that by and large the concept was foreign to the transport managers with whom it was discussed during the sensitizing study. The original impression from that stage of the project was however, not that the concept was irrelevant, simply that most managers perceived the concept as irrelevant to their individual firm, rather than the road transport mode as a whole.

It was decided that for some markets the opportunity of potential customers to substitute other transport modes for road might have an important effect on the management policies employed by firms faced with this possibility. It could be feasible for example, that the pricing and marketing policies selected by specific road transport organizations could be determined by the availability of water, rail or air alternatives. The perception of such competition by managers therefore had to be tested.

The extent to which the managers of firms included in the study saw new services being introduced by their competitors as a major source of competition was felt to be important. The degree of this perception could be taken as an indication of the prevalence of outward and inward looking management styles. The existence of incompetent managers in the form of "cowboy" firms which drive prices down to running costs and below has long been

a source of interest to observers of the road transport scene. The inclusion of this area in this section is to assess the extent to which actual operating managers as opposed to outside commentators assess the threat. The degree to which such firms exist in particular market segments could have an effect on growth patterns. If they could consistently under price on jobs, then even if they suffer a high mortality rate, they could nevertheless make the laying of cohesive plans very difficult for full cost strategy firms.

#### ORGANIZATIONAL OBJECTIVES.

If any organization is to develop a logical series of strategies, then it is essential that its activities take place within a series of stated objectives, otherwise effort will be undirected and possibly often contradictory.

This section was designed to establish what the most common objectives within the industry were likely to be, and at the same time to discover whether managers felt that they were part of a successful organization, based on the targets they themselves identified as indicating success.

It was felt that the more efficient firms would be those who set target objectives for their management. These could be either long term or short term or indeed both, but the setting of such targets was seen as likely to be necessary for efficiency. If

this were not the case then the analysis of the data collected would throw this up, with hopefully, an indication of the reason why.

The source of such planning procedures was important to identify if a central source existed. In the larger firms this could indicate the overall position of the transport manager in the decision making hierarchy. At the same time there could very well be markets where firms who were light on planning but effective in direct action were successful and this element was also included.

In those organizations where planning did take place it was held that the nature of control was important to assess. No type of planning can be effectively operated if there is no provision for feed back as to whether the desired results are being achieved or not. If such feed back is not built into the system the need for remedial action cannot be identified, and hence action to alter weak areas will not be initiated. The ultimate objective here being to identify those planning characteristics which high growth, success level firms employ.

#### OBJECTIVE TARGETS.

If it is accepted that the more effective firms will employ some form of planning within their organizational structure then the next factor likely to be associated with successful firms, and

hence to be investigated in this study are Objective Targets. These should indicate the procedures which high achievement firms employ once their overall objectives have been set.

The sensitizing study and the search of the literature seemed to indicate that it might be held that within the road transport industry two very broad types of path are open to managers who attempt to implement strategies for growth. We might call these the inward looking and outward looking styles.

#### INWARD LOOKERS.

Such firms tend to see themselves purely as providers of a basic transport service. Their path towards growth concentrates on specializing within particular markets and traffics. If they decide to increase the size of their organization, the obvious path to them is to simply expand the geographical catchment area within which they operate. Market intelligence for this type of firm consists primarily of a roll call of all potential customers for their *existing services* within the geographical spread they feel they can service. Aggressive marketing to this type of operator would most likely consist of attempting to attract customers from local competitors on a price basis. They would in other words, provide the same service as their local competitors but compete on a price basis. They might also try to improve their profitability by increasing the effectiveness of internal control and reduce costs, or they might try to attract local customers

away from other modes such as rail. Their marketing approach is nevertheless essentially passive.

#### OUTWARD LOOKERS.

This style of management is regarded as likely to be much more aggressive. An active approach to growth would involve such managements moving into much greater consultations with their customers. In this way they would be able to more accurately assess what the market was demanding and thus be able to tailor their product to the total requirements of customers.

The emergence of Kanban and Just In Time manufacturing systems which were highlighted in Division One are cases in point. As manufacturers implement more and more sophisticated manufacturing systems they can be expected to demand an increasingly responsive and high tech transport service. The outward looking manager therefore will seek market intelligence which will be much more directed at discovering trends in demands. This of course suggests a willingness to alter his marketing mix. Such organizations will be prepared to expand their penetration of the local freight market by offering new types of services, new types of vehicles and be willing to introduce new patterns of operations.

The dilemma facing all types of transport operator, and the basic problem which allows the kind of classification outlined



above, is the conflict which can be seen to exist between specialization and flexibility.

The transport operator is subject to pressures to increase the productivity of his fleet. The most obvious and often the most effective way of achieving this is through increasing specialization. This move can however hold within it as many problems as it appears to solve since the haulier becomes ever more identified with, and absorbed into, a particular niche in the market. Such a niche could be defined either by a narrow based product/service range, or by reliance on one or a small number of customers. He can become a victim of his own initial success, in as much as further future expansion is tied to the success of that particular customer and or product market combination. The classic position of the closed or passive marketeer.

The attempt to avoid such difficulties by building in flexibility of fleet and customer base has its price also. The most obvious being the likely lower levels of productivity which the more generalist vehicles will produce. The classic advantage is having a wider service to offer to a broader geographically spread market.

A basic and major problem facing both strategies is one of buyer power, since if the operator is engaged in a "price taker" market sector then his customers can effectively determine his management portfolio and his likely path to future growth. This

usually occurs by the management concerned being forced into internal control as the only approach available to achieve greater profitability. The major advantage of the active or open marketeer in this situation is that he can broaden his geographic/customer product/service base, whereas the passive manager has tied himself into a more narrow such combination.

Some assessment of the relationship between these strategies and firm growth and success in the real world of the transport manager was considered essential for this project.

#### TARGET POLICIES

The foregoing outline the reasons why within this factor attention focussed on areas such as the degree of specialization of the fleet, the means whereby the firm normally increased its customer and or market base, and the extent to which the management was flexible in its approach to relations with customers and their changing demands.

It was also felt apposite at this juncture to try and assess how the operating managers perceived the culture within their firm. At this stage of the interview the subject would have been drawn into thinking out and rationalizing the general market approach he had been involved in during his time with the organization. It was believed that this would be so, even in those cases where the subject had not formally defined his activities before. It was for

this type of reason that the semi structured interview format was, after all, adopted in the first place.

The sensitizing study indicated the possibility that some transport firms allegedly grew through contagious growth, in effect being pulled on the coat tails of their more aggressive and dynamic major customers. If this were to be found to be true, then it would not be within such firms that a growth portfolio of strategies was to be sought-except for the obvious one. It was felt therefore, that requesting the managers to select a general "type description" for their firm might aid in identifying the genuinely dynamic managements.

#### CUSTOMER TARGETS.

The need for management to identify specific customer targets has been generally accepted as an aid to effective market growth strategies. This has been frequently cited as a major reason for the success of Japanese firms throughout the world, and no less in the United Kingdom. The extent to which this approach existed in the transport industry was seen as a good indication of the degree to which operators were actively aware of the need to pursue business, or be content to be washed here and there by the eddies in their customer's wakes.

The nature of their customer's success in their sector was obviously of interest in this context, since it would provide

information on the performance of transport organizations in innovation and growth, either in sympathy or contrary to their major customers.

#### COMPETITOR TARGETS. COMPETITIVE ADVANTAGE.

This section was designed to elicit information on the perception which the manager had of his main competitors. It would also allow cross reference on such areas as, if the subject perceives price competition as a major threat what actions is his organization introducing to combat this. Such data is already available in other sections of the questionnaire. In the same vein, the Competitive Advantage section allows the operator to assess whether all the actions which his firm have taken are in fact producing real benefits as far as his customers are concerned.

#### MARKET STRATEGIES EMPLOYED

This series in the questionnaire allows organizations to score for inclusion in the cluster analysis on the basis of the policies which the firm ACTUALLY uses. The main areas of interest are; Market Entry, this can identify the innovators and the plodders; Market Response, this heading is intended to spot those firms which are the most active in liaison with their customers; Fleet Effectiveness, allows those firms with effective internal management to be identified; Marketing Strengths, should indicate the haulier's perception of his firm's market performance;

Financial Resources, this area allows the extent of access to finance to be included in the general description of the firm; Organization, gives an input score which can indicate the types of management associated with the more successful firms.

#### MARKETING MIX

This area was also intended for inclusion in the data input for the Principal Component Analysis and Cluster Analysis run. It is designed to allow managers to score on the basis of a direct comparison between their own organization and their major competitors. The areas selected for comparison were designed to cover what were seen as the likely chief characteristics affecting relative success in the transport market.

#### FUTURE PROBLEMS OPPORTUNITIES

This part of the study was intended to provide information on how the industry saw the future as opposed to how the researcher, the literature or the government saw it. At the same time it gave the opportunity to compare the pessimists within the industry with the optimists. If for example most firms who foresee their market share much smaller in the future also believed that JIT and Logistics Services were likely to be of smaller import, and the opposite applied to optimistic firms, then some indication of real likely trends could be concluded. This was held especially so when such information could be linked to all the other elements

within the questionnaire- which of course is precisely the purpose of the Principle Component analysis and Cluster Analysis programme.

#### EMPLOYEE TRAINING.

In the initial stages of the study little attention was paid to this factor. This it is felt was as a result of contact with traditional hauliers over a period of years, resulting in the standard industry attitude of feeling that the industry was of a special nature which made most formal training redundant.

This stance may or may not be valid. There is little doubt however, that as the industry responds to the wide changes which its customers are experiencing then some change in the traditional attitude will become more common. As customers increasingly communicate in computerspeak, as they more frequently expect their transport haulier to be familiar with concepts such as KANBAN and JIT, and as the road transport sector becomes increasingly populated with very large active marketeers, then the level of expertise and training in the successful firms will surely rise. This section gives the chance for such firms to have a score input for this component.

## AIMS OF DATA ANALYSIS.

It is felt apposite that after this explanation of the questionnaire, it is once again stated what the purpose of it is.

The intention is to allow Principal Component analysis to process a very wide range of descriptive data concerning the firms subject to the study. This data is scored on the basis of attitudes, policies and targets which were considered to be of crucial importance in affecting the success or otherwise of operators in the West Midlands Road Transport Industry. The programme will summarize all of the individual scores which can then be said to describe the individual firms involved. A Cluster Analysis programme will then be employed to relate the above descriptive scores to another dimension of interest, in this case size of fleet, or rate of growth. The intention will be that any clusters identified would indicate the type of portfolio of policies and strategies covered by the questionnaire which were associated with successful organizations.

At the same time of course general discursive information was provided by the non scoring sections of the questionnaire. These permitted the identification of some broad general trends within the industry which were felt to be of major importance for the future.

THE QUESTIONNAIRE.

ORGANIZATION DETAILS.

Organization:

Licence No.

Address:

Type: N IN Sb Nsb

Contact

Tel.

Type: OD TM.

Other

Fleet size.

Type: FB A T M

Last Variation:

Nos.

Direction: + -

Previous variation:

Nos.

Direction: + -

Main traffics:

Operations type: Base Drop Base. Multi Drop. Tramping.

LH. SH.



ENVIRONMENTAL CONSIDERATIONS.

To what extent do the following statements reflect the opinions and or experience of your firm? 1-not at all, 2-almost but not completley, 3-about right, 5- Describes it best.

Road Transport legislation is so extensive as to place a high cost burden on the firms operations.

1 2 3 4 5.

The increases in safety and operating efficiency brought about by the legislation makes the cost and trouble worthwhile.

1 2 3 4 5.

The legislation is so detailed and complex most firms ignore many of its provisions.

1 2 3 4 5.

The Certificate in Professional Competence has significantly improved the skill levels of managers and management in the industry,

1 2 3 4 5

Rank 1-5.

The greatest operating problem is speed restrictions.

The greatest operating burden is waiting and loading restrictions.

The greatest operating burden is restriction in vehicle weight.

The greatest operating burden is access to delivery/pick up points.

The greatest operating burden is waiting to drop/pick up at destinations.

Many of my competitors gain unfair advantage by consistently breaking the law.

none at all 1 2 3 4 5 virtually everybody.

|   |                     |
|---|---------------------|
| The most common breaches are related to;  | Overloading         |
|   | Speeding.           |
| Rate 1 very seldom, 2 Seldom, 3 sometimes | Licence avoidance.  |
| 4 regular, 5 Very Regular.                | Tax avoidance.      |
|   | Use of dole         |
|   | drivers.            |
|   | Fuel fiddles        |
|   | Tachograph fiddles. |
|   | International Regs. |
|   | Backhanders.        |
|   | Others.             |

Rate; 1 Strongly disagree, 2 Disagree, Likely, 4 Agree, 5  
Strongly agree

The lawbreakers are unlikely to get caught.

Such firms can consistently obtain traffics by such practices.

Such conduct does not take place in my sector but I believe it  
does in others.

Specify other sector/sectors.

Evidence: hearsay. personal experience. other evidence;

#### TECHNOLOGICAL INFLUENCES.

Does your firm employ any form of computer. Y. N.

If N. is this because. high cost. y. n.

no skill. y. n.

no application. y. n.

Other reasons.

If Y. To what extent does your experience match the following statements. IT is deployed within these areas and results in greater efficiency. Rate 1 not used at all. 2 seldom used. 3 routinely used no noticeable improvement. 4 used with benefits. 5 used with great benefit

Market Research                    1 2 3 4 5

Data Collection/analysis.        1 2 3 4 5

General Admin.                    1 2 3 4 5

Routes/schedules.                1 2 3 4 5

Fleet Management.                1 2 3 4 5

Warehousing.                      1 2 3 4 5

Stock control.                    1 2 3 4 5

Classify as. Administration.      or      Operational.

Would you say that the greatest pressure for the introduction of IT has been; External.      Internal.      Both equally.

If E. Rate the reasons from 1-very unimportant seldom mentioned, 5 very important always mentioned by customers. ;

|                                 |   |   |   |   |   |   |
|---------------------------------|---|---|---|---|---|---|
| More time reliable delivery.    | 1 | 2 | 3 | 4 | 5 | . |
| More frequent deliveries.       | 1 | 2 | 3 | 4 | 5 | . |
| Link up with customers systems. | 1 | 2 | 3 | 4 | 5 | . |
| Contractual ties.               | 1 | 2 | 3 | 4 | 5 | . |

Comments.

If I. Rate from 1-very unimportant never considered, 5 very important .

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| Pressure from competitors.              | 1 | 2 | 3 | 4 | 5 |
| Price pressure from customers.          | 1 | 2 | 3 | 4 | 5 |
| Push for lower costs/higher profits.    | 1 | 2 | 3 | 4 | 5 |
| Part of marketing effort, lower prices. | 1 | 2 | 3 | 4 | 5 |

Comments.

Have any of the factors discussed involved the firm in introducing new handling methods, new bodies, new organizational structures.

Comment.

MANAGEMENT & STARTUP FINANCE.

Org. Type.

PLC. PC. P. S.

Prop.

No. years in operation.

Original type/progress.

Founders contact with industry.

If IN were original traffics related to experience.

Growth path/real or planned.

T.M. is a CPC held by examination.

Y. N.

Is TM separate from O Licence holder.

Y. N. who.

TM educational qualifications. O L. A L. Degree/Dip. None.

TM previous position.

Is TM in overall control of transport operations. Y. N.

IF N. who is/responsibilities.

What were the sources of start up finance .

Personal.

Bank.

Customer.

Government, local/national.

Other.

Estimate relative proportions of sources.

If non personal sources used were they Easy. Difficult. V.

Difficult.

Comment.

Sources for expansion finance are mainly;

retained profits, or;

as above. Specify

Requests for expansion finance are backed up by; Rank 1 never, 2

sometimes 3 usually, 4 normally, 5 without fail.

general reliance on industry knowledge. 1 2 3 4 5

promised business from existing customers. 1 2 3 4 5

argued strategic expansion plans. 1 2 3 4 5

cash flow/profits forecasts. 1 2 3 4 5

Others. Specify;



GENERAL MARKET CONDITIONS.

To what degree do you feel that the following statements reflect the position of your firm within its industry sector. 1-not at all, 2-not in complete agreement, 3-about right, 4-good approximation 5-Exactly.

We are essentially price takers, the customer sets a price he is prepared to pay we must operate to that price.

1 2 3 4 5.

The extent of competition in our sector is such that, the market sets a general price level which we must adhere to or lose business.

1 2 3 4 5.

Our mix of non price competitive elements is such that our customers are prepared to pay our prices which may vary from the norm in our sector.

Comment on elements.

1 2 3 4 5.

Because of the customers dependence on road transport, we have a degree of freedom in our pricing policies.

Comment on degree.

1 2 3 4 5.

Our main source of competition is from other transport modes.

Specify

Our main source of competition is from rivals introducing new types of services.

1 2 3 4 5.

Competition is from unrealistic prices by "cowboy" firms.

1 2 3 4 5.

#### ORGANIZATIONAL OBJECTIVES.

What measures would you say best indicate success in your industry.

Growth in fleet size.

Increase in share of market.

Entering new markets.

Elimination of competitors.

Reduction in operating costs.

Increase in profits.

Increase in profits /vehicle.

Increase in turnover.

Simply staying in business.

On the basis of the identified measures how would you rate your firms performance.

Very poor. 1 2 3 4 5 Very effective.

How important for management is achieving set short term target measures

Unimportant 1 2 3 4 5 Crucial.

How important for management is achieving set long term target measures.

Unimportant 1 2 3 4 5 Crucial.

In terms of setting management objectives your firm is

Ineffective 1 2 3 4 5 Extremely effective.

Only interested in day to day operations describes your firm.

Very poorly 1 2 3 4 5 Very accurately.

In setting management targets there is someone/group who is responsible.

Absolutely not 1 2 3 4 5 Very strong source.

In terms of planning and action would you say for your firm

Planning most important 1 2 3 4 5 action priority.

Does your firm employ control procedures. Y. N.

What procedures are employed. 1-very unimportant, 2-unimportant, 3-some attention, 4-important, 5-very important.

1 2 3 4 5

Periodical assessment of profits for fleet, customers, traffics.

Revision of operating costs,

Rules and targets which have to be met.

Regular communication in the firm to ensure nothing gets out of line.

Others-comment.

OBJECTIVE TARGETS.

Which of the following best describes your firms approach to growth.

1-not at all, 2-not in complete agreement, 3-about right, 4-good approximation, 5-exactly.

Provides highly specialized vehicles/services for specialized traffics.

1 2 3 4 5.

Attempt to attract new customers from local market area

1 2 3 4 5.

Seeks to expand its market catchment area for these vehicles/services.

1 2 3 4 5.

Try to attract competitors customers by offering same vehicles/service but different prices.

1 2 3 4 5.

Redesign the service, make it less specialized and capable of meeting wider ranges of needs.

1 2 3 4 5.

Focus on cost reduction and greater profits through higher utilization.

1 2 3 4 5.

Attempt to attract new customers from other modes.

1 2 3 4 5.

Consults with present/potential customers to assess their total requirements in terms of the service to be provided.

1 2 3 4 5.

Co-operates as far as possible with the customer to provide all operating demands, vehicle type/drop times/frequency of delivery etc.

1 2 3 4 5.

Attracts new customers by offering new types of vehicles/services.

1 2 3 4 5.

Enters new areas of activity as they emerge in the industry

1 2 3 4 5.

Constantly assesses vehicle ratios to allow variations in marketing mix.

1 2 3 4 5.

If you had to sum up the attitude of your firm to growth which if any of the statements below would most closely suit your organization.

Complacent, relies on one or a small number of undemanding customers to provide a steady flow of standard transport operations business.

Workhorse, no innovations but constantly seeks out new customers near and far , and provides a standard transport service.

Dedicated, one or a small number of large customers who effectively demand a " high tech " service and receive it.

Innovator, will introduce new vehicles/routes as their need is perceived in the market, constantly probing for new customers and opportunities.

Pioneer, will add new facilities such as warehousing/stock control, if an opening is seen, will employ newest technology, pursues an active market research and development programme, is the first into new market segments; the rest of the industry trails in their wake.

Comments.

#### CUSTOMER TARGETS.

Does your firm perceive the transport market as being made up of a number of definable segments. If so what are they. If not explain your firms view of how its market is subdivided. OR No view held

What basis is used by your firm to segmentize the market.

What segments do you target your service to.

Are your main customers defined in their own industries as

Very unsuccessful 1 2 3 4 5 very successful

Are they regarded as

Very conventional 1 2 3 4 5 Innovation leaders.

Are they seen as being in sectors of

Severe decline 1 2 3 4 5 High growth.

#### COMPETITOR TARGETS.

Are your main competitors.

Local organizations

National firms.

Multinational,

Would you say competition in your sector, compared to other transport sectors is;

Unaggressive 1 2 3 4 5 Very aggressive.

Rank the following characteristics of your main competitor in order of most concern.

Price. + - .

Type of vehicles.

Size of fleet. + - .

Range of services.

Speed of service.

Nos. of deliveries.

Relationship/customers

Finance available.

Rate of growth.

Comments.



COMPETITIVE ADVANTAGE.

The major benefits we offer our customers are

Our major advantage over the competition is

Our customers perceive our offered benefits as

Very unimportant 1 2 3 4 5 Very important

Our superiority over our competition is seen by customers to be

No better than others 1 2 3 4 5 Very superior.

In what areas do you feel your major competitor has an edge over your firm.

How crucial are these advantages.

General Comment.

MARKET STRATEGIES EMPLOYED.

To what extent do the following statements describe your firm. 1- not at all, 2-not in complete agreement, 3-about right, 4-good approximation, 5- describes it best.

**Entry to market.** 1 2 3 4 5

Selects safe established markets.

Enters only markets well known to company top management.

Seems to enter markets later than competitors.

Initiates market.

**Market Response.** 1 2 3 4 5

Regularly surveys markets for trends.

Strong liaison with customers.

Efficient sales force.

Keeps existence before market.

**Fleet Effectiveness.** 1 2 3 4 5

Fast accurate quotes.

Detailed knowledge of fleet costs.

Flexible quick response to customer variations.

Effective routing/scheduling.

Prepared to undertake warehousing.

Prepared to undertake stock reporting functions.

Provides additional driver services.

**Marketing Strengths.**

1 2 3 4 5

Can generate new business from existing customers.

Good at up staging competitors.

Good at finding best position in sector.

Good at sales and marketing.

**Financial Resources.**

1 2 3 4 5

Can identify needs and commit capital.

Ready access to small amounts of capital.

Ready access to medium amounts of capital.

Ready access to large amounts of capital.

Strong financial control of activities.

No real financial controls in firm.

**Organization.**

1 2 3 4 5

Very informal structure.

Strong definition of responsibilities.

Not prepared to encourage risk taking.

Emphasis is on efficiency and profit.

Comments.

MARKETING MIX.

Asses the importance of the following in understanding your firms performance. How do they compare with your competitors.

Service Policy.

Quality-reliability, flexibility.

Very unimportant 1 2 3 4 5 Very important.

Much inferior 1 2 3 4 5 Much Superior

Service Range-vehicle types, haul lengths, job patterns, driver services.

Very unimportant 1 2 3 4 5 Very important.

Much inferior 1 2 3 4 5 Much Superior

New Services-innovation.

Very old fashioned. 1 2 3 4 5 Leads competitors.

Much inferior. 1 2 3 4 Much Superior

Pricing Policy.

Prices.

Much lower.            1   2   3   4   5   Much higher.

Very unimportant.    1   2   3   4   5   Very Important.

Additional services-free or at low cost.

Much smaller.            1   2   3   4   5   Much Greater.

Very unimportant. 1   2   3   4   5   Very important.

Selling.

Advertising.

Very unimportant .1   2   3   4   5   Very important.

Much smaller.            1   2   3   4   5   Much Greater

Personal recommendation.

Very unimportant. 1   2   3   4   5   Very important.

Much less so.            1   2   3   4   5   Much more so.

Comment.

FUTURE PROBLEMS/OPPORTUNITIES.

In the future would you expect to see.

Market Share.

Much smaller. 1 2 3 4 5 Much greater.

Profitability.

Much weaker. 1 2 3 4 5 Much stronger.

Pure transport services.

Less important. 1 2 3 4 5 More important.

Logistics services.

Less important. 1 2 3 4 5 More important.

Jit planning.

No importance. 1 2 3 4 5 Very important.

Internal focus.

More on costs. 1 2 3 4 5 More on service type.

Customer targets.

Very different. 1 2 3 4 5 Very similar.

Competition.

Much weaker. 1 2 3 4 5 Much tougher.

Number of firms in your sector. 1 2 3 4 5

Much smaller. 1 2 3 4 5 Much greater.

Average size of fleets in your sector.

Much smaller. 1 2 3 4 5 Much greater.

Your competitive advantage.

Much worse. 1 2 3 4 5 Much better.

Service quality.

Less important. 1 2 3 4 5 More important.

Price competitiveness.

Less important. 1 2 3 4 5 More important.

Pricing freedom.

Less than now. 1 2 3 4 5 Greater than now.

Advertising.

Less important. 1 2 3 4 5 More important.

Comment.

in writing report to be

EMPLOYEE TRAINING.

Does your firm regard employee training as.

Very unimportant.

Very important.

To what extent do the statements below describe the type of training provided. 1-very little, 2-little, 3-good approximation, 4-about right, 5-exactly.

1 2 3 4 5

Early on the job training.

Specialist job training only, such as drivers, warehousemen etc.

All round training.

Training mostly external.

Training mostly internal.

All management from outside.

Drivers encouraged to seek promotion.

Different activity centres operate in isolation.

Retraining is common.

Job experience more important than professional qualification or training.

Comment.

Note that the demands of pagination for binding purposes have altered the page layout of the survey .



## CHAPTER 30

### PATTERNS OF CHANGE IN THE WMTI

Although the most important part of this study was the field work and its analysis, in the course of that field work and indeed in the initial sensitizing study, themes of change were observed. In some ways these broad trends within the industry were incidental to the main thrust of the project, but because of their global importance to the future direction of the road transport industry in the West Midlands and the country as a whole, they cannot be ignored. It is therefore intended to devote some space to those themes which were considered as likely to have the greatest impact on the future of the industry. Three major centres for the diffusion of change are examined:-

**Food Distribution.** This area illustrates the extent to which the customers demand for innovation and improvement can have a "knock-on" influence not only on the practices of the road transport industry but on its structures as well.

**Contract Hire.** This sector was deemed of interest since it has been the origin of a movement affecting patterns of ownership within road transport. As ownership changes so do responsibilities and this can affect how management views its functions.

**Express Parcels.** This sector shows how a revolution has taken place in management styles and skills as a result of a new product generating ever higher customer expectations.

#### DISTRIBUTION OF FOOD SECTOR.

The movement of food by road is by far and away the largest single commodity/market for the industry, some £2000 million being involved in road movements related to retail distribution in 1987. No one is really sure of the actual sums spent, since food operations in the road transport industry are very complex and fragmented. One trend is generally agreed upon however, and that is that the sector is undergoing rapid technological and structural change. These changes centre around the adoption of new techniques for the rapid handling of information. The potential improvement in efficiency which they introduce to the industry has resulted in sectoral growth, even in the midst of a fairly static overall growth rate in the industry as a whole. This growth between sectors arising as goods are switched from one system to another as customers demand swifter deliveries, better control information and more specialized handling.

The Freight Trade Association has pointed out that although overall road freight consignments grew by 18.9% between 1973 and 1984, the actual spend per tonne kilometre over the same period fell by 34% in real terms. This indicating that operators have

been forced to introduce increases in efficiency to remain viable.

The continued quest for even faster handling of information at the retail point of sale has set in motion trends within the food movement sector which will have effects not only within its own specialist area, but throughout the industry. The field work showed that whilst many hauliers were aware of these changes, many found them bewildering, and only the largest and most financially powerful firms were capable of fully integrating into their own operations the customer needs generated.

#### FACTORS DRIVING CHANGE

It is possible to seek the forces which have provided the driving power behind the radical changes in a comparatively small number of factors. These can be summarised as under;

Legal And Financial.

Organizational.

These profoundly affected first of all the methods of trading within the retail sector, and secondly, produced a major knock on influence on the structure and practices of the road transport industry itself.

## LEGAL AND FINANCIAL

These factors are at first glance uncomplicated in their effect on the industry- no matter how complex the technical detail- but their implications were more wide ranging than appear on first acquaintance.

In the early 1970s, the United Kingdom economy faced a great many difficulties. It is not the aim of this thesis to examine these , but included in the many government actions designed to stimulate capital investment was a decision to introduce capital allowances of 100% on specific types of assets. The government was of the opinion that the low level of real profits experienced by industry at the time had led to a cut back in capital investment, and this in its turn affected inflation, since companies seemed to prefer to pay high money wages to people rather than invest in cost cutting capital equipment.

Manufacturing industry, and manufacturing investment were the main targets of the many measures introduced , but for what ever reasons commercial vehicles were also included in the capital allowance schedules. The basic attraction of the allowance schemes was that qualifying assets could be written off against tax liabilities. This had obvious implications for the average manufacturing firm, but it also had particular results in the financial sector. The very high interest rates which had accompanied the period of stagflation which eventually prompted

central government to introduce capital allowances, had resulted in the commercial banks and other financial institutions making very large windfall profits. So large that they indeed proved embarrassing to the banks at a time of high inflation, low industrial profitability and escalating labour problems. Many public pronouncements were made by the banks at the time emphasising the short term nature of those profits and the programmes that the banks were going to introduce to put the funds to good use.

The management of the banks nevertheless had a duty to their shareholders to minimize their tax liabilities and maximise their profit opportunities. An obvious way to secure these aims was to purchase as great numbers of qualifying assets as they could and lease them back to end users. On the one hand the capital cost of the assets could be offset against tax liabilities and at the same time an income was generated from the ownership of the assets. The structure of the banking sector aided this strategy with, for example, the National Westminster bank having an interest in Lombank which in turn operated a variety of subsidiaries engaged in the leasing sector, for example Lombank Finance.

The major target was naturally manufacturing industry but through the activities of their finance houses, who already were involved in financial services related to the road transport industry, small numbers of commercial vehicles were drawn into

the leasing sector. The capital allowance scheme was introduced in 1972 and operated until 1984 when phasing out of the policy was announced. Over that time period the vast majority of transport operators preferred to obtain the full 100 % allowance themselves and purchase their own vehicles although as has been mentioned small number of vehicles were leased by the banks and their finance houses.

#### **REMOVAL OF ALLOWANCES.**

The introduction of the capital allowance schemes had therefore, only a marginal effect on the structure of the industry as most hauliers and owner operator fleets continued to purchase their own vehicles. The removal of the allowances was a different matter. There had been high inflation in all capital equipment sectors and the commercial vehicle area was no exception. The withdrawal of the ability to write off total purchase costs against tax liability brought home to the entire market the real high costs of vehicle purchase.

The average professional haulier had much smaller management resources available to him than the large scale organizations, and although he perhaps did not welcome the new conditions, reaction in terms of management reaction was however, slight. In the retail food trade some organizations were very large indeed. The finance departments of such companies began to appraise the alternatives available to outright purchase of their own vehicles

and many began to look upon leasing as an attractive alternative. Other factors were beginning to emerge in parallel which eventually changed the attitude of those firms not only to how they purchased their vehicles, but also to how they organized their entire transport function. The changes re-enforced these essentially straightforward financial variations into a movement which affected the entire practice of the road transport management in the food distribution sector.

A further factor which must be taken cognizance of was the introduction in 1986 of SSAP 21. This Standard Statement Of Accounting Practice states that all financial leases should be capitalised on the lessee's balance sheet. Certain forms of leasing, principally for our purpose, contract hire, remain outside the official definition of a financial lease and is therefore excluded from SSAP 21. The basic reason behind this is that contract hire agreements include an element of value added. This in its simplest format could simply be the fact that the lessor will be responsible for the maintenance of the vehicle, but in todays conditions will likely include further elements such as driver services, warehousing, inventory management and so on. The important factor is that SSAP 21 means that contract hire agreements do not appear as liabilities and as a result the balance sheet position will show an improvement on the company's nett return on assets. When it is remembered that some contract hire arrangements can easily run into six, seven and even eight figure sums the general management attractions are obvious.

These advantages are of most interest to large organizations, since either high investment in management expertise was required to ascertain the effect of the changes or as for example in the case of allowances, large scale operations were more profoundly affected. The retail industry has experienced a significant increase in its concentration ratio over roughly the same period as these movements were taking place.

#### **END RESULT**

The end result of this combination of forces was to push the large scale retailer into a very wide ranging appraisal of their distribution policies and especially to examine the likely effects of moving out of their own transport operations and instead reaping the potential financial benefits of handing over their entire distribution operation to third party contractors.

#### **ORGANIZATIONAL FACTORS.**

The legal and financial changes discussed above are perhaps best regarded as the source of original impetus, rather than as deciding factors resulting in changes in distribution policy within the retail sector.

The basic structure of the distribution channel is from manufacturer- to-stock holding point-to final destination, in this case the retailer. A major consideration affecting how this



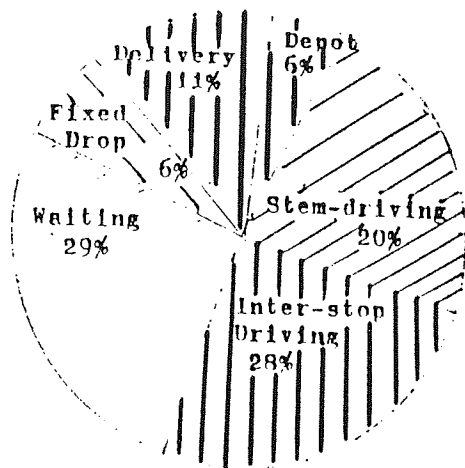
channel is organized in the real world is the location of the seat of power within the channel. The direction wherein lies the most power will be the source of decisions as to how the channel actually operates. If the direction is towards the manufacturer, then they have the greatest influence on the various key trigger decisions affecting flows down the channel. These could include location of warehouses, mode of transport employed, pattern of deliveries and so on. Conversely, if power in the channel lies towards the final customer, the retailer in the case of this investigation, then it is from there that decision parameters be laid down.

Conflict between seats of power is a common source of innovation, and change in the relative positions of power a source of conflict.

The retail industry has experienced both a change in the relative positions of power within the distributive channel and an attendant burst of innovation. The organization of factors affecting and affected by this change can be viewed as being divided into two broad categories, External that is those outside the individual operations of the firm, which affect the overall structure of the industry, and Internal, those relating to business practice within the individual organization. Both are interdependent, and are affected by and influence each other.

## EXTERNAL FACTORS.

The outstanding external characteristic of the retail industry over the last fifteen years or so has been the dramatic increase in its concentration ratio. In the mid 1970s there were about 105,000 grocery outlets in the United Kingdom, and by the end of 1987 this figure had been reduced to some 47,000 (Verdict Research 1888.). It should be mentioned that because of overlap of definitions statistics in this field are not very reliable, for example the decision on whether or not to include Marks & Spencers as a food retailer or not would significantly affect food sector statistics. It could be argued that although M & S are major retailers of food they are never the less variety chain stores and their sales should be included under that category. In 1974 the various independents accounted for 38% of the market, this had declined in 1985 to about 17%. In 1986/87 according to the Institute of Grocery Distribution, the five largest food retailers, that is Sainsbury, Tesco, Dee Corporation, Argyle and ASDA accounted for over 55% of food sales (include Marks and Spencers and the figure moves to around 65%). Mergers since that date will have increased this figure. Power within the retail market is becoming increasingly concentrated in fewer and fewer firms. This trend had many roots and has produced many off shoots, some greatly influencing the road transport industry.



Total Available Time = 10 hours  
 Total Distance Driven = 200 km  
 (Assuming Driver does not load  
 his own vehicle)

Exhibit 58

To illustrate the breakdown of a typical driver's day

Source: Kearney 1985.

Investment In Development.

the most important:

1987 1986 1985 1984

1987 1986 1985 1984

Sales Space 000 sq.ft.

|                 |      |      |      |      |
|-----------------|------|------|------|------|
| Marks & Spencer | 7942 | 7486 | 7216 | 6971 |
|-----------------|------|------|------|------|

|           |      |      |      |      |
|-----------|------|------|------|------|
| Sainsbury | 5034 | 4692 | 4325 | 3944 |
|-----------|------|------|------|------|

the following table shows

Exhibit 59

of a 2000 sq ft

To illustrate the extent to which the larger retailers have invested in new selling space.

of the larger retailers of

Source: Company Accounts.

Development of selected  
have been extracted from the  
and has been taken as  
The

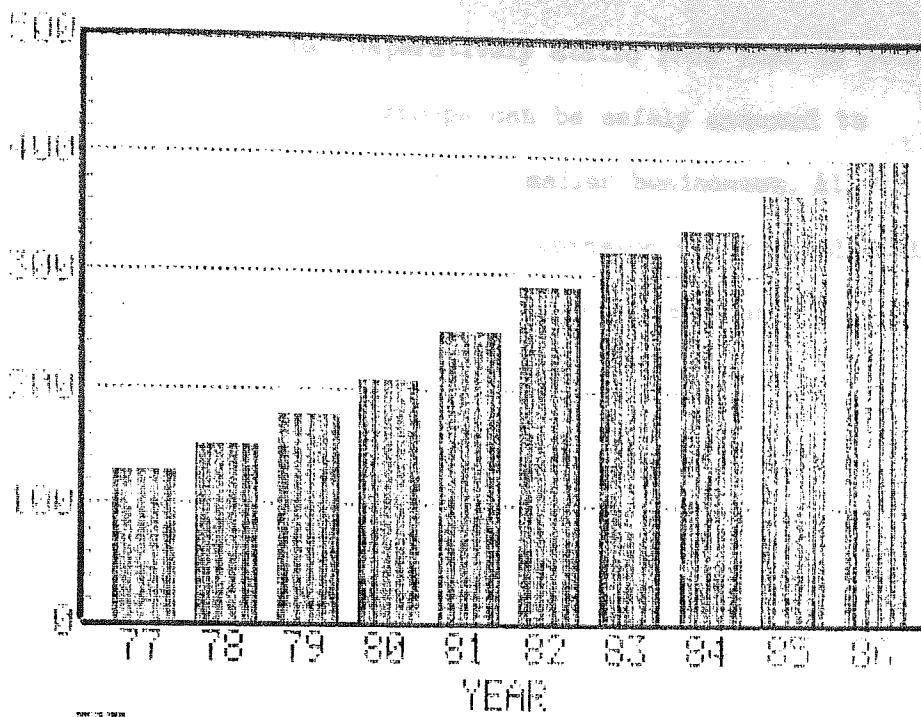
## NUMBERS OF OUTLETS.

As far as road transport is concerned, the most important component contained within this general move to greater concentration, was the trend to smaller numbers of larger stores, rather than a move to smaller numbers of larger retailing groups. This trend, although present in most sectors of the retail trade has been particularly marked in food distribution. Many of these new superstores are located on edge of, or out of town sites, with consequent implications for road transport access. It has already been mentioned in Division One, that many transport operators see access and loading restrictions as one of the major factors inhibiting their effectiveness. Smaller numbers of large stores in easily accessible locations would obviously make many transport operations more efficient. Exhibit 58, illustrates the breakdown of a typical day for the driver of a multi drop vehicle/route. Note especially, that some 57% of his total time is spent either driving between drops, or waiting around for access and or loading/unloading. The advantages of smaller numbers of larger drops are self evident.

## INVESTMENT

Exhibit 59, shows the investment in development of selected retail organizations. These data have been extracted from the annual reports of the various groups and can be taken as evidence of the continuation of the concentration process. The

# GROWTH OF SUPERSTORES



GRAPH A STORES

## Exhibit 60

To show the increase in the numbers of Superstores

Source: Kearney 1985.

total market for food is comparatively static from year to year, the expansion of the larger groups can be safely assumed to imply a reduction in the numbers of smaller businesses. All evidence suggests that larger groups expansion plans involve the construction of larger premises, consequently there is a reduction in the total numbers of outlets.

As a new superstore opens it will take away customers from existing traders within its catchment area, some will close down permanently, other may move into another retail or service sector. Smaller scale retailers are well aware of these threats and any planning application for a superstore is inevitably met with strong resistance from existing smaller scale outlets.

Exhibit 60, illustrates the growth in the numbers of superstores as defined by the Institute of Grocery Distribution. *"A nett selling space in the range of 25,000-75,000 square feet, retailing a wide range of food and non food items including durable goods."*

Kearney 1985 *ibid.* points out that as food retailers move to larger sizes they become more interested in selling their own brand goods, in areas such as food, drink, clothing, toiletries, and a wide range of household goods. Indeed some chains such as Sainsbury and ASDA and Tesco are particularly keen on promoting some of their own brands within their product portfolio. This move would seem to imply a greater interest in or responsibility for transport for these categories of goods, and perhaps represents a further source of the heightened interest in

Space Utilisation by Selected Store Sample

|                   | <u>1982</u> | <u>1983</u> | <u>1984</u> | <u>Change</u> |
|-------------------|-------------|-------------|-------------|---------------|
| <u>Retailer</u>   |             |             |             | 83-84         |
| Marks and Spencer | 292         | 350         | 411         | +17%          |
| Safeway           | 220         | 263         | 293         | +11%          |
| Sainsbury         | 539         | 646         | 693         | + 7%          |

Turnover per sq ft selling are at constant 1984 prices.

Source: Company Report and Accounts

Exhibit 61

To show the utilization of selling space in the immediate period of the research project.

Source: Company Accounts.



transport and distribution management, as per under discussion now.

### **INVESTMENT**

This as it may be, but as Exhibit 61, shows, there can be little argument that one of the factors to emerge from the concentration trend has been a push by retailers towards trying to make more intensive use of their new premises. Pressure to maximise the selling space available within a store carries implications for transport and distribution operations. As determination to increase turnover per square foot of selling space gathers pace, then less space becomes available for inventory storage, nevertheless customer service levels must be maintained. A product cannot be sold unless it is on the shelf, it cannot be on the shelf if inventory has moved into a stock out situation.

One way around this problem of less space but high service levels, is to organize more frequent deliveries. This is perfectly feasible but to be effective, inventory planning, vehicle availability and co-ordination of the transport and distribution function must be high. The implication is that for such an approach to be effective information handling must be both accurate and rapid. In the larger stores, with many thousands of lines in the product portfolio this can be a formidable task. The reorganization of transport flows could also help in achieving

efficiency in this area. It is not necessarily the case that lower inventory levels would result in an increase in the frequency of deliveries the store had to accept. If it were possible to consolidate wide ranges of product/supplier combinations, and to employ large highly utilized vehicles then a lower pattern of deliveries could be achieved.

It will be noted that for these larger vehicles to be usefully introduced then access and waiting problems would have to be solved- a situation easily accommodated on an edge of, or out of town site. Kearney 1985 *ibid.* points out that their research indicated that for stores served in the traditional manner, that is direct from suppliers, or from wholesaler, up to 65 deliveries per trading day per store might be expected. On the other hand if some form of intermediate groupage or consolidation service were to be developed the same store could expect about 15-20 delivery vehicles per day, depending on the size of the vehicles used and the turnover of the store.

These factors can be seen as once again pushing the larger retailer to introduce a wide ranging review of his traditional transport and distribution organization.

Such motivation was enhanced by the other organizational factor already listed, namely the changes in internal operations which were proceeding at the same time as the forces already reviewed.

# EPOS INSTALLATIONS

STORES JAN. 87

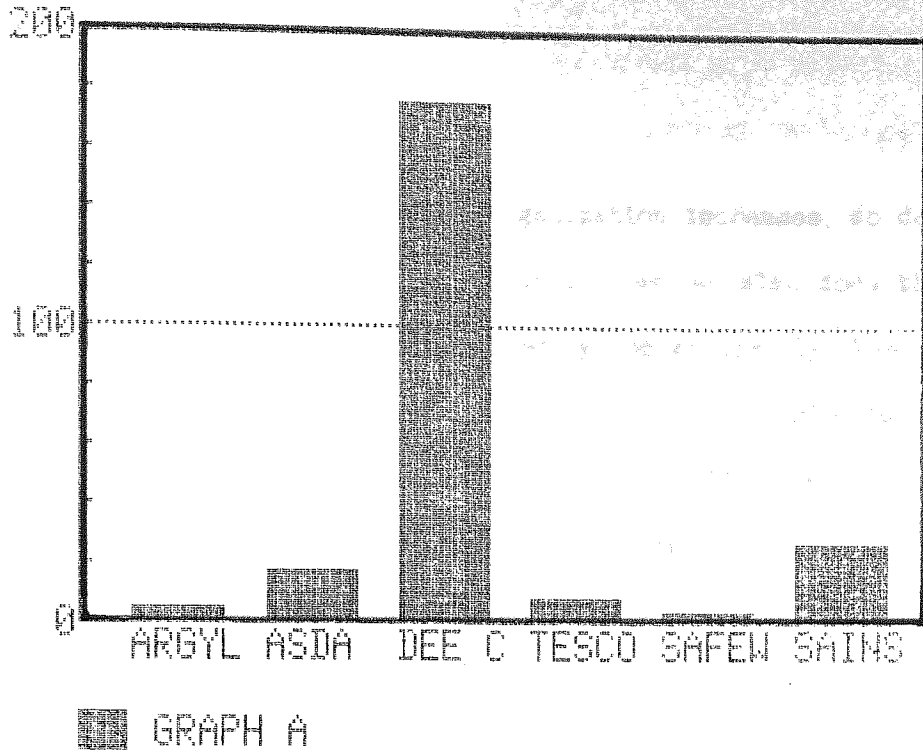


Exhibit 62

To show the increase in the numbers EPOS tills

Source: Kearney 1985.

## INTERNAL FACTORS.

As the scale of operation for any organization increases, so does the volume of data generated by its activities, so also does the need to process this information speedily and accurately. The large scale retailers have been innovators in the introduction of Information Technology into their organizations. This has complemented and magnified the trends in management thinking already highlighted and their effect on the road transport industry.

The most important investment in IT from the viewpoint now being discussed, has been the spread of EPOS or Electronic Point Of Sale systems. Exhibit 62, shows the recent growth of such installations, although it should be pointed out that the technology has been available certainly since the mid 1970s. EPOS systems allow the combination of bar coding on products and computer installations at check -outs to identify each product/unit bought by consumers as they have their purchases totalled for payment. The information can then be processed at appropriate times to record exact patterns of consumption for each product line in the stores merchandizing portfolio.

Information of this nature has a wide range of marketing uses which are not of concern to this thesis, but suffice to say such records can be employed to tighten up on the management of the store.

In general management terms however, one of the most important destinations for data gathered is inventory control. By having available on a day to day basis exact rate of depletion figures for each product line, consumption can be checked against the appropriate control points and where acceptance conditions allow it, orders placed to ensure next day delivery. This means that subject to the quantities required for shelf display, and the reliability of the supplier, stores can cut inventory requirements on many items to 2-3 days, compared with the 2-3 weeks which were previously required. This effect being due to the reduction in time required for information flow through the logistics channels. In cases where freshness is at a premium, deliveries can be arranged several times a day and stock cover reduced to hours rather than days.

It is perhaps worthwhile emphasising that stores which already receive large numbers of vehicles per day will not necessarily be faced with an even further increase in calls. The ingredient which changes is the mix of products in each delivery, a smaller quantity of a greater variety of goods being the end result. In other words, smaller quantities of any one product line are delivered at shorter intervals.

Such requirements obviously have an effect on the transport operator sector supplying these stores. This will be discussed below, but it is first necessary to examine further the possible future trends in new technology and to review how the changes

already examined have affected the distribution SYSTEM as opposed to the transport component of it.

#### FUTURE USES OF INFORMATION TECHNOLOGY.

The most likely trend in the use of information technology in the retail industry is to extend the benefits of rapid information handling to customers themselves. These movements naturally will bring benefits to the retail organizations as well, but will almost certainly be "sold" to the public as having advantages to them.

The first stage, already being operated in Shell Wayfarer Stations and in other forms by other major oil firms, is really a slight upgrading of the EPOS concept to EFTPOS, that is, Electronic Financial Transfer at Point of Sale. These tills allow the use of some form of financial authority card to allow the customer to have his bank account instantly debited for the cost of purchases, and of course, also allow the crediting of the stores account. The immediate transfer of funds to the retail organization, instead of the time delay and cost of clearing cheques is an obvious financial advantage to the company organization. The future extension of such a system to encompass shopping from the home via a home data terminal is a short step for which the technology is already in existence. The widespread acceptance of such a retailing system is perhaps some time ahead, but the implications for delivery patterns are obvious.

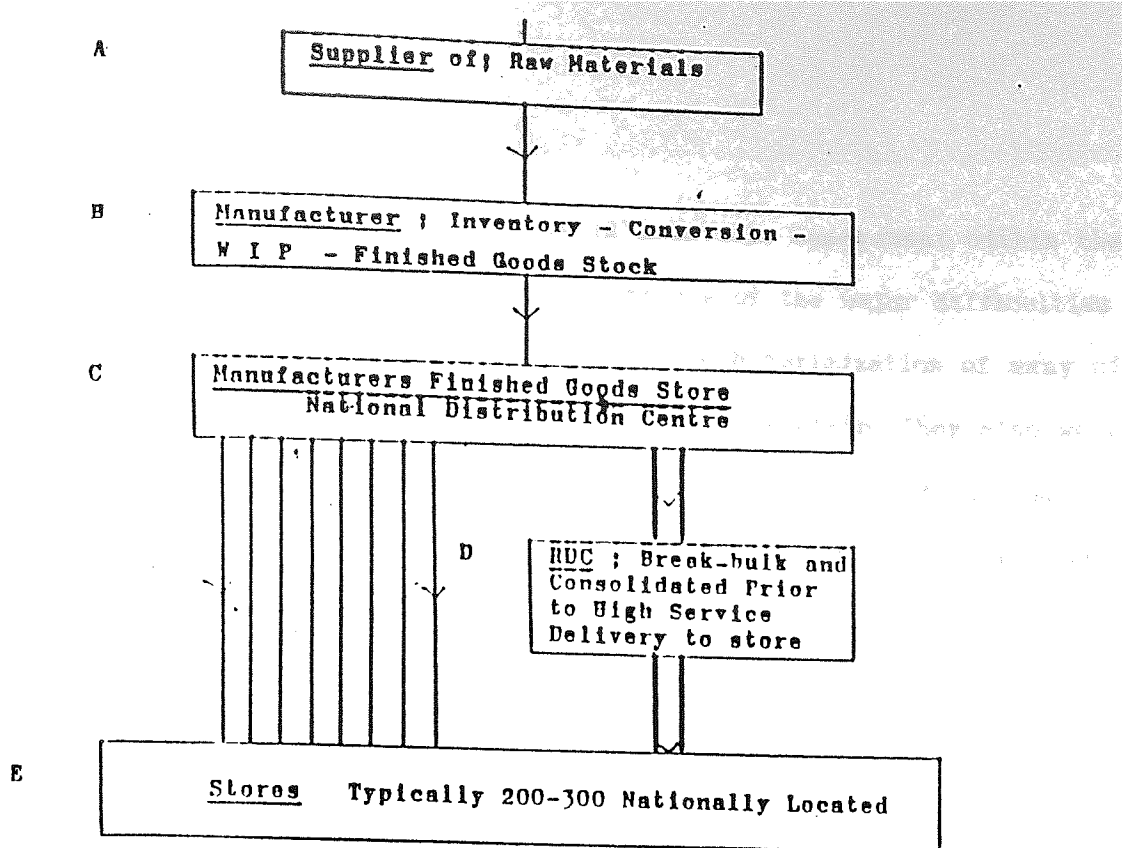
The introduction of systems such as a TRADANET, or traders electronic mail network, allows direct electronic communication between retailers and manufacturers and are already in operation between the major retailers and their most important suppliers. This system allows direct invoicing, direct ordering and allocation of product between stores and suppliers. Investment in high technology systems of materials handling within the network's warehouses, is an area which is also advancing hand in hand with these developments.

The link in of distribution centres into this system allows even greater reductions in inventory requirements, and of course passes on ever greater operating standards requirements to the road transport component, which is after all, the basic link in the entire system. The overall picture which emerges is one of rapid innovation in information handling techniques requiring high levels of investment.

Given these factors the overall build up of pressure for change in the traditional distribution systems, and hence the traditional road transport operations within such systems was irresistible.

#### **RESULTANT SYSTEM CHANGE.**

The keyword behind the changes which resulted from the factor mix discussed, and which still is the keyword in the innovations



A - Supplier

B - Manufacturer, typically 500-1000+ for most major retailers

C - Manufacturers distribution centre typically 1-5 no.

D - Retail Distribution Centre typically 5-15 in no.

E - Stores

- BCE - Primary Distribution System, manufacturer controlled, less tailored.

- Secondary Distribution System, retailer controlled and tailored to their specific service, and operational requirements. (CDE)

C and D are frequently owned, operated and financed by 3rd party contractors, charges being made to retailers on a revenue basis.

Exhibit 63

To illustrate the emergence of new patterns of distribution.

Source: Pierpoint 1987.



working through the sector is INTEGRATION. Management within the retail chains quickly realised that one of the major difficulties facing them in the past had been the sub optimization of many of the parts which went to make up the supply chain. They also were quick to appreciate that the trade off of higher costs in one sector, for lower overall costs, was a pre-requisite if the newer technologies were to be effectively interfaced. It was appreciated that all of these were best achieved as a result of greater integration within the distributive system.

#### **DISTRIBUTION SYSTEMS.**

Exhibit 63, illustrates both the traditional and the more recent patterns of distribution which are likely to be met with in the retail distribution industry. The heavy line represents the more traditional route from manufacturer, to regional warehouse or wholesaler, and then to the various stores of the chain. The broken line represents the more modern trend, with a Regional Distribution Centre (RDC) acting as a consolidation point for many manufacturers resulting in composite loads being assembled for movement on to the retail stores. The old route, controlled by the manufacturer, is usually referred to as the primary distribution system, whereas the retailer centred type is referred to as a secondary distribution system.

When it is remembered that a major retail chain can have as many as 500 different manufacturers it will be appreciated that

congestion problems at the "back door" pose major difficulties for store management. As retailers continued to push for greater yields from their stores by maximising the ratio of selling space to total available space, the importance of more accurate and flexible inventory control became more acute. As already pointed out, any reduction in space dedicated to inventory storage means more frequent deliveries of smaller quantities of individual items in the product portfolio. This might reduce money tied up in inventory, but it goes hand in hand with an increase in receiving activity and the associated administration costs. In other words greater sales and lower levels of investment in inventory had to be traded off against higher receiving and administration costs. In effect the management teams of the retail chains had to develop greater efficiency in all aspects of shop supply. The benefits from "just in time" systems are available only within a distribution network where effective scheduling, the use of optimum handling techniques, and maximum co-ordination are the order of the day. Such liaison between the different components in a primary distribution system were and are extremely difficult to obtain.

The secondary system, where power is acknowledged to lie with the retailer is another matter. In such systems, the entire network is dedicated to the needs of the end user and all operating criteria are set to meet his stated targets. It is claimed that for any specific user secondary systems offer many advantages such as:-

Lower inventory levels.

Better control of service standards.

More productive use of labour.

More efficient use of vehicles.

More accurate information flow.

More effective trade offs as a result of removing sub optimization centres.

The arguments which have resulted in the widespread adoption of secondary distribution systems essentially revolve around the proposition that the lowest total cost of distribution, will only be obtained when all parties in the supply channel recognize the interdependence of its various components. Since both the suppliers and the retailers benefit from higher consumer purchases, there must come a time in their power struggles when the relationship matures beyond that of adversaries to that of partners.

What has been discussed so far is really the dynamics which have led to a more integrative secondary distribution system developing within the retail area, and more specifically its shape in the food distribution segment of that industry. This project is most interested in the knock on effect which these developments might have had on the transport activity, but a brief discussion of the origins of the trends has been considered apposite.

The process can essentially be regarded as consisting of two main factors, with a minor but important element which is likely to emerge as the main engine house for further progress down this line of development. These have been;

The financial and competitive pressures which led to the search for a method of distribution which would allow the potential benefits of EPOS, EFTPOS, and TRADANET and similar systems, to crystalize into actual financial improvements;

The emergence of RDCs as part of an integrative secondary distribution system;

An underlying integrative culture which as yet is not widespread, but it is believed, will become more so as the realization of the wastefulness of combat, and the trade off benefits of partnership in distribution activity become more widely accepted.

#### THE CULTURE ASPECT.

This is one aspect of change which has not yet really been discussed at any length and is clearly of some importance. The idea of an integrative culture first surfaced during the sensiztizing study.

By integrative culture is meant a set of norms and expectations shared by managers in the distribution activity. These values might often cut across the immediate boundaries of their normal loyalties, that is loyalty to their employing organization. In a similar way the more generally shared cultural values of

the society we live in can often cut across family boundaries, although of course when this happens conflict can arise and compromise solutions are often arrived at in both sets of circumstances.

Two spheres of influence for this integrative culture can be discerned, the first is in the internal culture of the individual company and the second in the alignment of the firm's cultural environment with that of other interested parties or allies. As is the case with general values in the outside world, those cultures with the greatest number of similar values tend to be natural allies. They can be sympathetic to commonly held ideals and understand the motivations which drive members of their respective cultures to try to attain particular, specifically stated and sometimes ephemeral or unstated goals. On the other hand conflict can arise where cultures wish to reach the same objectives by greatly differing paths, or where what appears to one culture as a very desirable and logical objective is dismissed by others.

The drive towards an internal integrative culture was almost certainly the first to develop and has been generally accepted in distribution circles since the concept of Physical Distribution Management or Business Logistics became widely preached in the late 1960s and early 70s. This manifested itself in the movement towards more integrated control of distribution linked activities within the company. This was seen both in manufacturing and

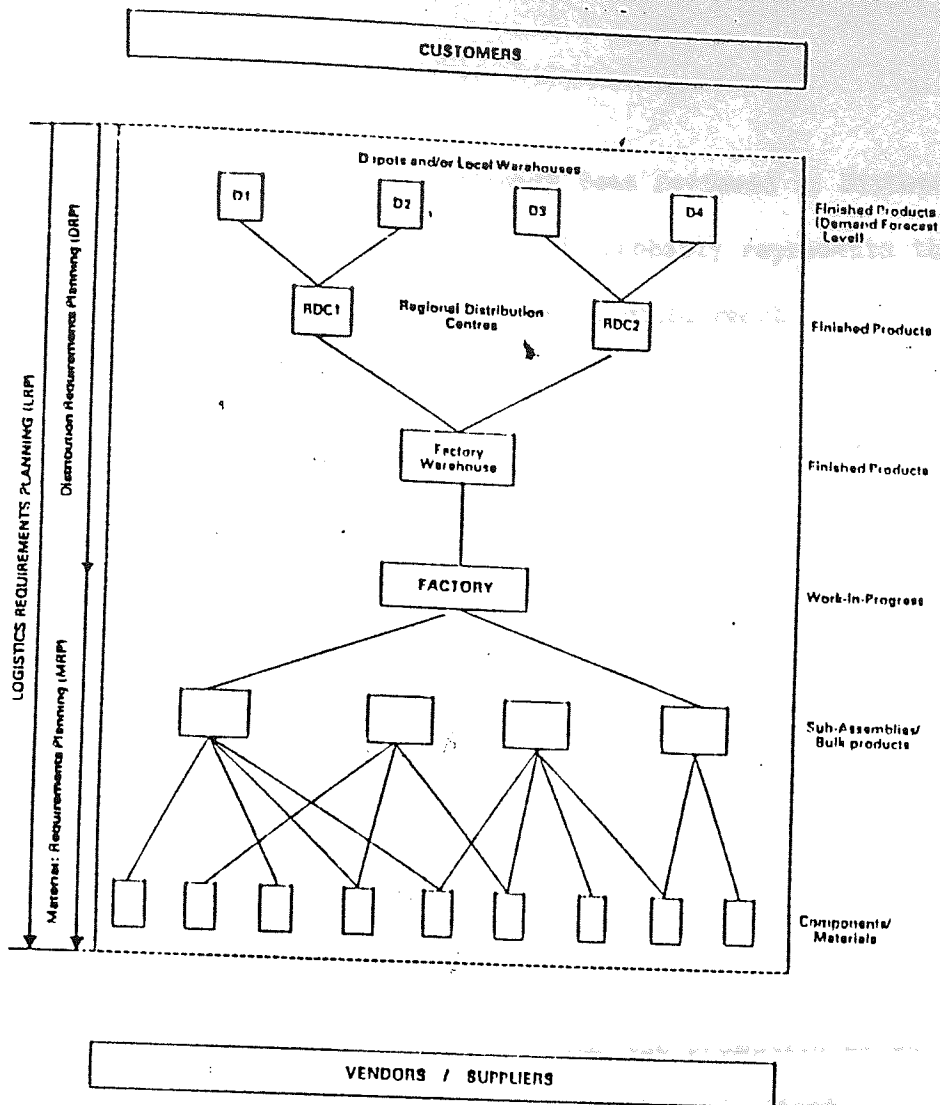


Exhibit 64

To illustrate the development of the logistics planning structure.

Source: Christopher 1986.

retailing companies as has already been reviewed in Division One. Exhibit 64, after Christopher 1986, probably represents the zenith that such internal development could reach.

As with many cultures prophets arose who saw their values as having currency in the outside world. Many set off to convert organizations external to their own to the benefits which following their "way" could bring. The manufacturing environment however, presented many difficulties and problems for the spread of an integrative culture outwith the individual company. This was primarily because of the lack of, or the difficulties in implementing, the other two integrative factors, namely the system and the technology. Retail distribution, as we have seen, did provide all the required elements for the promotion of an integrative culture within and between organizations.

#### **INTEGRATIVE CULTURE MECHANISMS.**

The Big Five retailers have long been au fait with this situation and with the construction of RDCs by ASDA and Tesco going ahead this year (1987/88) all are investing large sums of money in secondary systems. To illustrate the sums involved Tesco is to build six RDCs at a cost of £70 million. In 1985 the company operated some 100 distribution points, when the new system comes on stream at the end of 1988 90% of its products will pass through only 14 distribution points, this number including the 6 new RDCs.

As is the case with the other Big Five the operation of the RDC network will be in the hands of Third Party Operators. These are the transport companies who have possessed sufficiently highly skilled management teams to be able to identify the growth of this market segment and take advantage of it. These are the innovators in the transport sector who are invariably high growth companies who have been following the successful growth portfolio of management practices identified as a result of the central field work of this thesis and discussed in depth elsewhere.

#### **ILLUSTRATIVE COMPANIES**

Perhaps the best method of illustrating how the integrative culture has operated in the market place is to briefly describe the activities of a small number of companies, and to link these through a common external integrative innovator.

#### **SALVSERVE**

This is the distribution arm of Christian Salvesen and has interests in the chilled and frozen food distribution industry. These activities accounted in 1987 for some 56% of the company's trading profits. Salvesen is a long established Scottish company who very early on perceived the opportunities available through market segmentation and specialization in what the firm saw as likely growth areas. The company responded to the desire of the



retail industry for dedicated transport and distribution services and is to-day heavily involved in this activity. The firm indeed, sees such areas and services as part of its mainstream activities and is intending to expand these markets both nationally and internationally.

The company is involved in secondary distribution chains with Marks and Spencers, Sainsbury and Tesco. Whilst the majority of its business with Marks and Spencers is within the food areas, it is of interest to note that the company has recently been involved in the design and operation of a £9 million RDC at Warrington for the textile side of Marks and Spencers business. Salvserve also operate 3 RDC for Sainsbury and 2 for the Tesco chain. The company is not content however, simply to move goods from RDCs to the retail outlets but has been prominent in pushing integration activity further down the line towards the suppliers.

Salvserve also provide groupage services in 3 locations throughout the United Kingdom. At these points manufacturers goods are accepted from many locations, and consolidated into mixed load deliveries for movement on to the local stores. This groupage service provides the fast response times, mixed deliveries, and consequent reduction in inventories already discussed above. The company appears to be taking the integrative philosophy to its logical conclusion and is moving further back along the supply chain itself, having purchased a

Specialist Performance.

Christain Salvesen

|                     | Food Activity | Total |
|---------------------|---------------|-------|
| Turnover. £m        | 154           | 295   |
| % of total          | 52            | 100   |
| Operating profit £m | 21            | 38    |
| % of total          | 56            | 100   |
| %Rate of Return     | 14            | 13    |

Exhibit 65

To show performance of Salvesens-a third party distributor in 1985

Source: Company Accounts

vegetable processing and repacking plant at Berwick. There is a distribution element in this move. As other grower's vegetables can be repacked at this plant for consolidation into mixed loads for movement further down the distribution chain. Exhibit 65, illustrates Salvesen performance since going public and the relative importance of its transport and food activities.

#### **TIBBET AND BRITTEN.**

Tibbet and Britten provide another example of a firm with an internal culture attuned to take advantage of any new developments in their particular specialism.

The company was originally a subsidiary of Unilever, and was the subject of a management buy out in 1984. The firm already has extensive experience in the movement of textiles especially in the "hanging garment" sector. The new company formed Transcare which is the arm of Tibbet and Britten involved in the provision a dedicated service to Marks and Spencer. The organization is engaged in providing typical secondary distribution system services to the retail stores of the Marks and Spencer group. It is important to note however, that Tibbet and Britten are not limited to one customer, or indeed only to the retail sector. They provide similar services to ASDA C&A and the Sears group. They have also specialised in the operation of premium accounts in the movement of high technology products such as for IBM. the company does however, illustrate the new style transport

operator, moving forward at the cutting edge of the industry, but only on the basis of a carefully thought out long term strategy. It is most definitely not an old guard hire or reward operation, whose market segmentation and planning consisted of dependence on one large customer, and other accounts which were brought in on the coat tails of the major business. The management of Tibbet and Britain, to quote Mr. R. Vickers the Managing Director of Transcare, "see the way forward as depending on the flexibility of the executive team and their ability to identify and respond to opportunities in the market dynamic." (Enfield Head Offices 5/3/87.Pierpoint 1987.)

#### **TRANSHIELD.**

Is in some ways an even more interesting example of the integration movement at work. Salvserve vehicles can be seen delivering in their own livery to the various chains already mentioned, all that identifies Transshield vehicles is a small script on vehicles which otherwise appear in the green Marks and Spencers livery. Yet Transshield owns and operates 7 food RDCs and 3 textile RDCs totally dedicated to the Marks and Spencers distribution network.

Transshield is a wholly owned subsidiary of the British Oxygen Company, its full title being BOC Transshield. Transshield can be seen as a move to diversification within the BOG perhaps initiated by the Monopolies Commission's action in the 1960s

which forced the selling of 25% of its UK Industrial gases business to Air Products the other main firm in that industry . The diversification commenced with BOG purchasing a group of general haulage companies , the original intention was to utilize the BOGs expertise in road transport to diversify into premium account general haulage and the retail distribution business, in fact virtually all of the Transhield business is conducted with Marks and Spencer.

The relationship with Marks and Spencers is an appropriate one to introduce the integrative culture element. By examining Marks and Spencers philosophy in setting up a secondary distributionsystem, the mechanism can be seen in action.

*state was being reorganized, the*  
Derek Archdeacon, the recently retired Chief Transport Executive of Marks and Spencer, said in the House Magazine in 1985 "We believe that we have the most sophisticated and reliable food distribution service in the United Kingdom . Our critics probably think we pay too much for it. But they have no idea of the standards we have set for the service and the cost benefits we get from it. We believe that our food is fresher , because it is delivered more often to our stores, under more rigidly controlled temperature conditions and higher hygiene standards than those of our competitors. Had we stuck with the old system our Coventry store for instance, might now be dealing with an average of 30 supplier vehicles per day. In fact we give that store all the merchandise it needs with an average of 6

scheduled deliveries a day. The stores can now spend more time on their prime function of presenting merchandise properly and providing customers with the service they want " St. Michael News 1985.

This somewhat lengthy quote in fact sums up virtually all the elements so far discussed. The retailer perceived that there was a need to compete on sales with a freshness premium, desired that the staff employed in the stores should concentrate on selling and customer service, saw the need to cut down on "back door" congestion, and felt that the reorganization of the supply chain was the principal means whereby all of these desired objectives could be obtained. It is interesting to note that at the same time as the supply chain was being reorganized, the buying function within Marks and Spencer was moving from a manual, store centred system, to a centrally co-ordinated, chain wide computer based approach. This has resulted in a 36 hour turnaround on fresh foods. In effect a JIT system within the retail industry. For example on a Tuesday morning RDCs will receive information about fresh foods which will be delivered from the suppliers on Wednesday, this will be distributed to the stores on Thursday morning.

The transshield fleet consists of approximately 360 vehicles- a very large fleet by United Kingdom standards. In the course of discussions with operations staff, some interesting information was brought to the attention of the researcher.

The benefits Marks and Spencer perceived from the move into secondary systems are obvious, but like all pioneering efforts it should not be thought that there were no problems or costs, or indeed mistakes. It is likely that Marks and Spencer's management were too optimistic on the costings of the benefits the change was likely to produce. The general feeling obtained from interviews was that the additional space made available for selling purposes was worth a great deal to the stores. As a result the benefits were costed with an eye to the retail sales figures, and some Transhield operators were of the opinion that these figure "blinded" Marks and Spencer's managers to the real costs of transport operations. The deal was based on a costs plus basis on a price paid for each of the trays of food moved by the depots. A figure of costs plus 16% has been mentioned by Transhield competitors. It is impossible to ascertain directly what the actual rates are, but they are reviewed every six months, but as far as is known always on a costs plus basis. This is important since of course the system of scheduled deliveries to the stores, and the very high response standards set by Marks and Spencer would seem to have resulted in over capacity within the Transhield fleet. This has been denied by both managements, citing the high standard of service set in the original agreements. It is significant however, that in spite of approaches Transhield has been unable at the time of research (1986/87) to obtain any further premium contracts. When talking to operations managers within the competitors of Transhield they have invariably indicated that they wish they could have obtained

such a rate, and they also all believed that Marks and Spencers were probably now experienced enough in transport operations not to award a similar contract ever again. It is also of interest to note that since the original deals with Transhield in the late 1970s there has been a move away from a heavy dependence on Transhield (85% of food deliveries in 1981) to a wider range of operators such as Salvserve.

The basic point is never the less valid. The retail store in its own interests acted as an integrative force in the supply chain providing the dynamic which only those transport companies which possessed compatible internal cultures could take advantage of and move into a period of sustained growth.

#### FUTURE DEVELOPMENTS.

The key to understanding the major changes which have taken and are still proceeding within this sector of the road transport industry, is the culture of innovation. Those transport firms who will not, or cannot, adapt will face an uncertain future. They will almost certainly face either decline or the need to move into some other sector of the business. Latest estimates are that third party operations in the secondary distribution system accounted for 20% of the market in 1984, 27% by 1985, and a forecast of 40% by 1990 (Times 30/4/87).



This is an area of activity where transport operators must provide responsive service of the very highest order, this in turn must mean that only those operators with the requisite management talent and complementary structures, will be able to secure the prestige high volume contracts. As there seems little likelihood of the move to concentration in the retail industry evaporating, the knock on implication would appear to be that this major sector of the road transport industry will itself be moving into a period of rapid concentration. Those hauliers who are squeezed out of this market can really only move in two ways, into another segment or into less integrated parts of the food retailing or associated industries- such as typified by the garment business of Transcare.

If there is a general move out of the sector, then of course the increase in capacity could result in more severe competition in the market which is the destination target of the move. The results of the field work indicate which areas expect an increase in the tempo of competition. The move into a retail sector which is not yet involved in the integrative movement implies a move towards a static or declining sector of the market with obvious consequences. The expansion of the third party operations concept into non food segments of the large chains presents perhaps a better opportunity. The difficulty there is that this gap in the market has already been spotted by the innovator type of operator and is rapidly being filled.

It is possible that smaller transport operations may take a leaf out of the voluntary retail chain movement. Those had their origins in the independent wholesalers attempting to bring together smaller scale retailers to obtain for them some of the economies of scale which the large chains obtained and at the same time ensure the existence of the wholesalers. This was accomplished by the chains agreeing to purchase minimum proportions of their requirements through the sponsoring wholesalers.

The smaller retailers might respond favourably to the provision of RDCs which would allow them to obtain some of the benefits of integration. Suppliers are not blind to the advantages they have obtained by moving through intermediate consolidation facilities, thus allowing them to prune their own transport and delivery services and hence cost centres. The future might very well see the larger suppliers being prepared to deal with smaller chains, only at a premium delivery charge or penalty. This development would provide the opportunity for the more astute transport operators to come together in a Co-operative and provide at least some RDCs for the use of either medium sized independent retailers and or the smaller, and indeed the larger, voluntary retail chains. There is as yet no evidence of the movement emerging.

The smaller transport operator in this sector seems then to have a future which is bleak, either he moves into some part of the

integrated system not already occupied, attempts to become some sort of feeder for the already established innovators, exits the sector into some other area which is on the verge of a similar or identical explosion and gets in on the ground floor, or initiates some move to-wards providing a new service himself, such as the co-operative regional distribution centre.

No matter the course eventually selected, the key to survival will be found in a more dynamic, better skilled more market orientated management.

## CONTRACT HIRE/LEASING

A major development in management practise which was noted during the field work phase was the large number of firms in the general transport area who were either contract hiring their vehicles, or contemplating doing so. As already discussed the advent of vehicle leasing resulted in far reaching changes in the organisation of the distribution function in the retail industry, with important effects on operators engaged in that sector. The contract hire of vehicles has however more general implications for the road transport industry as a whole.

This was not an area which was of primary interest to the research, but because of its widespread existence it was decided that the Thesis could not ignore it. This is especially so since, as will be discussed below, the practice appears to be spreading to operators who would have traditionally reacted against the suggestion, and also because evidence surfaced which indicated that some manufacturers of commercial vehicles have entered the field.

These manufacturers may very well extend their activities in the future to areas more normally thought of as the province of the transport operator. For these reasons the future impact on the industry of this development cannot be ignored.

## BENEFITS OF THE SYSTEM.

There are basically two standpoints available when examining the benefits of contract hire, that of the operator and that of the customer.

The operator receives two main benefits, on the one hand he obtains a long term commitment for the vehicles which are subject to the agreement. One of the main difficulties in operating a general haulage business is matching capacity to variations in demand. The goods vehicle is an indivisible item of plant. A 30 tonne vehicle cannot be converted to a 15 tonne one by cutting it in half, if it is underutilized the fixed elements in its costing structure still have to be met, and since these are usually the greatest proportion of total costs, such underutilization is expensive. If the haulier knows that a contract hire customer is prepared to enter into an arrangement covering a specific number of vehicles, then once the contract is signed, the problems of planning are no longer his concern. Vehicle utilization is then the problem of the customer.

In much the same manner, many sectors of the road transport industry are subject to severe competition, competition which very often makes the calculation of quotations a pressing and complicated problem. After the initial negotiations, a contract hire agreement removes this problem from the transport managers desk- especially when it is borne in mind that many contract hire

customers will be looking not only at price, but at a wide range of other characteristics. In over the phone business it can be difficult for the operator to push these non price elements whereas during the more protracted contract hire negotiations, such elements can be considered at length.

The operator may of course not be the seller of contract hire but the consumer, and there are many advantages claimed for this method of acquiring vehicles.

The ownership of the vehicle remains with the specialist over the life of the agreement, the operator therefore does not need to concern himself with the calculation of depreciation rates, nor does he have to concern himself with the variations in the second hand market as the vehicle approaches the end of its working life.

The vehicle is funded from its earnings over the life of the contract hire. The fact that it is revenue funded , at a fixed and known rate, leaves the operator free to use any spare capital as he thinks fit.

The costs of the contract hire arrangement are known this allows the haulier to calculate the financial burden on his operations very easily. It is also possible to remove routine administration of the vehicles by building this into the contract terms. Such a clause would allow the operator to concentrate more heavily on the other aspects of his business.

Contract Hire Growth

Number Of Vehicles

| Year |        |
|------|--------|
| 1983 | 9,760  |
| 1984 | 11,308 |
| 1985 | 13,581 |
| 1986 | 23,769 |

Exhibit 66

To illustrate the growth of vehicles under contract hire arrangements.

Source: British Vehicle Rental And Leasing Association

Contract Hire Growth

Growth Of Sales Of Largest 50 Contract Hire Firms

| Year. |        |
|-------|--------|
| 1984  | 138.5  |
| 1985  | 158.06 |
| 1986  | 184.03 |

Exhibit 67

To illustrate the growth of the largest 50 contract hire firms.

1983=100

Source: British Vehicle Rental And Leasing Association.



These advantages either as a provider or user of contract hire have not escaped the attention of the transport industry and many organizations are moving rapidly to its use- sometimes in both modes within the same firm.

#### **SIZE AND NATURE OF MARKET**

Exhibit 66, shows the dramatic increase in the contract hire market from just under 4,000 vehicles in 1983 to around 24,000 in 1986, an increase of some 143% in 3 years, and as shown in Exhibit 67, the sales turnover for the top fifty contract hire companies has grown by 84% over the same period. These data are from the British Vehicle Rental and Leasing Association (BVRLA) which claims that its members account for about 45-55% of the total United Kingdom market, this implying that the total contract hire fleet is in the region of 50,000 vehicles. These are spectacular statistics by any standard. More and more hauliers, and not just the larger firms are seeing contract hire as a means of extending their business activities with the bonus of added security and in some instances a decrease in management overheads. To fully appreciate the reasons behind the growth in contract hire, and to attempt to resolve some of the confusion surrounding the term, it essential that this discussion commences with a definition of just what is meant by contract hire.

## CONTRACT HIRE DEFINED.

At least three definitions of contract hire can be found in the literature an indication perhaps, of the potential pitfalls awaiting the unwary in this rather complex area;

*"The lessor provides the lessee with a taxed vehicle for a fixed term at a fixed price determined at the outset of the contract. The lessor is responsible for the depreciation, and on termination of the lease the vehicle is returned to the lessor. Contract hire can be with, or without, maintenance the agreements normally run for about two years."* World Leasing Yearbook United Kingdom Section 1986.

*"Contract hire is no more or no less than a leasing agreement with maintenance. Leasing being defined as payment for the use of an asset which can never be owned by the person paying the rental."* BVRLA Course Notes, Vehicle Finance Leasing & Contract Hire Autumn 1984.

*"Contract hire is a leasing agreement with value added. This value added in its simplest form is maintenance but may also be extended to include insurance, tax, driver, and a host of other services."* BVRLA Statistical Survey 1986.

It should be noted that contract hire differs from rental agreements. The principal difference relates to the time periods involved. Rental is usually regarded as being essentially short

term in nature, and is normally available on hourly, daily weekly or similar short term arrangements. Contract hire represents a long term commitment by the parties to the agreement and usually lasts from 2 to 5 years. The other major difference between the two activities is that contract hire might very well provide a wide range of services whereas rental is confined to the use of the vehicle.

In the course of discussion with hauliers it became evident that many of the larger organizations such as Wincanton will provide both contract hire and rental, the rental aspect frequently complementing the basic contract hire agreement with reserve vehicles provided to meet unforeseen upsurges in demand.

#### **VEHICLE MANUFACTURERS AND CONTRACT HIRE.**

The participation of commercial vehicle manufacturers in the contract hire market has been one of the most important and interesting recent developments.

The potential "market muscle" of such companies may very well have drastic results within a movement which seems already set to have dramatic influence on the operations of transport managers, if that muscle is actively deployed.

Prior to 1985, there was virtually no manufacturer involvement in the contract hire market, they appeared to be quite happy to observe the impact the activity was making on the commercial road

transport sector and appeared to feel that it had no real import for them as suppliers of the basic capital asset. Up to that time they obviously were of the opinion that the structure of the industry did not affect themselves as long as SOME organization purchased their products.

The spectacular growth of the contact hire sector did however, bring with it some important problems for the commercial vehicle manufacturers. These can be summed up in the concept of the power of large buyers. It must be remembered that the hire and reward sector had been traditionally made of large numbers of small scale firms, the emergence of large, organizations, headed by very skilled negotiators was a phenomenon which, to some extent, caught the manufacturers off guard.

Contract hire companies demanded - and received- a number of important concessions from the manufacturers, concessions which the manufacturers at first perceived as a good way to do business but which eventually posed a threat they could not ignore.

**Discounts,** the contract hire companies with their orders for large numbers of vehicles successfully pressured the manufacturers to allow substantial discounts on their admittedly large purchases. J. Ash , Contract Hire Manager for Scania GB Ltd. for example, commented on 18th. January 1988 that a figure of 10% discount on listed price was very common, even greater figures were available on specific models of unspecified competitor companys' ranges.

Guaranteed buybacks, this type of concession involves the vehicle distributor purchasing the vehicle/vehicles back from the contract hire operator after an agreed time, at a price determined when the vehicles were originally sold by the distributor. The contract hire organization has always had the option of selling in the open market if it happens to offer prices greater than those which were agreed in the buyback arrangement. Most manufacturers are involved in financial assistance to their distributors when buyback arrangements are made.

Spares, in the same manner contract hire companies frequently receive substantial discounts on service and spares for their fleets from the distributor network which was the source of their purchase. Such discounts for large numbers of vehicles will obviously reduce the overall financial performance of the distributor and can act as a source of bad feeling towards the contract hire sector. At the same time this activity provided a source of dealer pressure on the manufacturers to "do something" about the power of the contract hire companies.

Ash *ibid*, pointed out that most commercial vehicles manufacturers seemed content with about 25% of their vehicle sales going to the contract hire companies, this in effect, acted as a secure market which allowed the manufacturer to inject some element of certainty into their production plans. The same source forecasts that over the years to 1990 this percentage will grow to around the 30-40% level, and this magnitude could seriously affect their interests.

There would appear to be two main areas for their concern; the scale of discounts and payback guarantees and the effect of these and the service and parts discounts on their distributor network. The cumulative effect is that the commercial vehicle manufacturers perceived the growth of contract hire as a threat to their medium term, and indeed long term profitability.

#### **SOME EXAMPLES OF MANUFACTURER SCHEMES.**

The first manufacturer in the United Kingdom to decide on entry into the hire market was Volvo . This was done in 1985 in partnership with its existing dealer network through a jointly owned company Ailsa Truck Finance.

The target market is identified by Volvo as any operator in the industry who utilizes vehicles of 7.5 tonnes and above. The company does not appear to follow a policy of segmenting the market and targeting specific parts. Ailsa is especially interested in any transport firm which has not already been engaged in the contract hire market.

There are dangers for the commercial vehicle manufacturer in attempting to enter the contract hire business. The most important is the possible boycott of their vehicles by the existing contract hire companies who would obviously perceive the manufacturer as a competitor. Volvo were well aware of this possibility and declared at the outset that they saw themselves as not being in

competition with the traditional contract hire companies. This of course is not the case since as mentioned above, Ailsa do not claim to follow a policy of market segmentation, but target the entire catchment area. Volvo nevertheless mounted a public relations style campaign aimed at the contract hire sector to guard against any possible boycott.

M. Beasdale, Fleet Sales Manager of Volvo trucks, claimed in February 1988, that Volvo was the 18th. largest contract hire company in the United Kingdom. This would seem to indicate that after the public relations exercise, Ailsa Truck Finance set about recapturing some of the customers which Volvo had lost to the normal contract hire companies. Erskine 1988.

In early 1987, Scania the Swedish multi national has also entered the contract hire market with Lifeline Lease. They again claim to serve anybody operating their types of vehicles, that is goods vehicles of 16 tonnes and above. Lifelines contract hire manager further defines their prime target area as "operators with ten or less vehicles and or those with inadequate maintenance facilities." J. Ash, contract hire manager 1987. It is interesting to note that Scania have also felt it necessary to claim that they are not in competition with the larger contract hire companies and indeed became engaged in a public relations campaign similar to that which Volvo introduced. Erskine op. cit.

DAF, and Foden have also directly entered the market. Leyland and the other manufacturers have not decided as yet (early 1988) to enter the fray, but they are actively involved in assisting their dealers to set up their own independent schemes.

#### **FUTURE DIRECTIONS FOR MANUFACTURERS.**

Virtually all manufacturers engaged in the contract hire sector have shown a marked reluctance to try and compete head on with the traditional contract hire companies, the major reasons for this have already been briefly discussed above. The question must therefore be asked, where is the future likely to lead the contract hire market?

There are basically two scenarios involved here, on the one hand the commercial vehicle manufacturers may call it a day and either withdraw from the market or scale down their activities, on the other hand the traditional contract hire companies could accept a low key activity from the manufacturers or simply remove them from the market through the normal processes of competition, and go on to establish a large contract hire sector within the general umbrella of transport operations.

The actual situation is likely to be that the manufacturers will continue to be reluctant to seek direct confrontation but will wish to remain active in the market, they must therefore seek new directions.



## CONDITIONS IN THE MARKET PLACE.

The conditions which prevail within the market place make it almost certain that the commercial vehicle manufacturers will be able to expand their business without confrontation with the traditional contract hire companies. This is due to the fact that the traditional operators have avoided some segments which the vehicle manufacturers may very well find attractive, not least because they allow them the possibility of initial entry without that confrontation

## COST COMPETITION.

All the evidence reviewed in Division One of this Thesis suggested that the road transport industry-except for certain specialist sectors- was not one where price was the sole or even the major factor examined by a buyer before making a purchase decision. It is unlikely then that the manufacturers would be able to compete purely on a price basis with the traditional contract hire companies, even if they so decided. The impact on the contract hire companies would be such that they would almost certainly institute the much threatened boycotts. Given this assumption the manufacturers will have to seek other methods of establishing themselves .

## SCHEME DIFFERENTIATION,

The way forward would seem to be through the application of the basic management strategies already discussed, that is through the management of the commercial vehicle manufacturer's contract hire operations targeting specific characteristics of their services which the consumer perceives as desirable, in spite of present reluctance so to do.

Discussions with the contract hire companies indicate that contracts ARE being secured on the basis of non price factors such as speed, quality of service, and reliability. Many customers appear willing to pay higher prices to secure these attributes.

Customer and market segment targets are being increasingly seen as a way towards gaining a secure niche in the business.

Customers are becoming much more sophisticated in their demands and the successful firm must appreciate this. The putting together of specialist packages aimed at designated markets and or customers is a sure way forward.

The National Freight Consortium sees the future for its contract hire division as lying in the food distribution sector. NFC have targeted this area and already have secured contracts with Sainsbury and Mars. Dawson Rentals based in Coventry have decided to target the Services with particular emphases on the Army. The list goes on but the basic lesson is obvious. If an organization wishes to succeed in this area (or any other modern transport

sector) the old shotgun approach of "Servicing the entire market" must go. Modern market/customer segmentation and targeting is the way to growth. Commercial vehicle manufacturers will eventually have to comply if they wish to survive-when they see themselves as being in direct competition with the traditional contract hire companies.

#### **FUTURE GROWTH AREAS.**

The problem facing manufacturers, and indeed other contract hire companies is how to expand the overall market for contract hire vehicles. It is not the function of this Thesis to dwell too long on this area, but a brief foray will further illustrate the need for a modern market based approach in transport management to secure future growth.

On January 27 th. 1988 the Financial Times commented on a Survey undertaken by the University of Birmingham on behalf of a group of Local Authorities into the Local Authority transport fleet in England and Wales. The survey concluded that there was a combined fleet of some 100,000 vehicles excluding those in use by the police, and the health and education services. They also concluded that the Local Authorities purchased approximately 13,000 vehicles per annum at a cost of roughly £200 million. In terms of numbers of vehicles operated commercial vehicles accounted for about 53% of this fleet.

This is a vast market as yet (February 1988) untapped by the contract hire business. In the past local authorities have been very reluctant to consider contract hire, it is believed that the main reason for this is a fear of losing control over distribution, and a distrust of the reliability of the contract hire sector. " *The perceived effectiveness of transport is of great importance to them; anything which obstructs the availability of performance of the service is a cause for concern. The loss of direct control is therefore seen as a threat*" R. Bristowe, Contract Hire For Public Authorities. Truck Rental and Contract Hire Conference, Motor Transport, October 29th. 1987. This will obviously be a tough market to enter, but for the firm which succeeds the rewards will be high.

Transfleet visited all 400 local authorities in England and Wales between 1986-87 in an attempt to target this sector. They received only 120 direct enquires, which resulted in 60 financial packages being drawn up, yet only 6 local authorities had decided to go to tender by October 1987. Yet the management of Transfleet estimate that by 1992 20% of all local authority vehicles will be under contract hire agreements. (Discussed by C. Jepson, Operating Contracts for the Public Authorities, Truck Rental And Contract Hire Conference, Motor Transport October 29th. 1987.)

Transfleet are in other words, examples of the new approach to marketing in the road transport industry. They have targeted a segment, have carried out a first assault, and although repulsed

are confident that future success will attend active marketing effort. From the point of view of the researcher, the interest in Transfleet was not specific to the move into the Local Authority market, but because of the management approach involved. Transfleet based its decision not only on a desire to reach a large market but on assessment that as the central government continues to reign in the spending of Local Authorities, forces them to put services out to tender, and make them more sensitive to accusations of overspending, then they must eventually turn to the contract hire segment. It is precisely the opposite to the assessment of marketing ability of the road transport industry which the Price Commission report, *The Road Haulage Industry, 1978*, op. cit. made regarding *"the general lack of interest in all but the largest firms in the positive promotion or selling of their services and in general forward planing of the business."*

In the opinion of the researcher this particular market poses some formidable problems, and is probably more attractive to the commercial vehicle manufacturers involved in contract hire. This belief is centred on the "public good" aspect of Local Authority activities. The financial attractions of contract hire may very well seem desirable, but all Local Authorities are very aware of the problems which can arise if redundancies are an integral part of any policy decisions, especially in Labour controlled Councils. The schemes operated by the manufacturers are normally for vehicles use only, that is there is usually no driver contracted with the vehicle, this would allow the Local

Authorities to maintain employment, and although the manufacturers like to hold some maintenance agreement some compromise could easily be reached. A way forward might be for the manufacturers to purchase the fleets from the Local Authorities and hire them back. Initially of course this would involve the manufacturers acquiring marques other than their own, but they would obviously negotiate the right to replace vehicles with their own badges. Maintenance could be carried out by either Local Authority labour or by a combination of this and commercial vehicle manufacturer employees.

#### **CONTRACT HIRE COMPANIES AS CUSTOMERS.**

M. Beasdale, Fleet Sales Manager for Volvo Trucks, pointed out in the course of an interview February 1988, that the contract hire companies themselves might be a possible market segment for the commercial vehicle manufacturers to target for their own contract hire interests. The traditional pattern was for the contract hire company to purchase the vehicle from the manufacturer and then hire it out to the final customer. Volvo foresee the contract hire company entering into a contract hire arrangement with the manufacturer and then a further hire agreement with the final user. The main advantages are seen as maintaining good relations with the contract hire companies and of course it secures more of the parts and services market for the manufacturer, a traditionally profitable area. The main interest for the researcher is once more, not so much the actual transaction, but the

Parcels Sector

%Growth of Express Sectors

|                           | 1986         | 1987  |
|---------------------------|--------------|-------|
| Service Type.             | Market Value |       |
| Overnight/next day        | 375£m        | 441£m |
| Other guaranteed services | 90£m         | 111£m |
| Non guaranteed services   | 540£m        | 533£m |

Exhibit 68

To show the movement away from non guaranteed services to next day services.

Source: Financial Times 16/3/87.p 34.

injection of new more professional management approaches into the industry.

#### THE EXPRESS PARCELS SECTOR.

The final area to be reviewed in this section on major changes in the transport industry is the express parcels sector. This is once again an area where traditional management approaches have been swept aside, where high investment and modern management are the characteristics of the pace setter firms, and where traditionally managed companies have been swept from the field.

#### SIZE OF THE MARKET

The market is subject to intensive competition and because of this most operators are very protective of any estimates they have made concerning market share size, and segmentation of the market. There are no nationally provided figures, nor was anybody prepared to disclose the size of the West Midlands market, although the researcher received the very strong impression that operators themselves had no very accurate estimate on a geographical basis.

The National Freight Consortium, and the financial Times (Survey 16/03/87) have however published tentative figures based on the 186/87 market which are reproduced in Exhibit 68. The interesting trend is the expected move away from non guaranteed



services to the guaranteed type, with non guaranteed demand expected to fall from 54% of the total market to 49%, and overnight and next day services moving from 37% of the market to 41%. The overall share of guaranteed services was expected to move from 46% of the total market to 51%.

#### **NATURE OF THE MARKET**

There are four main types of company operating in this particular sector;

The Major National Company which operate through their own depot systems, such as TNT, Lynx, Multifreight and Wilkinson.

Small National Companies such as Target and Placketts who will operate in a base area, such as the Midlands and with associated companies to obtain national coverage.

Franchised companies co-ordinated through a central office established by the Franchisor such as Interlink, Network Overnight and Night Freight.

Local operators such as Crowfoots who will restrict themselves to a local area and if further movements are required, channel them through one of the Major or Smaller National companies.

The product itself is very differentiated, illustrating a significant degree of market and price segmentation on the part of the major and smaller nationals. It is probably accurate to say that this degree of management professionalism was introduced into the sector in a star burst in May 1980, when the Australian

company TNT launched the first overnight service, " TNT Overnight". The effect on this sector of this one dynamic organization has been far reaching with effects throughout the road transport industry, not only within its original target sector.

## **MARKET SEGMENTS**

The 70's and 80's saw increasing attention being paid to the inventory holding function, this resulted in United Kingdom management becoming very aware of the advantages which can accrue with lower stock levels, consistent with the firm's customer service level position. At the same time the JIT concept was becoming widely accepted throughout manufacturing industry and this created a demand for the rapid transport of small to medium size consignments. The transport industry responded with the following services eventually being offered by significant numbers of operators.

**Traditional Service** this type of movement has always been provided by the road transport industry, the main characteristic being that there is no explicitly stated time of delivery. This could range from about 3 days maximum down to 1 day , depending of course on the destination. A maximum of 5 days was usually required for the more remote parts of the United Kingdom.

**Guaranteed Services** these were gradually introduced as a result of customer demand. Their main quality , as the name suggests, is

that the customer is assured that delivery will be made within a stated time. This service invariably attracts a price premium which varies with the target segment, but can be anything between 50-200% above the traditional services tariff. These services are themselves the subject of further segmentation.

**Guaranteed Next Day** this promise of next day delivery introduced by TNT was the great watershed since it implied a very different level of management performance from either traditional or simply guaranteed deliveries. As the name indicates delivery next day from collection is the performance target laid down.

**Guaranteed Next Day A.M.** these represent perhaps, the ultimate level of guaranteed service where delivery is ensured before 12 noon next day after collection

Price differentiation obviously follows on this market segmentation. Guaranteed Next Day deliveries carry a premium of about 50% over next day deliveries and 100% for Saturday deliveries rising to 150% for collection on Saturday and delivery on Monday morning.

It is also possible to buy a service which will guarantee delivery within specified times before noon, such as between 09:30-10:30 and so on. These services naturally incur further price variations usually about 75% up on guaranteed next day A.M. delivery

charges.(All price data calculated from published lists of  
Multifreight and Interlink.)

In the ultimate market sub segmentation move, TNT have introduced a premium flag ship "Sameday" service which employs a combination of their own facilities and and National Express coaches to provide daylight hours delivery of small parcels.

It is interesting to note that after the initial period of intense growth and competition in these services settled, management realised that further down market segmentation could take place. Guaranteed 2 Day and 3 day services were introduced, in recognition that some customers might not desire the high cost services but would be attracted to a known time of delivery, relatively fast service.

Operators have continued to attempt growth by further segmentation not all of it successful. A high growth area for the future would appear to be in secure movements, and attempts have been made to enter the home or domestic deliveries area. The likely extension of IT technologies into home shopping have already been discussed under the section on food distribution, many of the more aggressive operators have already targeted this sector as an area for growth and have been making attempts to enter the market.

Federal Express have become involved with Great Universal Stores in the operation of the White Arrow service aimed at mail order shoppers. In 1982 TNT attempted to enter the sector with its Homefast service which was designed to operate on a five day week basis. The Post Office however, aware of the threat which the transport operators were already posing to its traditional parcels services, reacted very positively and in fact TNT were forced to exit the market within the year. The latest moves would appear to be growth by expanding the geographical base of their market. The more thrusting firms such as TNT feel that the United Kingdom market has reached maturity and no longer offers scope for the rapid growth rates they desire, whereas Europe and Africa do, consequently they are moving in those directions.

#### OPERATIONS CHARACTERISTICS

The level of management sophistication implicit in the market segmentation and its exploitation, are qualities very different from the image of the transport operator of 1978, but it must be remembered that this improvement in management skill did not occur spontaneously but was to a very large extent pulled into the industry as a result of the dramatic changes in operations which the new approach involved. This effect was re-enforced by the previously undreamt off amounts of investment required to satisfy the performance targets held out to the customer as marketing strategies .

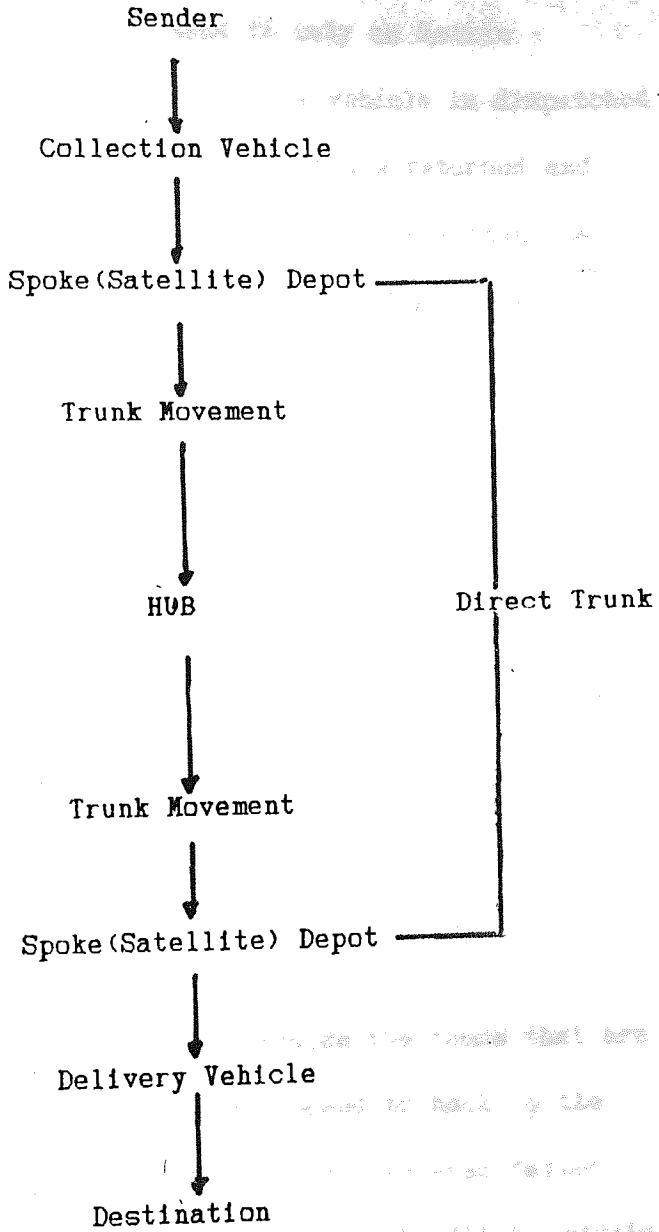


Exhibit 69

To illustrate Hub Operations in express parcels delivery.

Traditional and smaller operators tend to rely on Matrix operations systems. Under such operations a vehicle is dispatched from a local depot to make collections which are returned and sorted at the depot and tracked to regional depots within the firms matrix. At the regional depot, further sorting may take place either for delivery from the regional depot, or for movement on to further local depots in the network prior to local delivery. At the smaller end of the market, collection sorting and delivery, all may take place from the same depot. Irrespective of which of these operating patterns are undertaken, certain limitations are obvious. On the one hand, national deliveries are impossible without some form of associated company or sub contracting, whilst at the larger scale of operations, a great deal of time is expended on movement, sorting and refinement.

Only the Major National operators can provide the funds that are needed to install the operating systems needed to back up the promise of guaranteed next day deliveries and the even faster services. A brief examination of the TNT approach will illustrate this, although it must be borne in mind that other similar sized organizations operate very similar facilities.

#### **HUB OPERATIONS**

One answer to the problem of national delivery and drastic reduction of through time for the network, is the Hub operation system. Exhibit 69, illustrates the TNT approach.

The entire system can be compared to a wheel with a central Hub and routes leading to and from it in a manner akin to spokes. Local depots are located in the spokes with a central sorting facility at the hub. Consignments are moved from the local depots along the spokes to the central facility where they are sorted and moved onwards down the required spoke for local delivery from the appropriate depot.

Vehicles will leave spoke depots in the morning to make deliveries and collections from their local area. Any local traffic will be segregated and dealt with at the spoke depot. All other traffics will be concentrated into large vehicles for movement onto the Hub. Once at the Hub sorting and movement is carried out on automated facilities providing rapid movement through the installation. Laser read bar codes are employed to identify each parcel and consignment, computer controlled selectors guide each unit to the correct trunking vehicle for movement down the assigned spoke to local depots for delivery.

The TNT system can handle up to 15,000 parcels and up to 700 palletized tonnes per hour, and can process parcels of up to 50 kilos. The company claim the system is designed to ensure "soft" handling throughout the process and can load a trunk trailer in approximately 30 minutes.

The level of investment required for this type of operation is high- a sum in the region of £7 million has been quoted by the



company as representing the investment required for new facilities. It is obvious that such sums are beyond the reach of any but the largest organizations. It is also equally obvious that the management of this type of operation requires a high level of skill and expertise- well beyond the traditional capabilities of the mid 1960s hauliers.

The results of the field work survey quoted in the discussion later, illustrate the varying attitudes to qualification and training between the smaller organizations and the Pioneers.

#### **ALTERNATIVE SYSTEMS**

It was part of the field work to ascertain if the changes discerned in the customer profiles had had any effect on the nature of technical operations within the industry. The emergence of the Hub system and its competitors is probably the ultimate expression of that linkage, but by no means the only one.

The dynamic nature of the express parcels sector has been mentioned several times already, but the need for smaller companies to respond to the ever increasing demand from the customer for faster deliveries has provided yet another example of how the more market responsive sector of the industry can act.

**Multifreight systems** This operator ( a subsidiary of Bunzl P.L.C.) believed that the Hub system did not fall within their operating

plans, nevertheless they had targeted the express freight delivery segment as one for future growth. Their approach was to conduct an analysis of the complete operations sequence from collection through trunking, handling and delivery. The company came to the conclusion that there was significant room for improvement in the physical handling operations of any collection and delivery system. The company was also of the opinion that alternative systems to the "traditional" hub could offer effective competition.

Their solution was to develop a module which could be loaded by the customer, easily transferred onto local collection/ delivery vehicles called "Minifreighters" and be moved back to base. At base these modules are transferred for trunking movement to "Maxifreighters" which move the modules to appropriate satellite depots to be transferred back to "Minifreighters" for local delivery/collection operations. Speed through the system is guaranteed by the use of sophisticated computer routing. All Satellite stations are on line to the Rugby Base Depot so that information for next day destinations can be fed into Rugby control. This allows the computer to compute destination sorting of "Maxifreighter" routes for next morning's operations.

Although this approach bears some relation to Hub operations, through the use local depot movements to main base, the introduction of patented modular vehicles, make it in reality, a

very different operation. It provides another illustration of the new face of transport management in the 1980s.

A further example of the more professional marketing approach, also introduced by Multifreight, are their Groupfreight and Fleetfreight options. Groupfreight is simple segmentation through the targeting of heavyweight consignments, and Fleetfreight aims to sub segment normal users. There are many examples of both own account and hire or reward operations which prefer to deliver themselves in their own local area, but who for a variety of reasons would also like effective national deliveries. Fleetfreight helps in this area by selling or leasing "Minifreighters" and their modules to such operators for use locally, but who can then transfer them to the "Maxifreighter" network for national distribution.

#### **FUTURE DEVELOPMENTS**

**Tracking Systems.** There are many risks in shipping material by any mode, customers will frequently complain that consignments have not been delivered when they have, or that they arrived in poor condition when they did not. The market places great emphases on the operator being able to show Proof Of Delivery. Parcel tracking systems have been introduced by TNT and its major competitors which not only allow an upgrading in operational information, by being able to show the "state of play" in the network, but can provide proof of delivery information and/or the

location of a parcel virtually instantaneously. costs are VERY high.

Parcel points. This is an attempt to extend the market penetration by setting up what are in effect collection points for the operators services at non traditional locations such as filling stations. Customers can take their parcels there themselves, which might be more inconvenient but allows them greater time flexibility. TNT operate more than 420 "Dispatch Post/ Parcel Offices at a variety of locations, for example Coventry Bus Station

Other developments are being introduced at a very high rate, such as Parcel Stamps, an attempt to encourage customer loyalty and at the same time improve the cash flow of the operators. They operate like postage stamps, occasional users of a service purchase Parcel Stamps in advance. They are sold on a "units" basis, reference is made to company lists which lay down the number of "units " required for a particular service. The requisite number of "units" are attached and the local depot phoned to arrange collection when appropriate. "Lynx" distributors for example, require 5 units for their 10 a.m. guaranteed next day service, 3 for next day guaranteed, 2 for 3 day guaranteed and 1 for their economy service, all for UK mainland delivery of up to 5 kilos parcels. Appropriate variations are published for other weights up to 70 kilos. The publicity is specifically aimed at

small or infrequent users of parcel services..Lynx publicity material.

It is also interesting to note that Lynx Express Delivery Network have entered the information technology market. The company sells the "Lynx Manager" an IBM compatible system designed to be operated in the express parcel delivery sector.

### CONCLUSIONS

These three sectors are not, by any means, exhaustive of the rapid changes that have overtaken the road transport industry in the past decade or so, but they are very illustrative of the new management which has emerged within the front runners of the industry.

The most outstanding change has been in the professionalism of the transport manager. This can be seen in the new titles which have emerged and the different educational background which these managers have from their counterparts of the 60s and 70s. Fleet Operations Manager, or Operations Manager, Customer Liaison Manager, Technical Support Manager, are all titles which the Pioneer firms use. Marketing Co-ordinators, Marketing Managers, Research Managers, terms which in the pre 1980s were seldom encountered in the road transport industry now proliferate, and are taken by the researcher as a priori evidence of a change in attitudes.

The use of modern IT methods is virtually universal in the cutting edge companies, as discussed in the analysis of the field work. In many instances this has been as a result of customer led demand, especially in the food distribution sector, and in those manufacturing areas where JIT systems have been introduced. It must be remembered that in the express parcels market, much of the systems innovation has been operator led, perhaps as a result of changing demands in the market certainly, but in 1980 TNT set the standard to which other operators had to react. The customer has certainly seized the product with gusto, but the Pioneer firm had to introduce the service in the first instance.

The increased degree of management sophistication, especially in market and customer segmentation is without doubt the key stone which underpins these changes. The marketing effort of the typical road transport firm may not have progressed too much beyond that emphasised in the 1978 Office of Fair Trading investigation into Road Haulage op. cit., but for those companies which were the object of this project, that is, the high success, fast growth rate firms, a totally new portfolio of skills has been acquired.

## CHAPTER 31 THE FIELD WORK.

The questions raised by the sensitizing study, and the results of the initial analysis of the data collected from the Applications And Decisions publications, resulted in the drawing up of the questionnaire and its application to selected companies within the West Midlands Fleet. To ensure that this was carried out within the framework selected for the project two main action areas had to be decided; the sample size to be visited and the actual selection of the individual organizations concerned.

### SAMPLE SIZE.

The most obvious, and in many ways the most difficult step to be carried out, was the selection of the sample size. Ideally of course the entire population would be subject to the questionnaire, but size, complexity and cost, rule this approach out. It was therefore necessary to determine a sample size which would never the less reflect the general trends of the total population at acceptable levels of accuracy.

The literature abounds with formulae for determining the size which such a sample should be, however there also seemed to be many problems associated with the effective calculation of sample size for the type of questionnaire which was deemed necessary for the research at hand. As Luck, Wales, Taylor and Rubin 1982, point

out "The question of an appropriate size of sample is complex, for a sample that is large enough for the researcher's objectives is probably going to be too large for the amount of time, money and personnel available for the study. It is the trade off between the added information and the added cost and resources used that makes the determination of the appropriate sample size difficult." With this in mind a short review of the problems faced is considered apposite.

#### THE TEXT BOOK APPROACH.

The literature by and large divides the question of deciding sample size into two separate situations. Firstly, when the desired objective is to come to some conclusion concerning the mean of a particular subject, and secondly, when a proportion or percentage is the object of an investigation. There are common elements in each situation.

#### INVESTIGATING THE MEAN OF A POPULATION.

When the mean of a population is the subject of investigation three factors, or estimates of them, are required before a sample size decision can be made. The heterogeneity of the population, that is its variance. The size of acceptable error in the investigation. The confidence level considered appropriate. The heterogeneity of the population refers to the degree of variation which is likely to be encountered within the subject



population. The greater this is, then the more likely a large sample will be required for a given level of accuracy. In statistical terms, for the purposes of determining sample size the quality included under this term is the standard deviation of the population parameter.

The magnitude of error or the confidence interval, defines in statistical terms how precise the estimate must be. In the majority of cases the decision concerning this factor will be a function of the use to which the information arising from the sample will be put. If, for example, we were discussing the test marketing of a new product, and the decision based on the sample results would be taken as the indicator either to press ahead with the construction of a new production line or not, then the level of precision demanded would most likely be very high.

The third factor, the confidence level is one which is very much influenced by convention. Typically a confidence level of 95% is employed. That is there is a 5% probability of the population parameter being incorrectly assessed. This is an arbitrary position and there is nothing sacred about the .05 level.

#### **ESTIMATING SAMPLE SIZE.**

To estimate a sample size bearing the foregoing in mind, is a relatively straightforward procedure.

An estimate is made of the standard deviation of the population.

A judgement is made concerning the acceptable magnitude of error.

The confidence level is decided upon.

Once these steps have been carried out substitution in a simple formula produces the desired sample size.

$n=ZS\div E$  Where  $n$ = The sample size

$Z$ = A standardized value indicating a confidence level

$S$ = An estimate of the population standard deviation

$E$ = Acceptable magnitude of error.

This is of course an apparently straightforward procedure, there are however some difficulties when it is attempted to apply this approach to the real research situation, a point perhaps better illustrated by the second type of problem encountered when sample size decisions have to be made.

#### **SAMPLE SIZE WHEN PROPORTIONS ARE INVOLVED.**

These situations arise when the research is interested in the percentage of frequency of occurrence. A situation very much more akin to the problem faced in the research project under discussion. For a confidence interval to be constructed around a sample of a population, an estimate of the standard error of the proportion must be calculated and a confidence co-efficient specified.

The precision of the estimate can be indicated by the value-

$$Zc1Sp.$$

The plus or minus estimate of the population proportion is-

$$\text{confidence interval} = p \pm Zc1Sp$$

Since the 95% confidence level is the most commonly employed from the standard tables  $Zc1$  will be equal to 1.96.  $Sp$  is given by the formula-

$$Sp = [pq/n]^{1/2}$$

Where  $Sp$  = estimate of the standard error of the population.

$p$  = number of successes.

$q$  = (1-p) or number of failures.

$n$  = sample size.

Zikmund 1982 gives a simple illustration of the above formula in operation. If in a sample of 1200, 20% recall seeing a particular advertisement then;

The proportion of success ( $p$ ) = .2

The proportion of failures ( $q$ ) = .8

To estimate at the 95% confidence interval;

$$\text{confidence interval} = p \pm Zc1Sp$$

$$= .2 \pm 1.96 Sp$$

$$= .2 \pm 1.96 [(.2)(.8)/1200]^{1/2}$$

$$= .2 \pm .022$$

That is the population remembering the advertisement would be between 17.8% and 22% of the audience of 1200 with a confidence coefficient of 95%.

It is here that the difficulties in applying such approaches to a complex questionnaire based survey, as opposed to problems such as the above begin to emerge.

In effect, to work backwards from the answer to the simple example above and determine sample size, the researcher must make a judgement about confidence levels, and the maximum allowance to be made for random sampling error. More importantly, the size of the proportion influences the sampling error, therefore an estimate of the expected proportion of successes must be arrived at. Zikmund 1982, *ibid.*, suggests these estimates be made on the basis of intuition or prior information. page 434 *op. cit.* Once this has been done then the formula below is applied;

$$n = \frac{Z^2 c l p q}{E^2}$$

where  $n$  = number of items in sample

$Z^2 c l$  = the square of the confidence interval in standard error units

$p$  = estimated proportion of success

$q$  = estimated proportion of failures

$E^2$  = the square of the maximum allowance for error between the true proportion and the sample proportion or  $Z c l S p$  squared

Zikmund, 1982, p. 435. *ibid.* again gives a simple example;

If a researcher estimated that a simple random sample of a population would show that 60% of them would recognize the name of a dealership, what size of sample would be required to confirm

this with a confidence interval of 95% and a sampling error of not greater than 3.5%:-

$$\begin{aligned} \text{substituting in the formula } n &= (1.96)^2(.6)(.4) \div (.035)^2 \\ &= (3.8416)(.24) \div .001225 \\ &= 753 \end{aligned}$$

Therefore the researcher would include 753 individuals from the population in his survey.

### **PROBLEMS IN APPLYING THESE APPROACHES**

The application of these approaches and their variations to the real world would depend very much on the framework within which they were to be applied.

If for example, it was desired to ascertain the mean response to a particular question, such as would the average expenditure by a haulage firm in our area on a particular service be within a particular figure range, then the first type of approach might very well produce acceptable results.

If the research project was concerned with attempting to ascertain the likelihood that 70% of hauliers would claim that legislation was non productive but expensive to comply with, and the project team had access to previous studies on this subject, or were extremely au fait with attitudes in the industry, then the second type of approach could very well hold many attractions. The study

under discussion, whilst having some of these characteristics in certain areas, does not fall entirely within either.

#### APPROACH ADOPTED

It was concluded that the application of either of the two main types of approach to deciding sample size, was not totally appropriate in the circumstances facing the research into the West Midlands Fleet. There were a variety of reasons behind this conclusion.

#### ESTIMATES AROUND THE MEAN.

The questionnaire sought responses on two levels. One for general questions, and secondly on more specific topics related to management policy portfolios. The overwhelming majority of questions in the survey did not lend themselves to the methods founded on the investigation of means. The object was not to discover qualities around means, but to assess attitudes to particular specific areas of interest, such as attitudes towards legislation. This was the case even in those questions designed to extract information of a more general nature. Therefore the object was not to investigate whether the mean of the population of hauliers believed that illegal practices were widespread, but to try to establish WHAT proportion, IF ANY, believed such activities existed. To employ techniques whose bases were estimates around the mean of responses was therefore felt to be inappropriate.

## ESTIMATES FOR PROPORTIONS.

The second text book approach appeared to be more suitable for the type of field work which was felt to be appropriate. There were none the less some reservations. The most important of these was again simply that the researcher did not know what proportion of the population would hold a particular view. This was not a case of not knowing with precision, but of not possessing any detailed knowledge at all, nor was there any known source in the literature which could provide guidance. It was impossible therefore to make any useful estimate of positive or negative responses to particular questions. It could not be estimated how many would respond positively to questions concerning say, the extent of price freedom they enjoyed, after all the whole object of the research was to establish the rate of response to such propositions!

At the same time for reasons already discussed, the questionnaire itself was extensive. It contained the need to respond to some 209 pieces of information in 124 questions, with the responses to 99 elements being input into the Principal Components Analysis . It would have been necessary to estimate responses to all elements if a sample calculation was to be carried out.

It is possible to reduce such calculations by concentrating only on those questions which are considered to be crucial, or likely to account for the greatest variance in the population replies.

This was again not possible, since the research project was in many ways an exploratory one. Indeed with the benefit of hindsight from a completed programme, if such a decision had been taken at the outset, then the wrong elements would have almost certainly been selected.

#### TOWARDS A DECISION.

In spite of these difficulties, a decision as to the number of firms to be included in the survey and the method of their selection had to be arrived at. The literature does help in this selection.

As has already been stated, sample size is frequently a compromise between the theoretically required numbers, and the numbers which finance and personnel dictate can be handled. The project in question attracted no funding whatsoever, and as a result financial resources were at a minimum. The personnel involved totalled one, the researcher, therefore considerations of judicious use of resources were paramount.

Sudman, 1976. puts forward the suggestion that the sample size used by other researchers can often be used as an indication of the sample size required in subsequent studies. The most recent study which had been completed and published when the research at hand was commenced, was that for the Office of Fair Trading investigation into the road haulage industry. It was from this



source therefore that some guidance was sought as to the size of sample employed in investigating the industry. It was borne in mind that the report was government funded and included a secondary study conducted by nationally known management consultants as a back up to postal questionnaires.

The study was undertaken on a national basis, the national fleet of interest included approximately 142,000 firms. The sample selected for the back up study numbered 75.

The entire West Midlands Fleet, including owner drivers, who were excluded from the field work amounted to some 1178 organizations of which roughly 658 were owner drivers. It would appear then that the entire population of growth firms in the West Midlands was in the region of 520 hauliers or perhaps 477 depending on the definition of owner drivers. At this level a sample of 30 firms would represent some 6% of the population. Luck, Wales, Taylor, and Rubin 1982, *ibid.* and Zikmund 1982 *ibid.*, both indicate that 5% of the population represents a large sample proportion, and provide formulae for scaling down sample sizes obtained by the methods outlined above.

#### **SAMPLE SIZE DECIDED.**

Taking all of these factors into consideration it was decided that a sample of 30 firms for in depth interviews would be sufficient to produce meaningful results.

It was proposed therefore that a random sample of 30 firms be selected to form the basis of the field work research. The Harris 800 system was employed to select a random sample of 40 firms from the entire West Midlands Growth Fleet which had already been input for the analysis of the structure of the fleet. The number 40 was selected to accommodate any refusals by firms to cooperate, given the reputation of the industry these were expected. The 40 firms would be worked through without replacement until 30 were interviewed.

#### HINDSIGHT.

The survey was carried out on the basis of setting up an interview over the telephone, no prior warning letter was employed, and the telephone conversation indicated that about 50 minutes would be required to complete the questionnaire.

This approach was prompted by two main considerations. The industry is a high pressure one with a great deal of business being conducted on the spot over the telephone. It was believed that target firms would be very familiar with requests of a complex nature over the telephone. In addition it was anticipated that a degree of resistance to the concept of "another survey" would be encountered, and the possibility of allaying common fears as to the nature of the survey with immediacy was attractive.

The nature of the transport industry is such that it was anticipated that if long lead times were suggested before an interview many firms would use this as an excuse to avoid the discussion. The flexibility in time of appointment afforded by the telephone also made this approach desirable.

## RESULTS.

In the event the selected method proved extremely effective. In the course of setting up meetings only 2 firms declined an opportunity for discussion. The main difficulty was that there quickly emerged the need to attend at an organization possibly the day after the telephone conversation, in some instances the same afternoon. A number of appointments were postponed but in these cases alternative arrangements were always suggested and adhered to. It quickly became obvious that many operators welcomed an opportunity to "sound off" about particular aspects of the industry which attracted their attention.

The subject of the interview varied considerably with the size of the firm. Position held varied from Marketing Director, through Distribution Director, to Transport Manager. The basic condition laid down was that the interviewee had to have influence over the growth direction of the organization.

The time required for the application of the survey varied considerably. The shortest period was approximately 40 minutes

the greatest some 3 hours. The principal variable was the degree to which the firm had firmed up its attitudes in a coherent manner, as opposed to having to crystalize them within a logical framework, perhaps for the first time.

## CHAPTER 32 SURVEY RESULTS.

The analysis and discussion of the results of the field work will be divided into three broad areas:-

General Considerations

Salient Factors.

The Principal Components Analysis.

### GENERAL CONSIDERATIONS.THE ENVIRONMENT

In the discussions that follow certain factors must be borne in mind:-

All percentages have been rounded up.

Not all respondent felt they could pass opinions on all questions in the survey.

All percentages therefore refer to answers given, and consequently need not add up to 100.

A detailed list of responses and non responses is included with the computer data in the soft binding, together with a list of firms included in the survey. Fleet sizes ranged from 3000 to 4 vehicles.

The road transport industry probably has more specific legislation targeted towards it than any other sector of business activity. The legislators -at least so they claim, are motivated by a desire to create the best conditions for the industry itself and at the same time protect the public safety. The extent to

which the public safety is protected is not really within the remit of this project, the extent to which the industry itself perceives the effectiveness of the legislation is. If legislation is seen by operating managers as a constraint on their ability to carry on their business, then obviously not only does the law have an influence on the success rate of a haulier, but if it can be shown to be restrictive then perhaps the law needs alteration.

When asked if the legislative frame work was such as to place a high cost burden on the firm, replies were, like many others in the survey, surprizing, and not what the researcher expected. All numbers preceding paragraphs refer to statement numbers in Series 1. of the questionnaire. Only what were considered to be significant topics are discussed in these sections.

#### LEGISLATION.

001. 23% of the replies indicated that in their experience managers did not see legislation as a problem at all, 27% seen it as a problem but not amounting to a high cost burden on the firm. It might be said therefore that some 50% of those who passed an opinion did not agree entirely with the view that legislation had placed a high cost burden on the firm. It is significant that 23% did however, feel that such an opinion best described their experience. Indeed some 33% of replies indicated that such a view of legislation was either about right or described their experience best.

At first glance the replies might be taken to indicate some confusion within the industry with regard to the attitude towards legislation. But this was not the case, in the course of the administration of the questionnaire it became obvious that the firms who seen the legislation as a major burden were overwhelmingly at the lower end of the range in fleet sizes. The larger fleets appeared to take a resigned view to the legislation. "We are a large national company, we can not be seen to be braking the law." Hunter Blair Regional Operations Manager Christen Salvensen. On the other hand many smaller organizations made it very plain, in very strong language that the law was in many ways a hindrance to their operations, and frequently complained of being "picked on" by the police and ministry.

#### LEGISLATION WORTHWHILE?

002. When asked to what extent they felt that any trouble and cost resulting from the legislation was worthwhile there was again an ambivalent attitude on the part of many hauliers. Significant numbers of the smaller scale operations gave an unequivocal No to the statement. Some 7% of replies not agreeing at all with the proposition. It is however interesting to note that 23% of respondents who replied felt that the statement was about right, whilst some 20% agreed that it reflected the experience of their business exactly. There certainly seemed an overwhelming majority of hauliers who were of the belief-albeit

grudgingly that legislation had brought about an increase in safety and operating efficiency which made the burden worthwhile.

#### **TOLERANCE OF LAW BREAKING,**

003. The general feeling of tolerance towards the legislation changed when managers were questioned on whether other firms besides their own actually broke the Law. Only 13% of replies indicated that they believed that law breaking was virtually non-existent.

Many managers put forward the view that once the vehicle left their depot they had very little control over the drivers, and as such they were aware of breaches of the law, even within their own firms, but conceded that the operating conditions of the industry made it very difficult to totally eliminate such behaviour. As a result of this situation a senior manager in one of the largest fleets wryly pointed out that in the real world there was no such thing as a 100% legal transport operator.

At the same time only 10% of replies indicated that they totally agreed with the proposition that most firms ignored the Law. 50% of replies indicated that either the statement was about right or a good approximation of their experience. This is taken to indicate that whilst many of the larger firms attempt to operate legally they are aware of fairly consistent law breaking within their fleet. This is however, mainly confined to what is regarded



as minor infringements such as slight overloading, speeding and hours offences.

In the course of the survey, it emerged that as for most law abiding individuals and organizations, there existed a grey area. Minor hours, loading or speed breaches, were not considered too culpable, major offences in the same area were. The distinction between minor and major was never made clear.

010. When the fruits of law breaking were examined a different picture emerged. Not one manager covered by the survey was prepared to totally agree with the statement that his competitors gained an unfair trading advantage as a result of consistently breaking the law. 27% totally disagreed with the view that competitors would gain traffics, and 23% whilst not totally disagreeing still could not agree completely that such activity would bring in business. At the same time 27% adopted a middle attitude. This was taken to indicate that either a large percentage of the law breaking which was conceded to be taking place was regarded as minor, or that as was specifically mentioned, many of those firms which did break the law as a matter of course were doing so because they were on the edge of failing. Consequently, they did not present a major threat to the majority of firms in the sample, who were after all selected from the growth sector of the West Midlands Fleet.

The offences identified as being the most common contained few surprises. Overloading was selected by 50% of managers with predictably speeding being selected by 57%. Of perhaps more interest was the fact that the use of drivers already receiving some form of unemployment payment, "Dole Money" was put forward by 37% of the sample as being a common practice. The same percentage 37% held that bribes or backhanders were common in the industry.

#### **CORRUPTION.**

This was of some interest since it indicated that for at least a substantial minority of firms the way forward in their particular market was tied up with graft. Further questioning on the subject tended to be met with broad generalizations. It emerged however, that the provision of false invoices appeared to be not uncommon in certain sectors of industry in the West Midlands.

The operation would appear to take the form of providing an invoice for a delivery of components which indicated that they had gone to one depot when they went to another, a falsification of numbers involved, or the invoice saying they had stayed at one depot when they had moved to another. On one occasion an example of an invoice was shown to the researcher which indicated that a particular component was in packs of one number when it was in packs of a smaller number. It takes little imagination to see how financial gain could be obtained by this means.

The payment of stated sums of money for the award of a contract appeared to be not unknown, and on one occasion a simple mechanism was illustrated. A company was awarded a contract for the movement of goods at a specific amount per unit, they had already agreed with the manager concerned that they would be happy to comply with the contract price minus x pence. The difference was simply paid to the employee of the customer who had secured the business in the first instance.

The full extent of these practices is not known, but it is significant that no less than 37% of the sample believed they were widespread.

The least common malpractices would seem to be Licence and Tax avoidance, these were selected by 7% of the sample. Fuel, Tachograph, and International Regulations Fiddles were obviously quite common being identified as being so by 13% of the managers surveyed.

021. 67% of the fleet sample were of the opinion that it was unlikely that any lawbreaker would be caught. The reasons behind this belief appeared to stem from the numbers of vehicles on the road, or the lack of any policing organization in British Firms to control "Backhanders".

022. Of as much interest was the fact that some 60% of the sample were of the opinion that it was unlikely that any of the

practices consistently ensured that traffics would be obtained by the firms concerned.

023. It should be noted that even when managers were adamant that law breaking was rare in their own sectors many , 80% of replies indicated that they were aware that many illegal practices occurred in other sectors. The owner driver was universally singled out as a major culprit. This was usually on the basis of hearsay, but over 40% based their statements on personal experience. The most common offences which were attributed to this sector were in the speeding, overloading, hours and maintenance areas. Maintenance was a function which was raised frequently under the "others" heading for all sectors.

Maintenance appears to be a major problem for many firms, with even the largest fleets pointing to its cost and difficulty in administration. This is a sentiment shared by many Licensing Authorities and it is of interest to note that the South Wales Authority called in July 1988 for the provision of courses on preventative maintenance because of the large number of offenders passing through his courts. Transport Week 1988.

004. The EEC and the United Kingdom government were both anxious to see the level of professionalism in transport management increased. To this end the Certificate Of Professional Competence In Road Transport Operations was introduced. This desire to see a more effective manager is certainly laudable, but the perception

of operating managers as to the success of the method employed to achieve that aim is interesting. Only 3% of managers concurred with the view that the certificate had significantly improved the skills level of managers in the industry. 30% did not agree with the view at all, and a further 30% grudgingly admitted they might almost, but not completely accept the proposition. Some 60% of replies therefore, could not persuade themselves that the certificate had achieved what it set out to do.

The less than enthusiastic reception for the CPC was uniform throughout the fleet sizes. Those few who felt it had achieved something positive, were invariably young managers or owner operators who had come into the transport world from other management areas.

This attitude can be contrasted with that towards legislation, where although virtually everybody agreed that it represented a major cost burden for the industry, many were prepared to admit that it had achieved some benefits for the industry. As will be discussed later, it is possible to discern a marked increase in the professionalism of managers in certain sectors of the industry, but they claim that they are responding to changes in the market place. If it is agreed that an increase in the skill levels of managers in transport is desirable, and given the national importance of the industry who could disagree? Then perhaps some basic changes are required in the content and format of the examinations for the CPC? It is of interest to note, that

many pointed out that they felt the examination was simply a test of memory, virtually all claimed they had achieved no benefit from the exams. It must be remembered however, that the majority of individuals covered in the survey had obtained their CPC through grandfather rights.

#### **ENVIRONMENTAL OPERATIONAL PROBLEMS.**

Statements 005, through to 009, were designed to probe the attitude of transport managers to some of the more common micro problems likely to be encountered in day to day operations. It was particularly desired to assess whether or not speed and weight restrictions were seen as major operational problems. In the event, as can be seen from the Response Summary, speed restrictions received the lowest level of selection related to operational problems, being identified by only 37% as a difficulty. With 40% selecting weight restrictions, these were again not indicated as being a significant burden on hauliers. It can be said here, that many managers did say that volume restrictions were a greater headache than total weight restriction. Indicating that perhaps utilization of existing dimensions might be a good way forward for greater efficiency, rather than simply increasing the weight of vehicles. With selection by 70% and 60% respectively, waiting and loading restrictions, together with access to delivery/pick up points, were clearly identified as the most important operational restrictions.

The waiting and loading restrictions are of course, directly a result of Local Authority actions and are usually prompted by general environmental considerations, access is very much a function of site location. As far as access is concerned, several non dedicated operators appeared to have a grudge against dedicated carriers. The proposition was that many large retailers not only gave priority to their third party operators- to be expected- but that their attitude to other carriers had deteriorated and they in fact had added to the non dedicated fleets time scheduling problem.

Dedicated carriers desired as much flexibility as possible in their own time slots for delivery, and concessions to them meant that other hauliers received much poorer schedules. The way forward in this area would appear to be either better relations with customers, or more effective use of assets, that is more effective route, and time scheduling.

#### **TECHNOLOGICAL INFLUENCES.**

Throughout the entire period of the project, and especially in the course of the sensitizing phase, it became more and more obvious that the industry was going to have to decrease its response times to market demands. It was theorised that the only areas where this was unlikely to be a key future trend would be in the stagnant traffics where speed of movement was a low priority, or where lack of awareness of its importance, was the norm. As has

been repeated many times, transport is essentially a derived demand, as such if a participating firm does not respond to changes in its customers needs, then either it will go out of business or see its share being taken away by newer more responsive firms.

In the late 1970s through the 1980s, industry in the United Kingdom at large increased its efficiency, introduced more modern production methods and became overall a leaner more time conscious entity. The rapid handling of information was a keystone in this change, and transport, or at least its more effective firms also had to follow suit.

024. The responses to this question indicated that even within this sample, specifically selected from the growth sector of the West Midlands Fleet, 57% of managers replied No to the question of whether their firm employed any kind of computer. The 43% who replied in the affirmative included all the largest fleets, although it must be emphasised that not all users were at the top end of the fleet size scale.

#### **DEPLOYMENT OF IT.**

Of the 57% who stated that IT was not employed within their firm, 34% put forward as explanation either that no skills were available for the use of IT (7%), or that they saw no application



for IT in the transport industry (27%), the remainder suggested that the cost of the system would be too high.

The group of major interest and of major importance for the industry, are the managers who believed that there were no applications for IT in transport. The basic difficulty in applying what might be termed formal management techniques within the transport firm is the large amounts of data which have to be processed. The wide range of variables; destinations, traffics, drops, pick ups, road conditions and so on usually mean that the volume of data that has to be processed becomes so large that manual calculations concerning many aspects of operations planning become impossible.

Until very recently formal planning in routing, scheduling, and fleet management in general was the exception rather than the rule. The essence of IT is not that software takes management decisions, but its ability to handle very large volumes of information quickly results in high grade information being readily available to managers. Many of the techniques which in the past were relegated to classroom discussions on "how to improve transport management", are now available on widely distributed software.

The ability of IT to provide market monitoring facilities, to produce analysis of fleet accounts and general market data, and especially to allow rapid exchange of information from remote

terminals to a central processor, all suggest that for managers in road transport which MUST be customer responsive, to deny a role for IT implies a dramatic weakness in the appraisal of the factors affecting the industry and its customers, perhaps even indicates a weakness in appreciation of the basic management skills.

The simple claim to employ IT does not of course, ensure that all the potential is exploited, but surely indicates at the very least, a management sufficiently sensitive to its environment to appreciate the basic need for high grade intelligence.

035. Some of the users had as few as 5 vehicles, and 20 or so vehicles was common. The use to which the IT equipment was put did however vary a great deal. 10% of respondent claiming to use the machines chiefly in an operational role, 20% in an administrative role and 13% for administrative and operational tasks. Those using IT exclusively in the administration role were the smaller fleets.

028-040. Relate to the extent to which the sample firms attempted to analyse their markets and optimize the utilization of their fleets through the use of up to date IT applications. A brief inspection of the Response Summary for these areas is of major interest. All responses naturally relate only to those firms which employed some form of computer in their organization.

A mere 7% of the sample claimed to employ IT with any benefit in the market research role. This was considered of crucial importance. As will be discussed in greater depth later, great emphasis was placed by all managers interviewed on the concept of Service to their customers. Many prided themselves as leading the transport industry forward, and virtually all claimed to have an excellent knowledge of their markets. Yet, only a small percentage of the total sample actually carried out regular surveys to identify market trends, Response 145. 17%. Of those employing IT 70% stated that it was not deployed at all in the market research role. It is possible of course, that IT cannot provide good market research data for the industry, but this would seem a very unlikely proposition and was moreover not mentioned by a single respondent. 17% replied that IT was employed with some benefits, and some 7% felt that IT was seldom used in the market research function. This situation must be contrasted with Response 147, when 53% of the total sample felt that they did not have an efficient sales force.

029. Some 17% of managers believed that their organization employed IT for data collection and analysis with great benefit, and 20% felt it was used in this area with some benefits. At the same time 60% of those actually utilizing IT in their business did not apply the facility to data collection and analysis.

030. 47% of users did believe that the computer had been applied to general administration tasks with either great, or at least

some benefits. 53% however, believed that even there little benefit had been forthcoming. It would appear that in many hauliers the main use to which the computer was put was in payroll calculations!

In the same vein, only 33% found that the computer produced benefits in routing and scheduling and 26% perceived improvements in fleet management, and yet as already discussed, these are areas where many firms could benefit from a more effective performance. It must be pointed out that many managers using IT in this area in fact believed that the computer did not reach the performance standards claimed for it. 67% did not use IT for routing or scheduling.

It would appear that in terms of increasing the utilization of the fleet a great deal of improvement is possible. It must not be forgotten that the ultimate core objective of the research was to identify those policies and procedures which the most efficient firms followed. It should be emphasised as strongly as possible, that not all fleets will be leaders. In all the areas discussed above, significant minorities were carrying out what appeared to be, a priori, modern approaches to market research, fleet utilization and so on.

17% of users believed that the push for the use of IT arose purely from internal sources, while 6% claimed the pressure was chiefly

external, 20% seen the introduction of IT as being as a result equally of external and internal pressures.

The low proportion claiming chiefly external pressures was at first surprising. A degree of pressure from customers would have been hypothesised as a common force for the introduction of more up to date techniques. The relatively high proportion giving both internal and external pressures however, did not differentiate between the two, and it is probably a safe generalization to say that external pressure was present in this group. The rationale behind this belief is the proportions of the sample, 20% and 24% respectively, who answered that they would be prepared to undertake warehousing and stock control functions for their customers.

037-040. A significant minority of respondents perceived the external pressures as being sensitive to time related aspects of their customers demands. 23% selected more time reliable deliveries as influencing their decision to introduce IT. 17% claimed more frequent deliveries as important. Significantly 20% introduced IT to link up with customer systems, and 14% were influenced by contractual ties with customers. All of these elements indicate that for this minority in the sample a greater degree of responsiveness to their customer's and market demands was in some way a major influence on their employment of IT.

This can be taken as perhaps indicating an important characteristic of this sub group within the overall Growth Fleet- namely sensitivity of, and flexibility of response to, changes in the market. This is reinforced upon further analysis when the highest scores in this subject are found to originate from the largest fleets in the survey.

041-044. Some 20% of the sample selected pressure from competitors as a major factor behind the introduction of IT. This can be explained through the simple competitive mechanism. Pace setters in the industry rapidly pull in other firms to the edge of innovation. The market is so competitive that contracts can be easily lost by failure to match the best available delivery times, schedules or whatever.

Only 14% thought that price pressure from customers was a factor influencing their IT decision, whilst 80% felt price pressure was not an important influence on them at all. 40% did however put forward the answer that an internal drive for lower costs and higher profits was behind their introduction of IT. This indicates that managers on the whole felt that the use of IT was somehow related to greater efficiency, although the responses to other statements concerning the use of IT, could be taken to indicate that they, by and large, had very little concept of how to employ IT within their organizations, with of course the exception of the leading minority.

Some organizations illustrated the degree of their sensitivity to customers requirements by the manner in which they were prepared to utilize non standard bodies on their vehicles. It is true to say that virtually all managers stated they would be happy to introduce new body designs if their customers required them, but only a handful of firms could actually point to this being done.

Multifreight has been discussed previously, their entire system centres around the introduction of new body design, but it is also interesting to note that \_\_\_\_\_ the Operations Manager, stated at interview in August 1988, that new business was being generated simply by the availability of the new body types because of the reduction in handling related damage which they had brought about.

TNT were of the opinion that they frequently suggested improvements to their customers handling procedures so that they could employ specific body types. This had resulted not only in higher productivity for TNT vehicles but also generated knock on effects for their customer's material handling systems.

M \_\_\_\_\_ Marketing Director TNT at interview July 1988.

Federal Express explained that they would be more than happy to introduce specific body types to meet any requirement from their customers, and had already done so. \_\_\_\_\_ Distribution Director Systemline (Federal Express.)

The overall impression which the responses to this section produced, was one of a small minority of firms at the leading edge of the industry employing the most effective management tools in their business. At a level below these, there seems to be a great wedge of firms, convinced that IT has a role to play in their attempts to improve their performance, but uncertain of how to actually apply the tools which they have invested in.

The most glaring example of this is surely in the marketing area, with transport firms constantly expounding their knowledge of the market, but few being able to actually back up general claims to excellence with hard data, trend analysis, or indeed a coherent sales and marketing policy of any kind.

The impression which the researcher received was very much one of a tiny number of active managements, pulling in their wake a number of reactive organizations- who could see the way forward, but lacked the faith and expertise to blaze their own trail. These organizations being aware of the parts which were required to build a policy of expansion, but lacking in the management skills to assemble the complete machine. In other words they were perfectly aware of the tactical requirements, but lacked the strategic framework within which to put the tactics to effective use.



## MANAGEMENT AND FINANCE.

The majority of firms in the sample were public limited liability companies, these comprising some 43% of the sample, of the remainder, 30% were private companies, 14% partnerships, and 13% being in the hands of sole proprietors. The road transport industry is one of the few areas left today, outside the professions, where partnerships are common. The largest organizations, in terms of fleet size, were public limited liability companies. That being said, many of the smaller firms displayed spectacular growth rates, one growing from birth to an annual turnover of some £750,00 in the space of 30 months. This particular example being a sole proprietor. It is likely however, that such an organizational structure will place constraints on growth finance in the near future.

The age of firms ranged from about two years to 50 years, no significant attributes emerged concerning age and growth, although the fastest growing companies appeared to be the youngest. This it was held was due to the policies being implemented rather than the age of the firm.

Some 42 % of managers held their CPC through examination. Such managers as already discussed, tended to have entered the industry from other areas. The majority of the managers held their CPC through grandfather rights and had been in the industry for some time. The majority of transport managers, 60%, had held some

other post within the transport industry prior to their appointment as transport manager.

17% of the sample held degree level qualifications, 7% "A" or "O" levels while the remaining 76% had no formal educational qualifications. With the exception of one individual, all managers educated to degree level held positions within the largest fleets, it should be stressed that not all managers in the large scale fleets had degree level qualifications. It is a fair comment however, that those firms at the most rapidly changing end of the fleet scale, appeared to be the most aware of the need to employ, or retrain managers. One of the largest fleet's directors pointed out that in his opinion, a major limiting factor on the firm's growth potential was the scarcity of young middle managers equipped to deal with the rapid changes being demanded of the industry. At the same time, as Response 209 shows, some 30% of respondents felt that job experience was more important than formal qualifications, although 33% did not.

It is considered fair comment to point out that as competition increases and customer demands become more linked to higher service quality requirements, the need for a management cadre capable of dealing happily with leading edge technology is almost certain to become more apparent. Concurrently, as the changes which have come about in the nature of doing business in the industry firm up, a more broadly based manager will almost certainly be in high demand.

## FINANCE.

Sources of finance reflected the changes which had overtaken the industry in the last few years. Those firms which were public limited liability companies, or were subsidiaries of such tended to obtain start up finance from the open market, either directly or through their parent company.

As for the others 63% and 67% respectively utilized personal and bank finance for the start up phase of the business. It is interesting to note that not one of the hauliers included in the sample obtained direct financing from customers or from local or national government sources. It is virtually traditional in the transport industry to employ a combination of bank loan and personal finance to commence in the business therefore no surprises were contained in this information.

The attitude of the banks to the industry was typical of their expected attitude to any highly competitive market, namely that 23% of the sample described obtaining finance as very difficult, and 73% as difficult. 4% of respondents stated that obtaining monies from the banks was easy, and this was normally backed up by further information pointing to long term contracts or a long history in the business.

## FINANCE FOR EXPANSION.

065-071. One of the major problems facing any business with expansion plans is obtaining finance to underwrite their projections. 70% of the sample pointed out that retained profits were the major source of funds for expansion, and the remaining 30% pointed either to the banks as the major source, or in a small number of cases, both of these sources together with funds from the parent company. All managers expressed a not unexpected belief that funds were always in short supply compared to the uses to which they could be put. This was assumed to be a statement which managers in any industry would agree with and no particular import was placed on it.

67% of the sample normally, or without fail, used a general reliance on knowledge of the industry to back up any requests which were made for finance. It is noticeable that only 20% placed the same importance on promises of increased business from existing customers. This indicating perhaps, that when expansion plans were made, the emphasis was on new business rather than expanding within the existing base. The fact that 50% of the sample stated that they either never, or only sometimes, reinforced requests for expansion finance with argued strategic plans, is yet another indication of the weakness of the strategic element in planning within the industry. The influence of the banks can perhaps be discerned in the fact that 53% would normally expect to provide cash flow and or profit forecasts.

The dominance of day to day management problems, especially in the past has perhaps biased management towards the short term problem. It is probable that as the larger firms settle into closer relationships with industry, this bias may change. It might be reasonable to suggest that it will have to change if harmonization of transport management and industry management standards is to occur.

#### **GENERAL MARKET CONDITIONS.**

072-075. The degree of price freedom and the effect of general competition on firms pricing policies was deemed of influence on the freedom of management action. If firms were tied into a market within which they had very little pricing freedom then if expansion was planned it would be necessary either to raise money externally, not common as already seen, or focus on internal cost cutting to generate greater cash flows.

50% of the fleet agreed that the concept of the customer setting a price which they had to meet was either a good approximation or an exact description of the experience of their firm. Only 23% felt that this position did not at all match their situation.

#### **PRICE TAKERS.**

There are important implications in this situation. Those firms which find themselves in this condition can either seek to

diversify out of that particular sector, or they must ensure that their strategic focus is internal. That is to say, if the long term objective is an increase in profits then attention must be directed towards increasing the utilization of their fleet and reducing costs. This is best done by employing the most efficient fleet management tools available, in to-days conditions these are usually IT based, and the position of IT within the fleet has already been discussed. The conclusion therefore must be that these particular firms must carefully re appraise their internal management effort. It is also apposite to note that if it is decided that a policy of diversification might be more appropriate, then data collection and analysis, and a sound store of information concerning the market and its trends would be essential, an area of activity also already dealt with.

#### **THE MARKET SETTING THE PRICE.**

The extent to which the market place set a price level was also of importance. Only 13% of managers felt that the market set a price level they had to meet, but 66% were of the opinion that the competition through market forces had some effect on their price levels. Given the extent of general competition in the transport industry this result produced little comment. It is worthy of note that 7% felt that the competition had no effect at all on their price level policy, 43% could not bring themselves to accept or reject the statement, perhaps indicating some reluctance to see price as being set by the competition. It must be assumed at

this stage that such firms see price as a minor element in assessing their overall value to the customer.

27% of the fleet sample were of the opinion that the non price elements in their service were such that the customer would be prepared to pay their price, even if this varied from the general level in their sector. Only 20% disagreed outright with this statement. It must be postulated then that a significant proportion of the sample felt that the basis of their competitive mix was not price but other quality elements. Examination of the questionnaire showed that this 27% covered all sizes of fleet, although it did include most of the larger ones.

#### **RESERVED MARKETS.**

The concept of reserved markets did not receive a high confirmation from the sample. 3% were of the opinion that customer dependence on road transport allowed them a degree of pricing freedom. 53% totally rejected the concept. On the other hand Response 076, when competition from other modes was requested produced a virtually nil return. The overwhelming majority of managers did not see other modes as major competitors with road. The single exception identified rail, but even then only over a very narrow range of hazardous chemicals. The concept of a reserved market for road might not be apparent in terms of the individual haulier, but might very well be valid for the industry as a whole.

## COMPETITION THROUGH INNOVATION.

A small percentage of the sample, some 13%, seen the introduction of new services by competitors as a major problem. Given the extent of change which the industry had seen over the last decade and the continuing movements within certain sectors, this response rate caused some surprise. When reflected upon however, it must be assessed in conjunction with the already identified weaknesses in market analysis and research. 73% agreed strongly that the problem of the "cowboy" still existed. The unrealistic prices occasioned by the activities of these smaller owner drivers was mentioned at all levels of operation. No firm appeared to be immune from their activities, the general assessment was never the less, that they represented a nuisance rather than a threat.

## ORGANIZATIONAL OBJECTIVES.

079-087. In terms of measuring success within the industry the most popular measure, selected by 93% of the sample, was an increase in profits, followed by a reduction in operating costs 53%, and an increase in profits per vehicle with 50%. It is perhaps significant that an increase in share of the market was seen by only 23% as representing success, whilst entering new markets was identified as a success indicator by 30% of the sample.



It must be noted in passing that Doyle and Saunders 1985 *ibid.* and others have identified as a key element in the strategy of Japanese firms that they are not interested in short term profits, but on attempting to establish themselves first seek as great a share of existing markets as they can. A policy of entering and indeed initiating new markets follows, with the emphasis on long term profitability rather than short term returns. An examination of this approach might very well prove beneficial to management within in the transport sector. Of some significance perhaps, only 13% of managers perceived their firm as very effective in terms of the indicators they had selected as showing success. 40% seen their organization as middle of the road performers. An assessment perhaps not unrelated to the apparent weaknesses in strategic management already mentioned.

#### **MANAGEMENT TARGETS.**

089-093. It has been assumed throughout this thesis, and was discussed in Division One, that effective management is best achieved within a framework which contains some objectives towards which management effort is directed. It is further suggested that good management decisions cannot be made on the basis of bad management information. This examination of responses has already remarked on the quality of strategic management information. 20% of management included in the survey stated that they were presented with short term objective targets which were crucial for them to meet. 17% stated they were not

presented with any form of set short term target. 20% felt they had to meet stated long term targets, 13% answered they had no such targets to meet, and 37% indicated that such targets were very low in their scale of priorities.

13% felt that their firm was very effective in setting management objectives. 54% indicated that they viewed the firm as very ineffective or close to this in that function. These responses can only be taken to indicate that a significant number of operating managers see their firms as lacking in management direction. A view that is supported by the weight of replies to this research questionnaire.

#### DAY TO DAY OPERATIONS.

27% of managers seen their firm as only interested in day to day operations, a fairly strong condemnation of planning ability, especially since this response was produced from senior operating managers within the growth sector of the West Midlands Fleet. A situation assessment reinforced by the fact that only 17% believed that within their business there was a strong individual, or group, who was responsible for the setting of management targets.

This is not to imply that management structures within the industry are virtually non existent, all criticism so far has been aimed primarily at the strategic element. 80% of replies indicated that some form of control procedures were in operation within

their businesses. This can be taken as an indication that the tactical management process at least is in place.

13% indicated that periodical assessment of profits in terms of the total fleet, individual customers and traffics was important within their organization, 20% felt it was not. 20% of hauliers carried out regular revisions of operating costs 23% did not. 23% indicated that regular effective communication took place within the firm to ensure that the operations continued as planned, 27% answered that such communications did not take place. There were some outstanding examples of good communications, with briefing meetings being conducted every fortnight and every month in some firms.

On the other hand many managers stated that a gap was beginning to open between the operational side of their companies, and the general administration element, a gap which was very noticeable in the large organization. In an industry as heavily oriented towards service, and that service totally dependent on the operations function, this gap must give rise to some concern for the future progress of the industry.

#### **OBJECTIVE TARGETS.**

This section was intended to assess how the firms included in the survey approached their market.

101-112. 27% of the sample seen their firms as providing highly specialised vehicles for specialized customers. 7% seen themselves as not at all specialised carrying anything which came their way. The majority of firms obviously perceived their role as somewhere between these extremes. 63% replied that when planning expansion the local market area would attract their attention first. 20% felt that they would attempt to expand the geographical base of their catchment area.

#### OPEN/CLOSED MARKETEERS.

These replies are of some import. In the first case there would appear to be a strong indication of dependence on local markets for business. Only 20% indicated that they would be prepared to re design their service and make it less specialized as a method of attracting more customers. These responses would seem to indicate the existence of a closed marketing approach amongst a majority of hauliers in the survey. They provide a specialized service dependent on local markets and are not prepared either to re design their product or to move out of the local geographical area in search of growth.

There also would seem to be a minority type , perhaps best referred to as an open marketeer who is prepared to move into new areas, and redesign his service. It is not apparent at this stage whether one or other of these strategies is more effective or whether the two types simply represent different market niches.

30% indicated they would be prepared to compete on the basis of price. That they would be happy to attempt to attract custom away from competitors on a pure price basis. This might very well indicate that although there are obviously some customers to whom non price elements are important, there never the less exist many to whom price can be crucial. Only 10% allowed that they would attempt to attract custom from other transport modes, a further indication of the overall reserved market position of road transport.

40% and 43% respectively, claimed that they held close consultations with customers to ensure that total requirements were met. Flexibility in operating standards were included in this section, and the high loading placed on service is much in evidence. These replies can be taken to indicate the degree to which most firms are prepared to indulge customers in any changes in services which might be requested. It is none the less interesting to note that some 7% of the sample felt that they should provide a particular package and then stick to that package, that is they felt that they sold a standard product and the customer should accept that package.

#### **NEW ACTIVITIES.**

37% of hauliers felt that they regularly attracted new customers by offering new services, and or vehicle types. This reflects the new attitude towards the customer which has emerged in some of

today's new wave firms. Contrast this with the attitude as stated in the Office of Fair Trading Report 1974 *ibid.* when the general comment was that the industry appeared to carry out no positive actions to attract new customers. This response percentage contrasts with the numbers who claimed to be carrying out specific marketing information exercises.

23% of respondents were of the opinion that their firms entered new areas of activity as they emerged. This relatively low score conforms with the emerging belief that there is a small number of firms at the cutting edge, these being followed into particular areas by large numbers of effective, but not industry leader firms.

#### **EFFECTIVE FLEET MANAGEMENT.**

A major proposition for effective fleet management must be that high quality information is available. It has already been seen that 17% of those using IT employed it for data collection and analysis, and 13% for fleet management. The analysis of vehicle ratios is seen by the researcher as a key tool in fleet management. A variety of ratios can be employed, such as income per drop:vehicle cost per drop; income per vehicle mile run: maintenance per mile; income from named traffics:delivery costs from said traffics and many many more.

The main use is as a marketing tool to optimize the various fleet/traffics/routes mixes. If for example it can be seen that income: costs ratios in a particular combination of traffics and customer are declining, certain questions are raised. Is this the result of increasing costs in this area? or has a poor contract been negotiated? or do rates need revised upwards at the next negotiation? or is this a declining sector which should be run down in the future and resources diverted elsewhere, or whatever management action is considered appropriate. The ratios provide top quality information, good management action can be based on this information.

13% of the growth fleet sample replied that such ratios were employed within their fleet. This response can again be taken to reinforce the belief that only a very small percentage of transport firms employ a selection of the more effective techniques available, and hence can be identified as utilizing the best management policies portfolio. It is these hauliers and their approaches which it is hoped to identify.

#### **SELF IMAGE**

It was originally hoped that at this stage in the interviews sufficient rapport would have been established for managers to give a detached assessment of how they viewed their own organizations. As can be seen in the questionnaire a list of 5 general types of

firm was provided and the respondents invited to identify one with their own business.

57% seen their firms as best described as a Workhorse, providing a standard service with little innovation. 33% identified with having some elements of the Dedicated and Innovator categories, and 10% seen themselves as mostly Pioneers. No single firm seen itself as Complacent. This selection caused no surprises and would in effect be very close to the type of categorization that could be made on the bases of responses to the questionnaire sans, this particular question.



## CUSTOMER TARGETS.

118-123. In Division One it was hypothesised that a basic requirement for an effective plan for growth would almost certainly include an attitude towards and a policy for market segmentation. The identification of a target customer type, and the location of the firm within that sector was considered an essential ingredient in a "good growth policy portfolio." With the exception of those firms in the express parcels service, no manager could successfully articulate or even identify the firms policy towards market segmentation. The vast majority believed they would service any segment of the market. This in spite of the fact that in reply to Question 101, 27% responded that they provided highly specialized vehicles for highly specialized customers.

It was concluded by the researcher that many hauliers did in fact segment the market, but the apparent lack of a clear understanding of the process suggested that this was an ad hoc policy which had evolved as it proved effective, rather than a deliberate approach thought out and consciously implemented by management. It can only be remarked that not only have such policies proved efficient outwith the transport sector, but that a more planned and judicious application within the transport market might produce high gain results.

#### CUSTOMER SUCCESS.

37% of hauliers considered that their main customers would be rated very successful in their own sectors, whilst 47% considered them middle of the road performers. 10% seen their chief customers as leaders of innovation, 10% stated that their principal customers were in high growth sectors of activity. In all three types of classification of customers the majority of respondents considered their principal customers to be at the mid point of the scale, that is 47%, 40% and 53% respectively. If it is accepted that even within the growth sector of the West Midlands Fleet there exists a small number of "boiler room" firms, then it might very well be that those are the firms who considered their customers to be the innovators. If this is true then perhaps the best policy of growth is to hitch a ride on a rising star- a not uncommon situation in any industrial sector.

In a derived demand industry such as transport this is not to imply docility on the part of the haulier, only very dynamic management would be able to manage the extent of change which was required to follow such innovation leaders.

#### COMPETITOR TARGETS.

124-134. 6% of firms identified multinationals as their main competitors, 17% national firms, and 27% saw local hauliers as the main sources of competition. Some 50% of respondents identified

some mixture of these types as the principal source of competition. The entry of multinational organizations into the transport market has been one of the greatest sources of innovation in the market place. These firms have identified the markets they wish to concentrate in and have been in many cases the source of innovation within the industry. The relatively small number of individual firms who identify multinationals as competitors reflects both their dominance in a small number of markets, and the small numbers of such firms in the market.

On a scale of 1 to 5, representing the degree of competition in their sector from unaggressive to very aggressive, 83% of managers selected points 4 & 5. Only 3% felt that competition was unaggressive. This position again raises some queries. There is obviously a strong perception of aggressive competition, but the extent to which firms attempt to upstage competitors by obtaining better market intelligence, by introducing up to date technology to improve their internal effectiveness seems, at least for the majority of firms, to reflect a fairly complacent attitude.

It is suggested that these two elements are linked, a general feeling of intense competition does not translate itself into action because for the majority of firms, there exists little hard evidence of what really is going on in the market.

#### COMPETITIVE THREATS.

The selection of those areas within which improved performance by the competition would be perceived as a threat proved interesting. In spite of the emphasis on non price elements, and the repeated stressing of service, 83% of the sample selected price movements as a source of threat. 63% identified improvements in speed of service, with 47% citing range of service. These choices indicate that the importance of price cannot be underestimated in the market place. There is a caveat however, that the managers stated that it was price movement **without a decline in service** which would alarm them.

43% selected finance available, 43% numbers of deliveries, 40% fleet size, 37% relationship with customers, 23% apparent rate of growth and 17% types of vehicles. Customer relationships tended to be interpreted as indicating some form of "graft".

#### EXPANSION OPPORTUNITIES.

The obvious deduction must be that any haulier who can improve the efficiency of his internal focus, who can reduce costs without dropping his service standards and pass this on in the form of lower prices, would be in a position to attack his competitors market positions. In addition, effective use of modern technology to reduce travel times, coupled with an expansion of service range might very well prove to be an unstoppable combination. If these

internal activities were to be combined with effective sales and marketing, then virtually all of the weaknesses and potential strengths thrown up by this survey would be encompassed.

#### **COMPETITIVE ADVANTAGE.**

135-140. The majority of managers experienced some difficulty in specifying the benefits which they offered their customers. The most general comments were related to service, especially reliability, friendliness, flexibility, and speed of reaction to requests. When advantage over the competition was raised, virtually all managers maintained that their firm was superior to the competition in the areas enumerated above.

#### **AWARENESS OF COMPETITORS.**

This situation gave rise to concern in the researcher at the time of administration of the questionnaire. After analysis of the complete service, some suggestions might be made.

It is held likely that the principal reasons behind the situation is simply lack of detailed market intelligence. Managers impressed with their knowledge of general prices, and overall movements within the industry, but they were obviously unfamiliar with any concept of a formalized marketing plan, or an argued out POLICY plan for the future direction of the firm. The concept of a SWOT

(Strengths, Weaknesses, Opportunities, Threats. ) type analysis was alien to almost all in the survey.

Many managers brought up the cyclical nature of the transport business, both on an annual and time series basis, but again virtually without exception, there was no apparent attempt to gather data relating to the market, to identify trends, to assess and analyse competitors policies. The exceptions were to be found in the fleets at the leading edge.

#### **CUSTOMER PERCEPTION.**

30% of managers believed that their customers perceived the benefits offered by their firm as important. 10% were of the opinion that the customer perceived the firm as very superior to the competition, with some 87% feeling that the consumer saw them as either about at the same level as the competition or slightly above it. Points 3 & 4 on a scale 1 to 5.

There were virtually no managers who were prepared to admit that the competition performed any better than they. This could be expected since after all, the sample could be said to contain the more aggressive, more confident firms- whether that confidence was justified in all cases is a value judgement the researcher did not make! Of the few who did venture a reply none suggested any service related element, but referred to finance availability. This always considered of vital importance.

#### MARKET STRATEGIES EMPLOYED.

141-169. It is suggested that reference be made to the Response Summary for a detailed list of all replies in this section. Only the more salient points will be discussed.

47% of managers were of the opinion that their firm selected only safe established markets to enter. 10% felt that this did not reflect the attitude of their firm at all. The small number of innovatory firms might very well be represented in that 10%. Only 7% of hauliers believed that their organizations initiated markets, these firms included the largest fleets in the sample. 17% of the sample never the less felt that such a view was a good approximation of the experience of their firm. This group included fleets of a wide range but no smaller than 20 vehicles. 70% of managers stated that their organizations did not initiate markets.

17% held that their business regularly surveyed the market for trends. 60% felt that they could not agree at all with the statement that "the firm" kept its existence before the market", and 53% totally disagreed that they had an efficient sales force.

The implications of these statistics have already been discussed, but it must again be repeated that these areas appear to constitute not only the most common weaknesses within the management of the fleet, but the most crucial.

30% were prepared to confirm that the business could provide fast accurate quotes, and had a detailed knowledge of fleet costs. The majority of managers although not happy to allocate, as it were "full marks" to themselves in this area, did however feel they were effective in these activities, selecting point 3 and over, on 80+% of occasions.

73% stated that the firm was good at generating business from existing customers, but only 17% thought the statement that they were good at upstaging competitors fitted their organization exactly. 57% of the sample said that the phrase "good at sales and marketing" did not apply to their firm at all. These responses again indicate that the majority of managers perceive their companies as being weak in the marketing areas.

50% of hauliers would appear to have a predominantly informal management structure, although 27% of managers believed that there was a strong definition of responsibilities within their firm.

#### **MARKETING MIX.**

170-183. The heavy emphasis on service quality was reflected in the responses to this section. 87% of the sample placed reliability and flexibility at points 4 & 5 on a 5 point scale, when requested to ascertain its importance to their firm. The remaining 13% selected position 3. Only 10% were of the opinion that in this respect they were much superior to the competition.



53% indicated they were at the same level of performance (point 3.) and 33% selected point 4.

This is much as was expected , and reference is made to the responses concerning the areas where the competition was more effective than the firm being interviewed.

43% considered the range of services provided very important, with a further 30% selecting point 4. In this area however, only 3% of managers felt that they were much superior to the competition, the majority, some 57% selecting the middle ground, point 3.

As the managers themselves indicated that this was an important area in understanding performance, there would appear to be significant mismatching taking place between what managers assess as the needs of the market, and its provision by the companies concerned.

Only 3% felt they were much superior to the competition in introducing new services, 67% believed the competition to be about as effective in this area as themselves.

#### **THE IMPORTANCE OF PRICE.**

83% were of the opinion that their prices were either about the same as their competitors or slightly higher. 7% felt they were

much higher. In terms of whether these price levels were important or not in understanding the performance of the company, 27% thought they were very important, 3% unimportant.

These responses were of interest. Managers appeared to display a very ambivalent attitude towards the role of price in competition. 27% claimed they could charge higher prices because of the non price elements in their package , yet 73% indicated some annoyance from "cowboy" firms charging unrealistic prices, 40% indicated a willingness to compete on a price basis, and 83% said they would find price reductions by their competitors a threat.

One conclusion might be that the importance of price varies between particular market segments. There might very well be areas where price is not a major concern, and others where it is, on the other hand the variety of responses might indicate some confusion on the part of managers in understanding the detailed workings of their sector. More will be said on this topic later, but at this stage it can be suggested that a combination of these circumstances would appear to be the real situation.

37% of the managers questioned were of the opinion that advertising was very unimportant in the industry. 10% believed it was very important. 37% felt that their level was about the same as that of their competitors. 60% stated that personal recommendation was very important for their firms.

## FUTURE TRENDS.

184-198. 10% of the sample believed that their market share would increase in the future, whereas about 86% felt it would remain very much the same or increase slightly, no single manager stated that they expected the market share to be smaller in the future.

10% seen profitability increasing in the future, with 73% convinced that it would remain about the same or increase slightly. 40% were of the opinion that pure transport services would be more important to them in the future, 16% indicated that they expected such services to decline from their present position of importance.

17% thought that logistics services would be more important in the future and 17% also believed that JIT services would also be of more importance. It is perhaps no coincidence that these are the areas which would appear to be likely to experience a high level of growth within the transport sector over the next few years. The reasons behind this view have been discussed in Division One, it is none the less significant that once more a minority of firms appear to have their pulse on future market trends.

23% stated that they expect their internal focus to concentrate more on cost reduction in the future, and the same proportion of the sample believed that attention would be directed more to

service types. It is suggested that this reflects the differing management approaches encountered. One school convinced that greater attention to service is the way forward, the other happy with the present levels and beginning to look inward for cost reducing opportunities.

27% of managers believed that competition would be much tougher in the future, only 3% feeling it would be weaker. Only 3% of respondents were of the opinion that there would be greater numbers of firms in their sector in the future. 54% indicated a conviction that their numbers would be smaller or much smaller. This, it is held, reflects a general opinion in the industry that some form of "shake out" is likely to occur over the next few years. This will be returned to later.

53% cited a belief that fleets would be larger in their sector, 10% indicated they thought they would be smaller, and 37% felt they would remain the same. Those favouring smaller fleets indicated that the reason behind their belief was an expected increase in utilization rather than a simple decline in numbers.

3% felt that their competitive advantage would improve, whilst 3% believed it would become much worse, 57% seen their firm as standing still and expected no change in the competitive advantage.

It could perhaps be taken as an indication either of complacency, or indeed, lack of confidence that so many expected to stand still, and so few to advance in terms of future competitiveness.

43% seen service quality as being more important in the future, and 43% foreseen price competitiveness as becoming more important. Only 7% seen service quality as not changing its relative importance and 13% seen price retaining the same relative position.

As an indication of greater competition in the future and perhaps more importantly, of an increase in the power of the customer, only 3% seen their firm as having greater pricing freedom in the future. 80% seen a reduction in that freedom. If this comes to pass then effective internal focus on costs and an increase in the utilization of vehicles may very well prove the best way forward for many hauliers.

#### **TRAINING.**

199-209. The effective training of employees is a function which is expected from leaders in any business sector. 27% of managers claimed that training was regarded by their firm as very important, but it was sad to note that 33% either had no policy towards training or did not carry out any form of training within the organization. 13% stated that retraining was common, and 17%

that drivers were encouraged to seek promotion from the cab to the administrative side of the business.

As can be seen from the Response Summary this is the only section of the survey where the majority of replies lie within the 1 to 2 score zone.

## CHAPTER 33 SURVEY COMMENTARY.

Although a variety of comments were made above, it is considered apposite that the more important trends which the survey responses indicated might be at work within the West Midlands Fleet be discussed outwith the framework of the questionnaire.

### MANAGEMENT OF CHANGE.

A cursory examination of the Response Summary in conjunction with a key to the identity of firms, suggests some broad generalizations.

In the first instance, it does not appear necessary to be linked to the fastest growing individual customer to ensure a high success rate, but success is best achieved in the fastest growing sectors . All the largest firms were associated with one or more of the sectors identified as those experiencing the greatest degree of change over the last few years, that is the express delivery area, the contract hire sector, and the third party distribution sector.

This is not to imply that other sectors of the market cannot support large firms or high growth rates, they do. It is never the less true that such areas experienced their greatest growth some time ago, and may already be targeted as future expansion areas by the newer more aggressive organizations.

Such hauliers often see the more traditional sectors as "Staid" and ready for entry. Indeed the rapid expansion of newer firms like Federal Express's Systemline into areas which were regarded only a short time ago as the preserve of the more traditional hauliers may herald times to come.

Many small to medium sized hauliers relied on generating business from the very large numbers of industrial firms in the West Midlands. Industry itself has undergone a period of dramatic rationalization over the last decade, the firms which have emerged tend to be larger, and adopt a much more aggressive attitude to all their business operations-transport included.

Organizations such as Systemline can and do, approach manufacturers with an all in transport package, they can provide computer simulation of the type of system which they feel will be of greatest benefit to the customer, they operate from the base of a planned marketing strategy and are expanding their contract distribution base throughout local industry. This must have dramatic effects on the range of traffics available to the smaller hauliers. Other larger and similar sized firms are taking the same approach.

#### **ATTITUDES.**

At the same time, it is apparent from the survey that many of the hauliers included are not yet fully aware of the trends which the



leaders in the industry are initiating. The sample was selected at random from the growth sector, indeed, but there obviously exists a small rapidly expanding set of "super" firms.

It is suggested that these might very well change the face of the transport industry in the West Midlands unless the other members of the higher growth echelons react positively to the challenge.

It is not impossible to envisage an industry dominated by a handful of multi national firms and their subsidiaries, with large numbers of medium and small firms relying on slave feeder services for their business, and a rump of smaller "low tech sweepers" operating on the periphery.

#### **MARKET KNOWLEDGE.**

A basic key to success in any industry must surely be an in depth knowledge of the market and its trends, especially of likely future trends. All managers covered in the survey impressed with their tactical knowledge of their own firm and its immediate market, but their "feel" for the strategic areas remained questionable.

There appeared to be poor knowledge of the strengths of their competitors, and a blind faith in the superiority of their own organization. The overwhelming majority of individuals surveyed placed a great deal of weight on high service qualities, and a major proportion selected increased profits and or reduced costs

as measures of success in the industry. The SERVICE-COSTS-PROFITS link was apparently little researched.

#### **IMPROVING PERFORMANCE.**

High service levels in today's industrial conditions often mean more frequent faster deliveries. Indeed 63% and 43% of the survey linked these as being an area where improvement by their competitors would generate concern. Such concern was linked even more strongly to price, with some 83% being worried if competitors moved there, especially when linked to no deterioration of service parameters. Yet, the very areas which might produce improvements in these areas received little attention in the majority of firms.

Greater utilization of vehicles, better routing and scheduling more accurate fleet management, in short a more intensive use of assets, figured only in the minority of plans.

The use of IT in these areas, the employment of vehicle ratios, all appeared to score low in the scale of priorities of many managers. 77% of firms pointed out that link up with customers computer systems did not occur in their organizations, significantly there was a minority of 17% who did claim such a link up.

There is little argument that for manufacturing industry, MRP2 and other JIT approaches is going ahead rapidly, the use of IT in the retail industry is already well established, the lack of a link up with the core of such systems namely, the IT installation, is a major hindrance for any transport organization. A swift glance at the responses indicates the magnitude of the problem, firms stating link up included Lynx-2500 vehicles, Systemline-300 vehicles, Salvensen-400 vehicles, Fashionflow-250 vehicles and Autocontracts- 300 vehicles. Virtually all of these firms are engaged in the fastest expanding sectors and all are themselves expanding.

It is not claimed that all levels of organization can participate in all such high tech areas, but it is true that more and more firms outside the transport sector are employing higher levels of technology on a daily basis, an inability to "plug into" these changes will inevitably lead customers to seek transport elsewhere.

#### **PRICE COMPETITION**

The larger more effective hauliers seem to be set on a period of expansion. TNT and Federal Express for example, have a definite policy of market segmentation by service and a corporate plan to expand into all areas of activity which can support their organization size. It is safe to assume that other large organizations have similar intentions.

The Freight Management sector of BRS, a subsidiary of the National Freight Consortium certainly intend to expand their contract hire sector. BRS also announced in August 1988, a £12 million investment in JIT services. These movements are of tremendous import for the entire transport industry, and the small to medium sized haulier in particular.

Contract hire and JIT services are areas where the application of IT will become more and more important, if the smaller haulier cannot accommodate these changes then the larger firms will continue to take greater and greater slices of the available market. This in its turn means a shrinking overall market for the smaller transport business, even those with a symbion relationship with industry. This could very well mean that such hauliers are forced out of these more prestigious sectors into segments with lower service needs.

All hauliers surveyed expressed a fear of pure price competition since this tended to force margins down, and often meant indulging in the type of law breaking already discussed. This is not the only problem since price competition means lower margins, which provide lower profits, which result in less ability to invest in the type of managers and facilities which might allow a firm to break into a more service oriented sector.

Rates which are driven down close to operating costs also mean that replacement of vehicles becomes very difficult, which could

result in displaced hauliers entering a size trap, or a downward spiral out of the industry. It may be an indication of things to come that 13% of the sample selected "Simply staying in business." Response 087, as a measure of success, the sample drawn from the growth segment of the West Midlands Fleet.

#### **PROBLEMS OF HIGH INVESTMENT SYSTEMS.**

It should not be assumed that those firms investing in high cost installations are without problems. In the course of the interviews several suggestions were made which could be taken to indicate that not all was well in even the fastest growth sectors. It was suggested that recent trends were introducing unwelcome attitudes.

It is difficult to say with certainty how widespread problems are, or indeed if the suggested problem actually exists. The argument below rests on a discussion with two transport managers. Both were of very senior level and both had experience in the largest companies in the region and indeed the country, and had been associated with the industry their entire working lives. Some weight must therefore be given to their opinions.

#### **SERVICE AND COMPETITION.**

The more traditional type of transport manager appeared to be very proud of the fact that the industry was a service one and

that the bottom line was high service to the customer. Some however complained that the traditional approach was being eroded and as a result profitability within some sectors reduced, and the long term health of that market being adversely affected.

At the nub of the problem it was claimed, was the separation of operations management and sales administration. The push within the newer firms was for greater and greater sales, this had resulted in a decline of the service ethic. Service was still a mainstay of all transport activity but the modern company was too interested in the profit element for the concept to have any real meaning, other than keeping up with the competition. If the market would accept lower service in any area, then service was lowered.

At the same time service had come to be related primarily to performance standards, and in some sectors particularly the express delivery areas, the level of performance was being pushed higher and higher. It was claimed that this situation made it more difficult to assess real market conditions as contact with the customer was being subordinated to price and profit.

#### **CONSEQUENCES OF HIGH INVESTMENT LEVELS.**

This was linked to the very high investment levels which are required to participate in the present day express delivery market. Investment in Hub or similar facilities is a multi million pound project. Such facilities carry with them substantial fixed

costs, these must be met irrespective of the volume of traffic flowing through the system. To make the investment a commercial proposition therefore, it is essential that large volumes of traffics flow through the facilities.

To capture such large volumes of traffic competition becomes fierce, and it is at this point the link between a drop in the old style of service is linked to the emergence of modern business methods. Since virtually everybody in the sector claims roughly equivalent service levels then the major method of competition becomes price competition.

A sufficiently high volume of traffic must be ensured to keep any installations financially viable, therefore a series of competitive tactics emerged. The first was to sub segment the market to attract custom, this was seen in ever decreasing promised delivery times, this was followed by entry into new market segments home deliveries, business mail, newspaper delivery and so on, and of course an increasing internal focus. A drive was seen towards reduced costs in the firms engaged in this sector, the employment of higher levels of technology for example. The extreme competition was exploited by customers of course, who attempted to play one firm off against another to obtain price reductions.

The end result it was suggested was that firms in this sector were obliged to diversify into other more service oriented sectors, hence the push into contract hire and third party

delivery, for example in the brewery industry. The high levels of investment and management expertise developed were a great aid in entering new sectors.

#### A CARTEL?

It was claimed that the main consequence however, has been that the original sector entered, namely the express delivery market, has become so unprofitable that the largest operators have formed a Cartel.

It was suggested that many new major contracts which might become available are subject to price ring bidding by the older well established firms. As in any cartel not all contracts are subject to agreement, and competition takes place in selected sectors, as is the norm, some contracts are not subjects to bids and particular sectors are allowed to fall into the hands of non members.

The indication of the existence of a cartel did not arise until well into the project and hence there was insufficient time to investigate its existence or non existence in depth. The logic behind its existence is good, and the sources of information considered reliable. The illegality of such an arrangement did not escape the researcher's attention. When approached senior managers of the alleged members denied the existence of a cartel no matter how informally organized.



The reason for the inclusion in the thesis is simply to indicate that sources within the transport industry point to problems which can arise even in the most rapidly expanding sectors.

## CHAPTER 34 THE PRINCIPAL COMPONENTS ANALYSIS.

As has been pointed out on several occasions, even within the sample, which being drawn only from the growth sector of the fleet is already representative of a minority, there appears to exist a smaller number of firms who might be called the high flyers of the group.

These can be reasonably held to be the source where can be found that combination of policies or attitudes which if followed will result in a high success rate in the industry. The central problem is to isolate those particular attributes from amongst the replies to the 209 statements which were put to the 30 companies included sample.

In the interests of data reduction not all 209 statements were to be included in the components analysis. This decision was based on the opinion that certain areas such as attitude to legislation, training, and sources of start up finance would not have a significant effect on the outcome. In the event 99 elements were selected for further data analysis. These are numbered on the questionnaire scheme 2 which is included in the soft bindings together with the appropriate computer print outs. It takes very little arithmetic to arrive at the conclusion that the survey produced some 2970 answers and that, the classification of such large numbers poses a difficult problem.

## THE TECHNIQUE.

In Chapter 23, Selection Of Data Collection And Analysis Methods, it was concluded that Principal Components Analysis would be applied to the data collected in the field work so as to obtain a parsimonious description of the companies interviewed. A brief description of this technique will illustrate its use.

Goddard and Kirby 1976 *ibid.* give a very succinct illustration of the approach employing data from work carried out by Davies 1971, the following draws heavily on that illustration.

|   | Aldridge |      |      | Macclesfield |      |              |
|---|----------|------|------|--------------|------|--------------|
|   | 1        | 2    | 3    | 4            | 5    |              |
| 1 | 1.00     | .79  | .72  | .75          | .63  |              |
| 2 | .79      | 1.00 | .56  | .60          | .53  | Aldridge     |
| 3 | .72      | .56  | 1.00 | .50          | .49  |              |
| 4 | .75      | .60  | .50  | 1.00         | .75  | Macclesfield |
| 5 | .63      | .53  | .49  | .75          | 1.00 |              |

The table shows an extract of a comparison between housing schemes in two towns Aldridge, 1-3, and Macclesfield, 4-5. They have been compared in a correlation analysis by their scores on 59 attributes.

The matrix can be interpreted by saying for example that in terms of the attributes measured, scheme 1 is similar to scheme 2, but has less in common with scheme 5.

If all five schemes in the example were perfectly related, then each would have a correlation score of 1, and the maximum possible similarity in the matrix would be 25, 5 rows and 5 columns. It can be seen however that not all schemes are perfectly related.

If the correlations in each column are summed, and the totals for each column added together, the result is the total similarity in the actual matrix. In this example, the total for column 1 is 3.89 and for the complete matrix 17.63. The closer the matrix total is to the possible total, then the greater the degree of interrelationship in the actual matrix.

It will be noted the matrix is symmetrical, that is each correlation appears above and below the diagonal and has therefore been counted twice. If the square root of the actual total is taken, i.e. 4.2 a precise statement of the amount of correlation present in the matrix is arrived at.

If each column total is divided by the overall measure of relationship, the contribution of each scheme to the overall relationship is given. For example  $3.89 \div 4.2$  indicates that scheme

1 contributes 0.926 to the overall relationship. This is referred to as the component loading for scheme 1.

If the total score of the matrix is divided by the maximum possible score then we find the amount of the possible maximum interrelationship which is explained by the actual scores. Thus  $17.63 \div 25$  indicates that 70.5% of the possible maximum value is achieved. It is possible therefore to say that the entire matrix can be described by the component loadings for the 5 schemes with a loss of only 29.5% of the information within the matrix.

One further statistic is of importance for this analysis. The Eigenvalue. The variance of a variable accounted for by a particular component is the square of the respective component loading, therefore the total amount of variance accounted for by a component may be calculated by adding the square of the loadings in each column- the result is the eigenvalue.

Since all the variables are normalized, the variance of each variable is 1; therefore the the total variance in the data equals the number of variables in the set, thus if the eigenvalue  $\div$  by the number of variables, the proportion of variance accounted for by particular factors is obtained.

A principal components analysis was carried out on the survey data, the results are contained in the computer printout in the soft binding.

## RESULTS.

It will be recalled that some 99 elements were input into the programme, in terms of accounting for the variance, 29 components account for the total variance within the matrix, and 20 significant components account for 94.733% of the total variance in the matrix. In other words the interrelationships within the matrix can be described by these 20 significant components with a loss of only 5.267%, say 5.3% of the information contained in the initial matrix.

## IMPLICATIONS .

By employing the data from the print out as indicated by the notations, it would be possible to draw up a short list of components which could be said to account for the greatest part of the variance in the data matrix. These components would in other words, accurately account for the reasons why the hauliers in the survey differed from one another. These elements account for roughly 95% of the variance in the matrix, therefore the hauliers included in the survey are very similar in many ways. The qualities measured by the other factors in the survey account for only 5% of the differences between them, and therefore the areas responsible for these components are crucial in understanding the differences among hauliers.

Component 1, could be called Market Intelligence, and accounts for some 43.82% of variation between firms.

Component 2, might be entitled Asset Utilization, and when combined with Component 1 would explain about 68.37% of the variance in the data matrix.

Component 3, can be labelled Service Pattern Response and in combination with Component 1 and Component 2 would explain 80.09 of the variance between firms.

Component 4, Internal Focus, brings the cumulative explanation to 88.16% .

A final Component, called Influence of Price, would bring the explanation to 94.73% of the differences between operators in the sample.

It is usual to limit the eigenvalue of a significant component to 1 . This ensures that the term significant component is limited to components which account for at least the total variance of a single variable. It should be emphasised that this is convention only, in the case under discussion this in effect limits us to the 20 components already mentioned. The individual firm scores on these principal components are used as an input to the cluster analysis programme.

In the print outs Kate. = the basic firm data.

Kate.1= the principal components analysis.

Doon.2= the input to the cluster analysis.

Kate.3= the output from the cluster analysis

#### CLUSTER ANALYSIS.

The objective of a cluster analysis has been described as *"Given a sample of  $N$  objects or individuals, each of which is measured on each of  $p$  variables, to devise a classification scheme for grouping the objects into  $g$  classes. The number of classes and the characteristics of the classes to be determined."*

In the context of this project the use of cluster analysis was hoped to provide a classification of transport companies based, not on the conventional long, short, or medium haul, or specialist traffic grouping such as bulk liquids, general haulage or tippers, but based on the type of management policies employed by the haulier. At the same time it was hoped that such a classification would indicate that certain types of policies and or management attitudes could be identified as being associated with the more successful companies.



## METHODS AVAILABLE.

As always the choice of technique to be applied was neither obvious or straightforward, a variety of approaches being available. As was discussed in the Chapter, Selection Of Data Collection And Analysis Methods, it was decided at the start of the programme that one of the hierarchical techniques was felt the most appropriate. These are methods in which classes are themselves classified into groups, the process being repeated at different levels to form a related overall structure.

There are a number of hierarchical methods available. the most commonly used being :-

The Nearest Neighbour method. Here groups which initially consist of single individuals are fused according to the distance between their nearest members, the groups with the smallest distance being fused.

The Furthest Neighbour approach, this is exactly opposite to the nearest neighbour, inasmuch as the distance is now defined as the distance between the most remote pair of individuals. fusion proceeds as above.

The Centroid Analysis. Groups are defined on the basis of the distances between their centroids, the groups with the smallest distances are fused first.

Median Clusters. A disadvantage of the centroid approach can be that if the sizes of the two groups to be fused are very dissimilar, then the centroid of the new group can be

very close to that of the larger group and may remain within that group. If that is the case then the the characteristics of the smaller group are lost.

Independence from group size can be achieved by assuming the groups to be of equal size, the apparent position of the new group will thus always be between the two groups being fused.

If the centroids of the groups to be fused are represented by  $i$  and  $j$ , then the distance of the centroid of a third group  $h$ , from the formed by the fusion of  $i$  and  $j$  lies along the median of the triangle formed by  $i, j$ , and  $h$ . Everett 1974 *ibid*.

Everett also points out that this method is unsuitable for use with correlation co-efficients since interpretation in a geometrical sense is no longer possible. It was for this reason that the median approach was considered inappropriate for use with the principal components analysis employed in this case.

Wards method proposes that when grouping individuals, at any stage of the analysis the loss of information can be measured by the total sum of squared deviations of every point from the mean of the cluster to which it belongs.

At each stage the union of every possible pair of clusters is reviewed and the two whose fusion will result in the minium increase in the error sum of squares is combined.

Lance and Williams Flexible Approach. Many of the methods mentioned were found to have distance measures between

the groups fused which satisfied a recurrence formula. Lance and Williams developed a method of clustering derived from the recurrence formula.

All of the various methods mentioned above have advantages and disadvantages. " *The number of clustering techniques available is large, as is the number of problems in applying them.....The major difficulty with these techniques lies in the choice of one method from the many available...* " Everett 1974 *ibid.*

Jardine and Sibson 1968 subjected the hierarchical methods to a series of mathematical criteria to assess their usefulness. Only one technique , nearest neighbour, satisfied every test. Other authorities in the field especially Lance and Williams, criticise the method, saying it should not be employed, Jardine and Sibson on the other hand conclude it is the only method that can be recommended. The problems of the median approach have already been mentioned.

The most reasonable solution would appear to be to adopt a pragmatic approach and employ more than one analysis method. In the project at hand the data were run on the basis of Wards Method, Nearest Neighbour, Furthest Neighbour, and the Centroid technique.

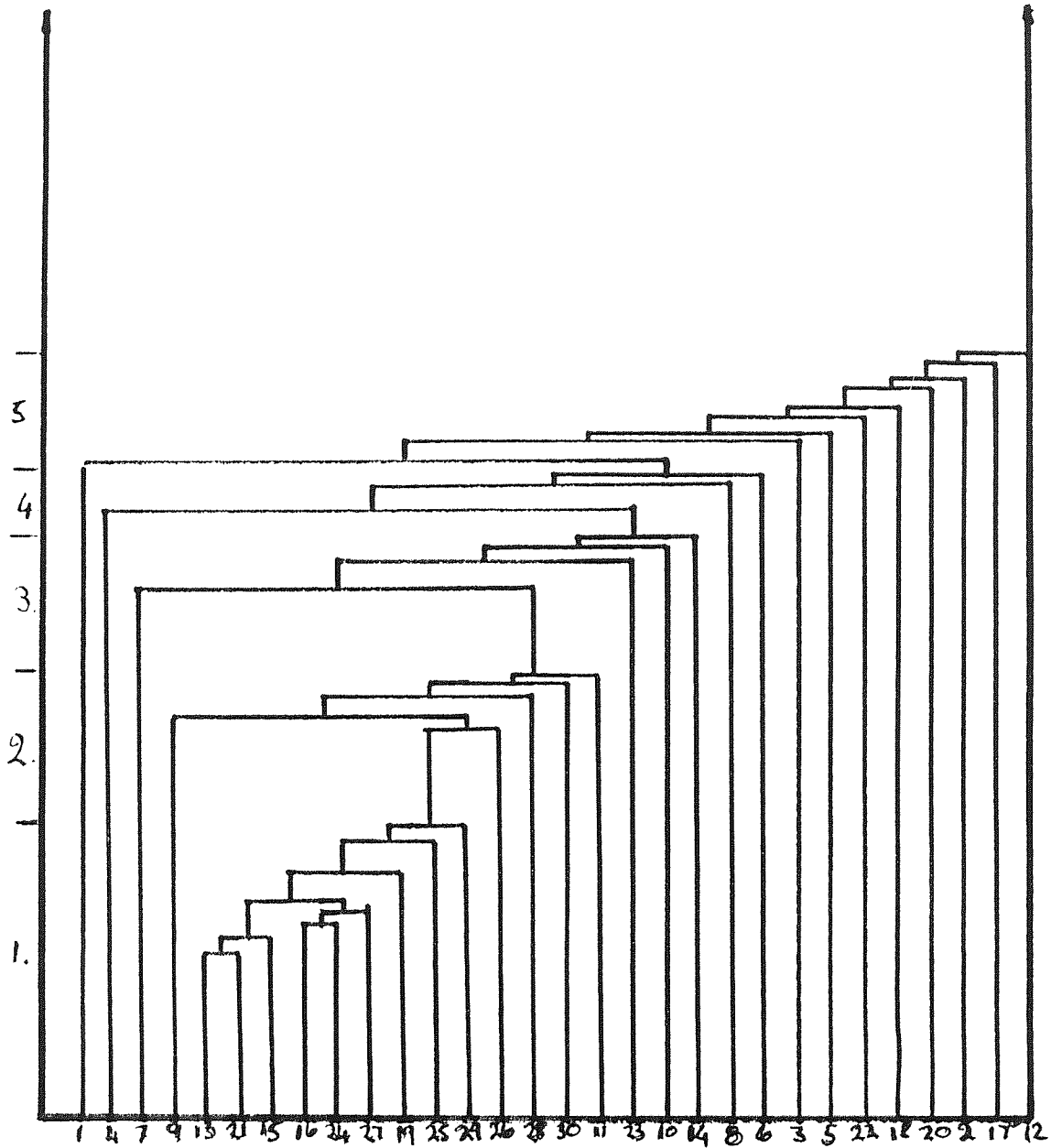


Exhibit 70

Dendrogram to illustrate the groupings produced by the Cluster Analysis.

Source: Research data.

## Results.

As Jardine and Sibson suggested, the Nearest Neighbour technique produced the most obvious clusters, although as can be seen from the data output, all techniques produced clusters of a very similar pattern, thus suggesting a degree of agreement between the approaches. This was taken to indicate the presence of underlying group structures, although it will be noticed from the information in the fusion cycle summaries, that all firms exhibit a high degree of similarity. This would be expected in the light of the discussion above on the results of the principal components analysis.

## CLUSTERS.

| Cluster 1. | Firms: | Fleet size: |
|------------|--------|-------------|
|            | 13     | 6           |
|            | 21     | 9           |
|            | 15     | 12          |
|            | 16     | 30          |
|            | 24     | 6           |
|            | 27     | 20          |
|            | 19     | 28          |
|            | 25     | 27          |
|            | 29     | 4           |

Average vehicles in the fleet=15.7

| Cluster 2. | Firms: | Fleet size: |
|------------|--------|-------------|
|            | 26     | 5           |
|            | 9      | 60          |
|            | 28     | 6           |
|            | 30     | 300         |
|            | 11     | 6           |

Average vehicles in the fleet =19.25.

ex. Firm 30, or incl, Firm 30 =75.40.

| Cluster 3. | Firms: | Fleet size. |
|------------|--------|-------------|
|            | 7      | 12          |
|            | 23     | 250         |
|            | 10     | 300         |
|            | 14     | 400         |

Average vehicles in the fleet=240.5

| Cluster 4. | Firms: | Fleet size: |
|------------|--------|-------------|
|            | 4      | 4           |
|            | 6      | 7           |
|            | 8      | 30          |

Average vehicles in the fleet=13.6

| Cluster 5. | Firms: | Fleet size: |
|------------|--------|-------------|
|            | 1      | 250         |
|            | 3      | 20          |
|            | 5      | 2500        |
|            | 22     | 3000        |

| Firms | Fleet size |
|-------|------------|
| 18    | 350        |
| 20    | 223        |
| 2     | 24         |
| 17    | 150        |
| 12    | 18         |

Average vehicles in the fleet=726

## CHAPTER 35 CONCLUSIONS.

It is obvious from the above list of clusters that three very distinct types of clusters can be further grouped. Cluster 3 and Cluster 5 obviously contain the largest fleets, although it can be seen that even within these groupings a substantial range of fleet size exists. Cluster 1, Cluster 4, obviously contain fleets of similar size and Cluster 2 appears very mixed.

In fact when an examination of these clusters is made in the context of the Principal Components analysis and the Response Summary for the questionnaire, fairly clear categories emerge.

These categories classify their hauliers not on the basis of the traditional groups but on the basis of the type of management policies followed by the company. Each cluster is relatively homogenous in terms of management approach, but contains a wide range of conventional classifications.

International hauliers are to be found in clusters 1, 4, and 5. Specialists in clusters 2, 3, and 5. General hauliers, and short and long haul specialists. in all clusters. The variations depend on management portfolios, rather than the conventional wisdom.



## A NEW APPROACH TO CLASSIFICATION.

The most important result of the research however, is that the clusters were arrived at on the basis of management activity rather than distance or size classifications. The analysis should therefore go some way to identifying, those policies which either have resulted in success, in the form of a large fleet, or have resulted in a transport organization targeting a growth sector, or can identify the "rising star", in addition to those firms which appear to either be in a stagnant market, or indeed have reached their peak and are either on a plateau or in decline. The research should also be capable of pointing management in the directions which would seem to be the most rewarding.

There is one point that must be made before proceeding. All the firms included in the survey were selected from that part of the West Midlands Fleet which displayed the hall marks of success either high growth rates in terms of numbers of vehicles, or an already achieved position of success by operating a large and growing fleet. Therefore, all included in the sample must be considered as being effective at the time the selection was made.

## CLUSTER TYPES.

Cluster 5, contains what might be termed the **FAST MOVERS** in the industry. this label was selected for two reasons. On the one hand the firms in this group are amongst the fastest growing and most

successful hauliers, but also because they tend to specialize in the rapid movement of goods.

These movements can be either car and related industries components in JIT contracts, express delivery consignments, or international movements. They all display similar characteristics in their policies.

The majority employ some form of IT aided management approach. This always includes some assistance in the market research, data collection and general administrative fields. The lesson is obvious as was noted in the components analysis discussion, attention to and knowledge of market trends, has become crucial in the rapidly changing situation which is the transport market of to-day.

The majority of members of this group also put IT to work in the routing/scheduling and fleet management areas. The most frequent reason given for the management style within these hauliers was a push for lower costs and higher profits, and as part of a general marketing effort for more competitive prices.

#### **NON PRICE COMPETITION.**

These practices may very well be responsible for another outstanding characteristic of this group, namely that they universally seen themselves as offering a mix of non price related

elements which they believed permitted them to charge prices which varied from the norm in their sector. " We are not the cheapest but we are the best," was a frequently encountered attitude. This might very well be indicative of the fact that customers are prepared to pay higher prices for higher quality.

The group, in other words, displays attention to two important areas of activity:-

**Market information.**

**Intensive use of assets.**

Cluster 3, displayed a great deal of similarity to cluster 5. This grouping could be called the **HIGH LOADERS**.

This small group exhibited the highest level of computer usage, were very similar in approach and operated in carefully chosen contract distribution areas.

Highly loaded in favour of the most modern management approaches, and highly loaded in favour of small numbers of high value added contracts. The small firm included in this group is interesting in as much as the operations manager was previously employed by one of the multi nationals, and had left to achieve greater freedom of operation. The firm although very new, is growing rapidly and embodies most of the management attitudes of the larger organizations.

It is noticeable that this group was less convinced that their individual mix commanded higher prices than the norm, the result it is believed of fierce quality competition in this sector.

Virtually all firms employed IT in all areas, marketing, fleet management, warehousing and stock control, data collection, and routing and scheduling.

It is significant that in this cluster there was a heavier emphasis on the need for more time reliable deliveries, more frequent deliveries and link up with customers computer systems than in group 5.

This particular cluster was less anxious than Cluster 5 when it turned its attention to competition from rivals introducing new types of service. This being perhaps an indication of either being convinced that their market knowledge would forewarn them of such events, or possibly because they themselves had a self image of being pace setting innovators. This group obviously pays particular attention to:-

**Market information.**

**Intensive use of assets.**

**Link up with customer systems.**

Cluster 4 provides some contrasts. these firms could be termed **SERVICES PROVIDERS**. They are not locked into the high technical level of management which members of clusters 5 and 3 are, but they operate not only a transport service but are tied into other

areas of activity as well. Two members of this group are essentially the transport extension of freight forwarders and the third member sees the provision of maintenance services and the selling of commercial vehicles as an important area of his business. These organizations have ensured a slightly wider base than normal , they therefore tend to score low on elements concerned with regular analysis of the market but high on subjects concerned with customer liaison. They differ from Cluster 1 whom they strongly resemble in size by:-

**Strong customer links.**

**Additional transport related services.**

Cluster 1, covers what might be termed the **TRADITIONAL HAULIERS**. With an average size of 16 vehicles and a range up to 28, this sector cannot be regarded as small scale or out of touch. It is a segment however, which does not display the type of attitudes which would appear to be strongly linked with the Fast Mover, or High Loader levels of success.

Not a single individual in this group used any form of IT. This of course does not imply that the activities covered under the IT questions in the questionnaire were ignored, but it certainly indicates that the most effective methods of introducing the various functions covered was not employed. No firm claimed to survey the market regularly for trends. They all claimed to provide fast efficient quotes and have good liaison with customers. All seen their main advantage over the competition as

better service, none could identify areas where the competition had an edge over them.

In addition, the type of markets which these firms are engaged in throws some light on the problems they faced. All firms in this cluster felt that "essentially price takers" was a description which fitted them, either exactly, or was a good approximation of their experience. Not one in the cluster accepted that the mix of non price elements in their service allowed them to charge prices which varied from the norm in their sector. The implication being that they were engaged in a market with intense competition and strong buyer power, power which they could not combat by keying into the appropriate high value added sector. Not a single haulier in this group perceived the introduction of new types of service as a threat, but all were aware of the problem competition from "cowboy" firms. Their main strengths lay in :-

Being responsive to customer variations—sometimes unreasonable ones.

Being price competitive.

High degree of personal service.

Cluster 2, includes operators who might be best referred to as **NICHE SEEKERS**. These hauliers fall between the High Loaders/Fast Movers and the Traditional Hauliers. As such they display characteristics of both types. They tend to view themselves as being in sectors where price competition is severe, but have

carved a niche for themselves in that sector, they display all the indications of symbion firms.

The largest fleet was highly specialized moving a single manufacturers cars. One of the smaller fleets was a classic symbion type located on the major customers premises, the other admitted to a rapidly developing reliance on one single customer in the immediate neighbourhood. The second largest fleet was engaged in contract hire, and had targeted a niche in that market which it felt was large enough to provide steady income for a firm its size, but too small and with too low margins to attract the largest operators. The greatest strengths of such firms is:-

Establishing a very close relationship with a small market sector or a single customer.

Tailoring their operations to that niche.

It is possible however, to isolate particular trends and indicate the type of actions which would appear to be required to ensure a high success rate in the road transport industry.

## CHAPTER 36 FUTURE TRENDS, PATHWAYS TO SUCCESS.

### PATHWAYS TO SUCCESS.

The most obvious areas which would appear to produce returns to attention can be reviewed fairly briefly.

**The Market.** Although all market sectors are represented in the groups showing most success, particular points can be made. Some market segments show a very high concentration of buyer power, some of these also indicate that the product leaves little opportunity for any value added element, over and above simple movement. Such areas are best left to the owner driver, and transport firms with an eye to greater growth would be well advised to initiate a policy of market diversification.

**Intelligence.** The oft repeated adage that good management decisions cannot be based on bad information, is as true in this sector as in any other. The road transport market is experiencing what is probably the most dramatic market changes in its recent history. New segments are appearing, and the final consumers of transport are undergoing a revolution in their ability to handle information. Increased information handling capability is now widespread, the customer expects his transport operator to be as effective in the use of the new technology as themselves. Their entire manufacturing systems



may be moving towards reduced time interval management- the transport operator lags behind at his peril.

Market research, trend analysis, data collection and analysis are no longer activities carried on in some "factory of the future" concept, but must become an integrated part of the hauliers world. The high emphasis place on customer relations by most transport operators will in the very near future rest more and more on the ability to provide data compatible facilities.

It is not being suggested that the use of IT will automatically ensure success. The basic point is that industry at large is becoming much more expert at handling large volumes of information very rapidly. This creates pressure to ensure that all "down the pipeline" services are effective in responding to the requirements that such rapid information processing produces. It is often through reductions in time movements that economies are obtained by industry. A transport company which is not equipped to fit in to such systems may very well negate any potential savings. If this happens the haulier is simply removed from the system

**Utilization of assets.** The trend towards more frequent, time slot scheduled deliveries, will mean that the utilization of vehicles must increase, or the haulier will be forced into ever higher investment in vehicles which are worked less

intensively. Whilst there is little doubt that the IT based aids for routing and scheduling can sometimes leave something to be desired, it is never the less true that they do increase utilization, and are improving in realism constantly.

A wide range of software specifically designed for the road transport fleet is available. The management of the fleet through the use of performance ratios and other management aids can revolutionise the work output of vehicles. In addition appropriate software can facilitate the identification of areas of profit growth, profit decline and other elements which might require attention.

Often in the past the reason for not employing many of the types of techniques referred to was the impossibility of processing vast amounts of calculations, the whole point about the use of IT is not that managers become super efficient overnight, but that the volume of data which can be processed takes an enormous leap forward. The maxim must become Management Action not Management Reaction!

**Marketing.** As the larger firms move into ever more market sectors, the smaller organizations will be forced either to adopt a more aggressive marketing attitude, or be content to operate on the margins. Marketing was the area, more than any other, where hauliers of all sizes displayed the greatest weakness.

There is every possibility of the smaller organization stealing a march on his larger competitors by better market information and a more aggressive marketing policy. The fight must be taken into the customers offices, not on the basis of price, but on the basis of a higher value added service. The trend is away from own account operations, the customer will be receptive to well argued, well presented and accurately priced propositions.

**Personnel and Training.** The supply of managers capable of rising to the challenges of the future and indeed the present must be secured. The almost total lack of effort in this area- with some notable exceptions, almost certainly means that the demand for managers with a knowledge of the industry, plus the expertise to respond to the currently rapidly changing conditions will continue to outpace supply. A cursory examination of the press illustrates the high salaries £25,000 plus, which such individual can command. The lack of training initiatives will not only ensure that such managers become even more expensive, but the implication is also that many firms will find growth that more difficult as a result of a shortage in personnel.

## FUTURE TRENDS.

It is not apposite in this thesis to speculate on future trends for individual sectors or fleets. More general trends however can be briefly commented upon.

The more aggressive larger firms, especially those in the Fast Mover and High Loader, areas are constantly searching for new segments to ensure continued high volumes of traffic. A degree of industrial inertia seems to be building up in the sense that as they grow their sophistication increases, as their sophistication increases so does the level of investment in technology, as the investment builds up the need for more traffic presses, which leads them into ever more market segments. The appetite for acquisitions is also accelerating, with many family hauliers being absorbed by the national and multi national concerns.

The end result must be a pushing out from the centre of activity of the small haulier. They lack the expertise and the financial resources to compete. Therefore in the future they will either be absorbed directly into the expanding organizations, be integrated in the market by becoming slave feeders to the large companies, or finally, be relegated to those market sectors with low value added potential, which are of no real interest to the pace makers. In such sectors the

price competition cycle takes over and expansion and growth become extremely difficult.

The possible way out is to develop a symbion relationship with a successful customer, to in effect become a Niche Seeker. The path forward there, must include better information handling, more modern management approaches, in short, the range of changes which will have to be introduced for success in any sector. The advantage is that being in a symbion arrangement appears to provide a vital element not present in the open market, namely a degree of security.

The core objective of the research project was to investigate the practice of management within the road transport sector, to attempt to identify the portfolio of management policies which successful firms in the industry followed, if such a portfolio existed.

Perhaps the most interesting result from the research undertaken, was the conclusion that growth and success in the industry were not sector or traffic dependent, but apparently rested on the inclusion in the policy portfolio, of those functions and attitudes which intuitively would be expected in a successful firm in any industry. In spite of much hand wringing in the past, in this respect at least, the road transport industry does not appear to be very different from other areas of activity.

The traditional arguments of cut throat competition and various "special circumstances", which have been well rehearsed to obtain special treatment for the industry do not appear to be valid. The judicious selection, and efficient implementation of effective management policies will in the transport sector, as in any other area of business activity, bring their due reward.

It is true that there are segments of the market where price competition is extreme and where power appears to be in the hands of the buyer. In these sectors growth is difficult, but modest growth can be achieved. Such conditions moreover, exist within other commercial sectors, the appropriate policy is to gather as effective market intelligence as is possible, if this indicates that the return in the sector is too low, and cannot be increased through the deployment of effective resource management techniques, then long term plans must be made to leave that sector.

In the past the reaction in the road transport world has very often been to demand "government action." the time has come perhaps, for management in transport to come of age, meet market forces head on and manage. The Fast Movers and High Loaders have led the way- it is up to other management to follow.

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