

WHEELS WITHIN WHEELS  
FREIGHT TRANSPORT IN SOUTH AFRICA.  
by

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## **ABSTRACT**

This study focuses on road freight transport in South Africa, as one part of a transport system which should integrate different modes of transport. Road freight is seen not only as closely related to the movement of passengers, but also as integral to the process of production.

The efficient organisation of road freight transport is seen to hinge largely on minimising the waste of capacity. Better utilisation of infrastructure, new technology, new methods of operation and of organising human resources are seen to be key elements in improving efficiency.

However, the economic imperative of eliminating wasted capacity have to be matched by environmental and social imperatives. A transport policy framework therefore has to encompass these factors.

Part One of the study includes an overview of existing transport policy objectives, and suggests some possible alternatives. Part Two describes and analyses the relationship of transport to the South African economy as a whole and the economic structure of freight transport (both road and rail). Part Three describes and analyses the administrative framework which currently determines the operation of the freight transport industry. Part Four looks at road freight transport in more detail. The role of freight transport in manufacturing, commerce, and agriculture in South Africa is analysed; various technological developments are explored; external costs such as fuel and maintenance are detailed; and ownership within the road freight sector is analysed. In the Conclusion the author draws some implications of the issues explored in the rest of the study for road freight transport policy formation.

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## INTRODUCTION

The primary focus of this study is that of road freight transport, but the context is transport for all purposes, and the relationship of road transport to other modes.

Transport is a basic integrating factor of the economy and the society connecting production, trade and consumption into an integrated process of social reproduction. A transport system is also a mechanism for spatial reorganisation. It has the capacity to reduce economic polarity, create new investment opportunities in peripheral areas, and improve the movement of information, people, and commodities.

Passenger and freight transport are generally treated separately, but they are two ends of the same process. A large part of personal travel is related to the production and consumption of the same goods that are distributed through the freight transport network. Shopping trips, whether by public transport, by private motor vehicle, or by foot constitute the final stage of the transportation of goods. Goodwin et al<sup>1</sup>, writing on transport in the UK, show that the average customer in Britain takes away 23kg of goods from a superstore (hypermarket) every time she/he shops. It takes 8000 people, 70% of whom are likely to be driving in a car (ie in 5500 cars), to take away goods delivered by seven heavy goods vehicles.

Central to this study is the argument that it is not enough to improve parts of the transport system, whether those parts be the public passenger transport system, the railway system, the airways, the road network, or the efficiency of road freight transport itself. Any sensible national transport policy has to integrate all modes. Within an integrated approach, it is clearly necessary to identify the specific policy and strategic requirements of each particular transport mode, and the sectors within it. This study will primarily focus on freight transport.

Not only is it necessary to improve all parts of the transport system, but within the freight sector it has become increasingly necessary to perceive of transport as a process integrated with production. "Logistics" is a term now favoured by many. Whether talking of manufacturing, mining, or agriculture, "logistics" implies the integration of planning and execution of the supply and storage of raw materials; the transport required within the production process itself; and distribution of the product.

A peculiar characteristic of transport is that its output perishes with production. There is no "product" to speak of. Storage is therefore impossible, and supply generally has to meet the highest potential demand which can be economically dealt with. Because demand inevitably fluctuates, there is bound to be excess capacity. The efficient organisation of a transport system (in the case of this study road freight transport) therefore hinges largely on minimizing the waste of capacity. Better utilization of infrastructure, new technology, new methods of operation and of organizing human resources are all part and parcel of this process. Integral to this study will be an exploration of these issues in relation to the road freight transport industry.

But the planning of road freight transport cannot simply be a matter of ensuring that goods get to the market and are distributed at an affordable price, and that wasted capacity is eliminated. Such economic imperatives have to be matched by social and environmental imperatives. A policy framework which encompasses social and environmental factors has to exist within which the economic imperatives are pursued.

Part One of this study therefore starts with an appraisal of overall transport policy objectives in South Africa - both existing stated government objectives and possible alternatives. Part Two describes and analyses the relationship of transport to the South African economy as a whole and the economic structure of freight transport itself (both road and rail). Part Three



describes and analyses the administrative framework which currently determines the operation of the freight transport industry. Part Four looks at road freight transport in more detail. The conclusion draws together the implications of issues raised in the previous sections for road freight transport policy formation.

1. Goodwin et al (1991)

## PART ONE : TRANSPORT POLICY ISSUES IN SOUTH AFRICA

### CHAPTER ONE

#### GOVERNMENT POLICY

Since the founding of the Union of South Africa in 1910, successive governments have sought to use transport as an instrument of economic development - whether through the construction of a railway network to meet rural (especially agricultural) transport needs; through programmes of road construction and improvement in which road infrastructure has been provided before commensurate traffic growth has taken place; through the reorganisation of the docks in the 1970's to make way for the technological development of containerisation; or through the part ownership of the country's largest shipping firm Safmarine, in the 1960's. In addition governments since 1930 regulated competition between State and private enterprises in the supply of transport through a complex network of regulations (in particular, the permit system).

The period 1910 to 1980 could broadly be described as one in which governments pursued a series of "Supply Leading" policies in relation to transport. They sought to supply the transport infrastructure in the expectation that economic development through investment in productive activities would follow.

From the time that it came to power in 1948 the nationalist government sought to further refine its supply leading transport policy. In 1956 the government made industrial decentralisation a cornerstone of the policies of apartheid and separate development, following the publishing of the Tomlinson Commission for the Socio-economic Development of the Bantu Areas. The policy of decentralisation was only implemented in 1960, when a number of 'growth points' were identified, and incentives offered to industries to locate there. By the late 1970's it was clear that the policy was not working. An attempt at developing a co-ordinated regional development strategy was made through the

launching of the "Good Hope Plan" in 1982. This plan divided the country into nine development planning regions. Companies were offered incentives to develop industry in over 50 officially determined Industrial Development Points (IDPs) located in the less developed regions. Such incentives included transport rebates, electricity concessions, and wage rebates.<sup>1</sup> These rebates continue to exist. The transport rebates apply both to the Transnet's (previously the South African Railways and Harbours) rail (Spoornet) and road (Autonet) services, and to private transport, and reach up to a maximum of 60% of the cost of transporting outgoing goods, in certain regions. Rebates are not granted in respect of the supplying of inputs to IDPs. Wallis and Truu<sup>2</sup> argue that the cost of transport does not generally exert a significant influence on the location decisions of manufacturing industries either in the context of the IDPs or elsewhere in the world. They argue that the various incentives offered, including transport incentives, have led to short term investments reliant on cheap labour, rather than to long term and serious industrial development. Whilst the availability of an adequate transport system may be a pre-requisite for the decentralisation of industries to the IDPs, it is not a determinant.

More recently the government has shifted gear completely. It has largely deregulated the transport market through the introduction of the Road Transport Quality System (RTQS) (see Part 3) in relation to freight transport, and in allowing the unfettered development of the mini bus industry in the passenger transport sector. It has restructured the state-owned railways/harbours/airways system so that each section of Transnet comprises a distinct operating and profit centre, and there is a good chance that it will follow up previously stated plans to privatise the component parts of Transnet (see Ch 10). Furthermore the government has introduced toll roads on a wide scale (see Ch 9) and has effectively privatised the running of large sections of the national roads network.

The policy context in which the above has taken place is that of the publication of the government's White Paper on transport 1986. The White Paper was the result of recommendations made by the National Transport Policy Steering Committee (NTPS) initiated in 1981 by the National Transport Commission. The Commission's report was the first attempt at putting together a coherent national transport policy. Prior to this the government had responded to transport issues in a disparate and ad hoc manner. Between 1962 and 1983 as many as fifteen different Commissions of Enquiry and Committees were established by the government to deal with one aspect of transport policy or another.<sup>3</sup> Each of these commissions and committees dealt with only one mode of transport.

The recommendations of the White Paper have been in part translated into subsequent legislation (see Ch 9). What is important for the purposes of this chapter, however, is the key policy objectives identified in the White Paper. The recommendations of the NTPS were divided into four sections :- freight transport, passenger transport, organizational matters, and co-ordination in Southern Africa. The starting point of the recommendations was that a national transport policy should be developed in the context of broader national goals and policy. The NTPS cites the Preamble to the Republic of South Africa Constitution Act of 1983, and the Economic Development Programme and National Physical Development Plan as its guiding documents in terms of broader national goals.

It should be noted that nowhere do these documents talk of redistribution of wealth, either between rich and poor nationally, or between urban and rural areas. Economic instruments, such as competition and deregulation, are presented as political givens, and small businesses are referred to as ends in themselves. Self-determination (read apartheid) is central, and there is a heavy emphasis on morality. Nowhere is the question of economic efficiency (national, sectoral or individual operator) identified as an important national goal, and

protection of the environment is completely absent.

Against this background, the NTPS produced a set of goals. The committee's policy document listed a set of transport policy objectives as being

- \* the development of a safe and reliable transport service
- \* the maximisation of user choice and need satisfaction
- \* furtherance of effective and equitable competition
- \* provision of economically efficient services
- \* furtherance of private initiative
- \* reduction in administrative costs and unnecessary government intervention
- \* simplification of regulations to make them enforceable
- \* promotion of open financial accountability for the payment of subsidies
- \* assistance in the co-ordination of transport in Southern Africa
- \* having an independent judicial oversight over transport related administrative decisions
- \* encouragement of participation in the system by all population groups
- \* encouragement of small business development
- \* assistance in regional development
- \* devolution of decision making
- \* minimimising the external side effects eg on the environment<sup>4</sup>

A central weakness of the NTPS set of goals is the fact that there are no clear overall economic and social objectives spelt out. The policy goals are not pulled together in such a way that they reflect an integrated approach. In so far as there is an underlying economic policy objective, it is one which seeks to promote "private initiative" and "competition", and the "encouragement of small business development". Nowhere does the NTPS document explain these preferences. The NPTS recommendations therefore confuse policy objectives with policy instruments.

The question is what is the starting point? To what end should various goals or principles be proposed?

## CHAPTER TWO

### FINDING A FRAMEWORK FOR TRANSPORT POLICY GOALS

If the NTPS proposals are to be of any use either now or in the future, important qualifications need to be made. Keith Buchan in *"Wheels of Fortune"*<sup>5</sup> puts forward some interesting transport policy proposals to local authorities in South East England.

The first assumption of Buchan's study is that there is no free undistorted market in transport - that it tends to be an unco-ordinated mix of public and private interventions and investments. It is argued that a new relationship is required between the transport market, public spending, and government regulation. Such a relationship must be built on the basis of clearly defined quality of life objectives. Such objectives are identified as economic development, protection of the environment, accessibility, fairness and choice, safety and security, energy and efficiency (that is, the lowest resource cost), accountability, and flexibility. Every instrument or policy must be tested against these objectives. "In the last analysis", Buchan argues, "transport has no value except in relation to the achievement of these broader quality of life objectives".<sup>6</sup> Transport may influence where people live and where industries locate. It may dictate the size and location of shops, schools, and hospitals, and it may expand or inhibit social activities and work opportunities. It may influence the economic viability of firms and of areas, and its side effects may damage communities or environments. But ultimately it is the extent to which any or all of these effects of transport affect personal and social progress which matters.

Buchan then goes on to list a set of transport policy recommendations not dissimilar to the NTPS goals. The important difference, however, lies in the fact that Buchan contextualises the recommendations. His recommendations also contain some important additions, namely that policy must<sup>7</sup>:-

\* integrate transport planning so that all modes are

considered together and the performance of the transport system is measured against quality of life objectives

- \* assist in the modernisation of distribution methods
- \* identify constraints within which transport provisions must operate

More specifically, in relation to the objective of economic development, his proposals set out a number of additional criteria for a coherent transport policy. He argues transport policy must<sup>8</sup>:-

- \* develop transport infrastructure which supports sustainable economic development, and which does not create or reinforce regional imbalances
- \* support research, innovation, and technological progress in manufacturing for, and the operation of, transport
- \* assist in operating the labour market by providing accessibility to employment sites
- \* reduce the cost of transport to industry both by reducing congestion and encouraging efficiency
- \* regulate the industry in relation to decent wages and working conditions
- \* provide adequate training to meet the needs of transport industries

An important over-arching objective needs to be added to Buchan's list - that is, the creation of conditions which promote the redistribution of resources and wealth.

The policy objectives approach to transport is one which takes decision making beyond the traditional divides of rail/road; nationalisation/privatisation; regulation/deregulation; centralisation/decentralisation. National transport planning must be considered as integral to economic and social planning. The approach is supported by Leinbach and Sien in writing on South East Asian Transport, when they argue that transport does not produce development in and of itself, and that the "objective of a national transport plan is to assess the needs for and constraints upon transport as they are related to the development



of social and economic activities".<sup>9</sup>

Throughout this study I hope to measure developments in freight transport (past, present and future) in the first instance against the primary objective of the redistribution of wealth and resources, and in the second instance against a combination of the quality of life objectives set out by the NTPS proposals (excluding the policy instruments of free competition, private initiative, and small business development) and by Buchan in *"Wheels of Fortune"*.

## Endnotes to Part One

1. Maasdorp G (1990b)
2. Wallis J L and Truu M L (1990)
3. *du Plessis Commission 1962*, into motor vehicle insurance  
*Schumann Committee 1964*, into SAR rating policy and tariffs  
*Marais Committee 1969*, into SAR subsidies, road standards, the role of various transport modes in the economy, and the control and administration of the various modes.  
*Steyn Committee 1972*, into the SA Road Safety Council  
*Reynders Commission 1972*, into Export trade (with a chapter on transport)  
*Driessen Committee 1974*, into Urban transport problems  
*Theron Committee 1976*, on the Coloured population (with a chapter on public transport)  
*van Breda Commission 1977*, into a draft Bill to replace the Motor Carrier Transport Act  
*Franzsen Committee 1979*, into rail passenger services and subsidies on the SAR in general  
*Riekert Commission 1979*, into the utilization of manpower  
*Browne Committee 1980*, into the finances of local authorities  
*Cillie Committee 1980*, into the Soweto riots (with a section on public transport)  
*Margo Commission 1981*, into Civil Aviation  
*Select Committee on Toll Roads 1982*, into the introduction of toll financing of roads  
*Welgemoed Commission 1983*, into the bus passenger transport industry
4. White Paper on Transport (1986) pp 9
5. Buchan Keith (1990)
6. Buchan Keith (1990) pp 14
7. Buchan Keith (1990) pp 15
8. Buchan Keith (1990) pp 27
9. Leinbach Thomas R, and Sien Chia Lin (1989) pp 50

## PART TWO : TRANSPORT AND THE SOUTH AFRICAN ECONOMY

Part Two will provide an economic overview of the transport industry as a whole, and the freight transport industry in particular. The specificity of road freight transport will be explored further in Part Four.

### CHAPTER THREE

#### TRANSPORT AND GDP; EMPLOYMENT; MODAL MARKET SHARE; AND PRICE INDICATORS

##### 1. TRANSPORT CONTRIBUTIONS TO THE ECONOMY MEASURED IN TERMS OF GROSS DOMESTIC PRODUCT

There are three ways in which the contribution of transport to the Gross Domestic Product can be measured. First, one could compile and sum the annual national expenditure on all types of transport. This method tends to overstate the contribution of transport when translated into percentage of GDP, because many expenditures on transport do not fit into the categories of final consumption and capital formation used to calculate GDP. Another way of calculating the contribution of transport to GDP is to measure the value added by transport, or the net income of transport activities, to household, businesses, or government as a proportion of the aggregate national value added. Finally the contribution of the transport sector to the economy can be calculated by using transport expenditures as a percentage of the total expenditures where only final consumption and capital formation expenditure are included.<sup>1</sup>

The South African Reserve Bank calculates transport's contribution to GDP by using the second method, which is the most common internationally. The Reserve Bank adds together the earnings of Transnet, private transport hauliers, and government enterprises.<sup>2</sup>

According to the South African Reserve Bank Quarterly Bulletin, Central Statistical Services, the transport contribution to GDP in South Africa has been as follows :-

RAND (millions)

YEAR	1981	1983	1985	1988
<b>At current prices</b>				
Gross Domestic Product	67 908	86 153	114 960	178 534
Transport Sector				
SATS/Transnet	3 612	3 707	5 099	7 827
Private Transport	1 260	1 592	1 194	4 193
Govt Enterprises	65	85	111	143
Total Transport Sector	4 937	5 397	7 204	12 163
Transport % of GDP	7,3	6,3	6,3	6,8
SATS % of GDP	5,3	4,3	4,4	4,4
SATS % of tspt revenue	73,1	68,7	70,8	64,4
<b>At constant '85 prices</b>				
Gross Domestic Product	113 157	109 807	114 960	121 184
Total Transport Sector	8 226	6 878	7 467	7 610

Table One : Transport's Contribution to GDP <sup>3</sup>

In the above table, the transport sector of the GDP consists of all commercial transport of goods and passengers by all modes of transport. Private transport includes only operators whose main activity is transport and it does not include ancillary transport (own account) and private motoring. On average for the years 1981 to 1988 inclusive, the contribution of transport to the GDP was 6,6%. However Professor Jackie Walters of RAU University suggests this could be as high as 10% if the contribution of private ancillary transport were taken into account.<sup>4</sup>

For international comparisons a useful figure is the combined figure of transport, storage and communication, as most countries publish these figures together. In 1986 these three sectors in South Africa combined contributed 8,86% of GDP. On average between 1925 and 1986 this figure was 8%<sup>5</sup>. Contributions of transport and communications as a percentage of GDP for the following countries in 1982 were :-USA 7%; France 6%; UK 8%; Japan 6%; Kenya 5%; South Korea 8%; Brazil 6%; Indonesia 5%; Malaysia 6%; Singapore 19%<sup>6</sup>

Perhaps a more useful pointer to the significance of transport in relation to GDP is that of actual growth. In 1988 GDP grew by 3,1% whereas growth within the transport sector was 6%, indicating a possible significant contribution to the economy.<sup>7</sup> However it would be dangerous to read too much into this transport growth figure, as the real question is what effect transport growth has had on other sectors. For example, if the growth in the sector arose primarily as a result of a rise in the price of transport (resulting in a rise in the transport value added), then the same growth in the transport sector may in fact not represent a significant contribution.

## 2. EMPLOYMENT IN THE TRANSPORT SECTOR

The total number of employees in the transport sector in 1981 was 383 143. By 1988 this had declined to 282 778, largely due to a massive decline in employment by Transnet (previously South African Transport Services).

In 1980 SATS/Transnet employed 266 403 workers, and by 1988 the numbers had declined to 184 522<sup>8</sup>. By the end of 1991 numbers had declined further to 164 196<sup>9</sup>. There were no major redundancy exercises in Transnet during this period. However, from 1983 employment figures were consciously allowed to decline through natural attrition in an apparent attempt to improve productivity. Forty five percent of the Transnet workforce is white, compared to 53% in 1946.<sup>10</sup> Labour currently constitutes 47% of Transnet's operating costs.

Of the total number of persons employed in the sector, 64 652 were employed in the road freight transport industry (for reward) in 1988, compared to 82 710 in 1980<sup>11</sup>, 81 085 in 1981, and 65 236 in 1990<sup>12</sup>. By January 1991 the figure had dropped further to 57 554<sup>13</sup>. In less than ten years employment has therefore fallen by over 30%. This decline in numbers can be explained largely as a result of the elimination of large numbers of co-driver and driver's assistant posts, as well as the contracting out by some companies of workshop and other activities. The introduction of increasingly large trucks could also be an important factor. Volumes carried have in fact increased in the same period, so this is clearly not a factor in the reduction of the workforce. (Using a base of 100 in 1981, metric tons carried increased to 106 in 1990<sup>14</sup>.)

In 1981 7,8% of the total national workforce was employed in the transport sector. By 1988 this had declined to 5.7% of the total workforce.<sup>15</sup>

### 3. MODAL MARKET SHARE

#### 3.1 Goods transport

There are numerous ways in which usage of the respective transport modes may be compared. Comparisons can be made by tonnage, by tons per km, by kilometres, or by revenues. The most useful comparisons are by tonnage and by revenue. The following percentages are based on tonnage:-

	1985	1986	1987
private road tspt own a/c	45,5	51,1	49,8
public road tspt (reward)	30,4	28,7	24,9
rail/sea/air tspt	22,5	17,1	19,7
hire transport	0,7	2,8	5,2
other transport	0,9	0,3	0,4

Table Two : Tonnage moved per transport mode<sup>16</sup>

From the above table it can be seen that road transport consistently accounts for over 80% of tons moved. Between 1987 and 1988 the total tons conveyed by rail declined slightly from 170,6m tons to 165m tons<sup>17</sup>, whilst total tons moved by private road hauliers increased sharply for the first time since 1984, from 421,5m tons to 539,7m tons.<sup>18</sup> The modal split between road and rail in both West Germany and in Holland is similar to that in South Africa, whereas in the United Kingdom rail only accounts for 9% of tons moved. (It is interesting to note that in 1965 rail accounted for 20% of tons moved in the U.K.)

Comparisons of revenue reveal a somewhat different picture. From the figures cited earlier it can be seen that SATS/Transnet (rail, road, sea and air) accounted for 73.1% and 64,4% of transport revenue in 1981 and 1988 respectively. (It should be noted that these figures for revenue include revenue from passenger transport, and exclude private goods carriers.) The difference in revenue contribution can be explained by the fact that the railway sector of Transnet, Spoornet, carries large quantities of high bulk/high value minerals.

Private firms transporting goods for reward travelled a total distance of 1 485 901 000 kilometres in 1988<sup>19</sup>, whilst goods conveyed by rail covered a distance of 86 997 513 000 in the same year<sup>20</sup>. 33% of the total tonne kilometres transported within South Africa in 1985 was moved by road, 66% by rail, and 1% by sea<sup>21</sup>.

Changes in modal split, the reasons for such changes, and their impact, will be explored throughout the study, as it is these dynamics which lie at the heart of the efficiency and productivity of any national transport system. One of the primary factors determining modal choice is that of regulation. Other important factors determining modal choice are total transit time; client deadlines; commodity value per ton; stock related elements; distance to be travelled; availability of intermodal facilities eg rail sidings; freight rate charges; storage

charges; commodity-volume-weight ratio; product perishability; size of shipment; and reliability.

### 3.2 Passenger Transport

By 1991 Spoornet's share of the public transport market had been reduced to below 30%.<sup>22</sup> Further analysis of the changing modal split within the passenger transport sector is not within the scope of this study.

## 4. TRANSPORT PRICE INDICATORS

The following figures reveal interesting changes in the cost structure of transport between 1985 and 1989 :-

Item	1985	1986	1987	1988
1985 = 100				
Consumer Price Index	100	118,6	137,7	155,4
Total Tspt Prices	100	117,6	129,8	144,0
Total Running Costs	100	105,4	106,5	114,7
1980 = 100				
Vehicle Purchase Price	219,9	305,4	383,1	454,6
Fuel Prices petrol	154,1	150,2	146,7	162,3
diesel	153,6	149,4	147,2	152,0

Table Three : Transport Cost indices <sup>23</sup>

As can be seen from the above, the index price for commercial vehicles has increased fourfold during the period 1980 to 1988, largely as a result of the declining value of the Rand. In 1989 alone fixed costs for road transport carriers (of which vehicles constitute the highest proportion by far) rose by 29%, with the cost of one large rig rising to well over half a million rand.<sup>24</sup> Given that vehicles depreciate at 25% per annum, an inability to achieve earnings above this results in the erosion of real investments. The Reserve Bank estimates that between 1982 and



1989 the real gross domestic fixed investments in the road transport sector declined by 63,2%.

Increases in vehicle prices have had a profound effect on sales, with sales of heavy freight vehicles (those exceeding 7,5 ton GVM) declining sharply between 1980 and 1989. In 1980 27 000 new heavy vehicles exceeding 7,5t GVM were sold, whereas only 10 000 were sold in 1989. The lowest point was reached in 1986 when 7 000 new heavy vehicles were sold.<sup>25</sup> This decline has contributed to the decline in vehicle sales as a proportion of GDP - 5,57% in 1983 and 4,4% in 1987. The drop in vehicle sales has in turn affected the relative age of heavy vehicles. In 1989 there were 181 000 vehicles larger than 7,5 ton GVM on the road, of which 41% were older than ten years.<sup>26</sup> The older the vehicle the less fuel efficient it is likely to be, and the more maintenance it is likely to require.

Whilst running costs kept below the CPI for the period 1985 to 1988, since then costs have escalated sharply. Tyre prices have risen dramatically - an increase of 297% for heavy goods vehicle tyres between May 1989 and June 1990. Licence fees, too, have risen sharply. Between April 1988 and April 1989 alone, licence fees rose by 84% in the Transvaal, and 70% in the Cape, Natal and Orange Free State<sup>27</sup>.

These factors have led to rapidly rising operating costs in the road freight industry - an increase of 56% in the running costs per km of a six axle vehicle, between April 1988 and June 1990 (compared to an increase in the CPI of 30%).<sup>28</sup> In 1984 the running cost (fuel, tyres, oil, depreciation, and maintenance costs) of a heavy goods vehicle was 80c per km, while in mid 1989 it was R2.20. The running cost per km for cars and light delivery vans increased proportionally much less during this period. A car cost 20c per km to run in 1984, and 60c in 1989.<sup>29</sup> Disaggregating the running costs and analysing the increase in fuel prices, it can be seen that although there have been very sharp increases in fuel prices during the eighties, the

overall fuel price index has remained more or less in line with the CPI since 1960.<sup>30</sup> Thus the increase in running costs relative to the CPI since 1988 is largely due to increases in vehicle prices, tyres, and maintenance.

Increased running costs have in turn had an effect on proportions spent on transport in the production process. The Seifsa index of road freight costs shows that between 1979 and 1990 the index rose five fold.

The proportion of costs attributable to transport has been further enhanced by the growing role of "logistics" in the production and distribution processes. Increasingly transport is no longer seen as an ancillary activity, nor an afterthought. The rationalisation of production and distribution processes, has led to a different (and more expensive) type of logistics. Transport is increasingly taking over from stock holding, both in the production and the distribution process. Firms are increasingly reliant on "logistics" to give them the leading edge. (This development will be explored further in Part 4.)

## CHAPTER FOUR : INFRASTRUCTURE AND ASSETS

### 1. ROADS

In March 1989, the following lengths of road existed in the four provinces of South Africa (ie excluding the bantustans):-

dual carriage freeways	1 752km
conventional dual carriage	357
single carriage (paved)	50 238
gravel roads	128 794
<b>Total all roads</b>	<b>181 141</b>

*Table Four : Road lengths, RSA excluding bantustans, in km <sup>31</sup>*

In the bantustans the following roads existed in the years cited

Venda 1986	191 km paved	922 km gravel
Transkei 1982	807 km paved	1 218 km gravel
Bophutatswana 1983	756 km paved	4 534 km gravel
Ciskei 1985	449 km paved	2 559 km gravel
Gazankulu 1986	99 km paved	1 989 km gravel
KaNgwane 1986	139 km paved	722 km gravel
Qwa Qwa 1986	total 6868 under	Dept of Works

*Table Five : road lengths in the bantustans <sup>32</sup>*

The current lengths of surfaced roads, expressed in metres per capita, are :-

RSA (Excluding Bantustans)	2,8m
TBVC States	0,3m
self governing territories	0,5m
<b>overall</b>	<b>1,7m</b>

*Table Six : Road Lengths, metres per capita<sup>33</sup>*

The figures for the TBVC states and self governing territories are particularly low when compared to Australia (16,6m) and even to Zimbabwe (1,63m). These figures reveal the bias in road infrastructure towards links between and within major industrial centres. Rural bantustan areas have clearly not been central to road planning and policy. To eliminate the current backlog of rural road construction and maintenance over the next ten years would require an annual expenditure over ten years of about 80% more than the total 1988 rural road budget.<sup>34</sup>

Not only has there been a bias away from rural areas, but within the urban areas there are also biases in expenditure. Paved (tarred) roads and streets in urban areas of South Africa currently total about 34 000km, and unpaved roads and streets about 9 000km.<sup>35</sup> The bulk of these untarred roads exist in african townships. The operating expenditure of township local authorities on roads is less than one tenth of the operating expenditure of white local authorities. Figures for relative capital expenditure are unavailable.<sup>36</sup> However, drive into any township and it will be clear that current expenditure barely covers urgent needs, let alone the construction of basic road infrastructure.

The combined expenditure on roads by national, provincial and local authorities declined slightly in real terms during the period 1980 to 1990. According to Dehlen<sup>37</sup>, in 1988 R26 000 was spent per million vehicle kilometres. Dehlen argues this is significantly lower than in comparable countries elsewhere. However, despite this, and despite the urban/rural and white/black biases identified above, South Africa spends a surprisingly high proportion of GDP on roads annually. According to the Director General of Finance, the aggregate expenditure on roads is amongst the highest in the world, amounting to around 2% of GDP.<sup>38</sup> In the 1980/1 budget year a total of R918 685 000 was spent on South African roads in total, and in 1987/88 the figure was R2 335 699 000.<sup>39</sup>

Bad roads do not deter users or volumes of traffic. They simply raise the cost of transport. A poor surface can add 42% onto vehicle maintenance and running costs, poor curvatures can add a further 16%, and poor gradients can add a further 42% to costs<sup>40</sup>. In other words, a poor road can double the running costs of a vehicle. The World Bank likewise has calculated that a \$1 reduction in road maintenance expenditure can increase the cost of vehicle operation by \$2 to \$3.<sup>41</sup> A failure to maintain roads therefore amounts to disinvestment in the road system.

The primary source of road funding is the Treasury, with a growing, but nevertheless small proportion of funding coming from the private sector through the newly established toll road financing system (see Ch 9 for further detail on the toll roads). In the past the responsibility for the construction and maintenance of roads has been divided between the National Roads Board (previously the National Transport Commission), the provincial administrations, and the local authorities. The NRB is funded directly by the Treasury (previously through the fuel levy, more recently from general tax revenue) and the provincial authorities have received annual budgetary allocations on the basis of a fixed formula. This formula combines the previous year's expenditure with the number of vehicles on the provincial register, and the size of the road network. However, there has been no obligation on the part of the provincial authorities to spend their road allocation on roads. It has been very easy to divert these funds to other needy causes eg health. This has resulted in a totally ad hoc system, with no medium or long term planning of expenditure on road infrastructure. By the admission of the Director General of Finance, "control over road affairs is presently grievously fragmented between the central government, statutory bodies, the provinces, the self governing and independent territories, and third-tier authorities, leading in turn to a lack of co-ordination, waste, and empire building."<sup>42</sup>

A road construction manager, Mr J H Eccles, complains that the Treasury has used the funding of construction industry for road building as a means of balancing the national budget. He argues that fluctuating and erratic funding, coupled with inadequate pre-planning of road construction, has had drastic consequences for the construction industry.<sup>43</sup> Myburgh et al have shown that the variations in distribution of funds over the various provinces as well as the division of funds between construction, maintenance and administration has resulted in annually vastly varying demands for the products and services offered by the construction industry. For example, in 1987 the demand for resurfacing was up 39%, the following year it was down 28%, and the following year it was up again by 29%. In turn these fluctuations led to massive and unexpected fluctuations in the volumes of bitumen products, tar, emulsion, hot mix asphalt etc demanded.<sup>44</sup> Eccles argues that such fluctuations have meant that when demand has been down, unemployment and the loss of skilled workers has ensued, whereas when demand has been up, overutilisation has occurred. This has led to inefficiencies and shortages of both skills and materials, leading in turn to a dire instability in the industry. Productivity growth for all road construction contractors has been minimal, resulting in the Treasury paying increasing high real prices for roads.

In an attempt to redress the above situation, the Cabinet in 1986 decided that a new strategy was needed, and entrusted the Department of Transport with the task of advising the Treasury and Cabinet on the allocation of funds to the several authorities. The Department of Transport was made the co-ordinating mechanism whereby the aggregate financial needs of the entire transport infrastructure will be determined and proposals submitted for the appointment of funds to the four transport modes - rail, air, sea, and road. There is, however, no evidence to date that such co-ordination of funding has begun to take place. Funding of roads appears to be as ad hoc and erratic as ever.

## 2. RAILWAYS INFRASTRUCTURE AND ASSETS

In 1990 the total book value of Transnet's assets was R14,7bn, the replacement of fixed assets being about R65bn (excluding value of 134 000 ha of land). Assets include one of the largest mainframe computer applications in the country, with over 5000 terminals and over 550 support staff.<sup>45</sup> The infrastructure of Spoornet (the railways division of Transnet - see chapter 10 for further details on Transnet's structure) including grounds, buildings, permanent way, signalling, mechanical equipment and vehicles, electrification has a joint asset value of about R16 000m.<sup>46</sup> This figure excludes lines, stations, and rolling stock, which are owned by the SA Railway Commuter Corporation.

### 2.1 Rolling Stock

The SATS report for 1989/90<sup>47</sup> reports the rolling stock operated by Spoornet in March 1990 to be the following :-

Wide gauge : 240 steam locos, 1 413 diesel locos, 2 341 electric locos, 4 728 commuter (electric) coaches, 4 247 mainline coaches, and 155 121 goods trucks. 50 alternating current electric locos and 50 electric/diesel locos were on order. In 1990 there were 10 000 less wide gauge goods trucks than in 1988, although the total tonnage handled increased by 20 million tons in the same period.

Narrow gauge : 12 steam locos, 20 diesel locos, 24 passenger coaches, 1 714 goods trucks

Spoornet is currently investigating replacing steel tanks with polyethylene and flexible tanks for the transportation of liquid. According to Spoornet's chief executive Barry Lessing<sup>48</sup>, the design of mainline passenger coaches has resulted in an enormous amount of unused space. However it would cost too much to redesign or rebuild the coaches. Lessing therefore anticipates that the mainline passenger services therefore have a limited future.

At any one time there are about 10 000 goods trucks, with a replacement value of R700m, in the neighbouring states. The

arrangement within the region is that when a goods truck crosses a border, a locomotive from the country being entered takes over its haulage. To discourage neighbouring states from using South African rolling stock for domestic purposes before sending the goods trucks back (either empty or full), a daily tariff is charged for the time the trucks spend outside of South Africa. However most southern African countries have been unable to avoid using South African rolling stock extensively for domestic purposes.<sup>49</sup> Mocambique state railways, CFM, has for a number of years also had to hire extra locomotives from Zimbabwe, adding to its already serious cash crisis.<sup>50</sup> In turn Zimbabwe itself has been using Transnet locos on loan on account of over half of its own locos being out of commission.<sup>51</sup> Zambia too is desperate for locos and spares.

## 2.2 Track

The railway track network in South Africa is as follows :-

	1981	1987/88
route distance	23 581	23 507
route electrified	7 128	8 515
track distance	35 838	36 449
double track distance	5 726	6 958
track electrified	14 817	17 538
number of stations	997	936

*Table Seven : Railway track network RSA<sup>52</sup>*

Whilst there is still considerable non-electrified track, 90% of traffic is conveyed on electrified lines. Two important non-electrified tracks are the De-Aar to Beaconsfield (Kimberley) line, and the Noupoot to Springfontein and Hamilton (Bloemfontein) line.<sup>53</sup>



The average length of haul is 527km, relatively long by international standards. This has implications for modal choice, as in general rail haulage tends to be more cost efficient over longer distances.

According to Heydenrych and Kennedy<sup>54</sup>, three major rail expansion projects have been undertaken in the past twenty years. The cost and scale of these projects gives an idea of the capital involved in any major expansion programmes. The Richards Bay coal line from Broodsniersplaas to Richards Bay Coal Terminal was opened to traffic in January 1976 at a cost of R451,9m. Originally designed to transport 21m tons of coal annually, it was expanded in 1983 at a cost of R1300m, and again in 1990 at a cost of a further R700m. 80m tons of coal per annum can now be transported on the line and exported through the privately owned RBCT. The Saldanha Bay line from Sishen was built and operated by Iscor in the early 1970's. In 1977 SATS took over the line at a capital cost of R650m. The total length of the line is 861km and the loading capacity per electric unit is 17 850 tons of ore. Many trains run with three loco units, therefore carrying almost 60 000 tons in wagons that create a train length of over 7kms. Eighty four bridges had to be built to accommodate the line. (One overbridge costs over R1m.<sup>55</sup>) Both the Richards Bay and Saldanha Bay lines are built to carry some of the longest and heaviest trains in the world. A new centralised rail marshalling yard, Sentrarand, has been built for the Witwatersrand at a cost of R400m. Sentrarand replaced twelve previously inadequate and inefficient yards. Centralised marshalling has overcome the problems created by the fact that 80% of all goods trains contain wagons for several destinations, resulting in the necessity for resorting and re-routing. Sentrarand handles between 130 and 140 trains every day.

In addition to the above expansion programmes, there have been recent rapid changes in the signalling system, with the increasing use of fibre optics as opposed to conventional communications wiring. The telecommunications network started

with telegraphic communications between stations to ensure the safe passage of trains on single track lines, but today's system includes the conveyance of all kinds of data by microwave. The system competes with that of the Post and Telecommunications system in both sophistication and extent. Considerable sums have also been invested in a high degree of computerisation of the despatch of goods and the tracking of goods wagons.

Investment in dedicated mainline passenger lines has not been considered. Spoornet's Lessing has stated that a dedicated line could carry passengers from Johannesburg to Durban in four hours, but that the cost would not make economic sense.<sup>56</sup>

In South Africa it currently takes six people to maintain one kilometre of track, compared to Australia where it take only one person. This raises the difficult contradiction between productivity and the imperative of job creation.

### 2.3 Containers

In 1990 Transnet owned 141 809 3metre and 127 015 6metre containers, and 860 573 minicontainers. In 1989 Transnet owned 679 028 minicontainers, indicating a rapid shift towards smaller scale specialist loading and packaging.<sup>57</sup>

### 3. RAILWAYS INFRASTRUCTURE IN SOUTHERN AFRICA

The same rail width gauge exists throughout Southern Africa. The length of railway in the SADCC countries (not all of which is fully operational), including that part of the Benguela railway in Zaire, is about 13 000km.<sup>58</sup> A Canadian study of SADCC transport found that there would be an over-capacity in the port and rail systems if they were able to operate efficiently.<sup>59</sup> The disruptions of war combined with administrative and security inefficiencies on the southern African rail network have created an increasing dependence on South Africa for the transportation of imports and exports. Minerals sent on the Benguela line, running from Zaire to Angola, can take up to two and a half months to reach the coast, whereas they take two to three weeks

if sent via South Africa. This is despite the massive increase in distance in the South African route. The link between Lusaka and Dar es Salaam, the Tazara railway, carries 45% of Zambia's import and export trade. The railway is single track however, and suffers from landslides. Engines and wagons are in short supply, and those installed by China break down with regularity. In recognition of a chronic shortage of middle management, China sent a 250 person team to improve the operating efficiency of the railway in 1983. This led to some improvements but has not significantly altered the "stop-go" character of the line. Zambia's own rail network is poor, having had no major investment since independence in 1964. The rails are on sand, sleepers have deteriorated, and signal circuits are constantly broken because wires are cut by entrepreneurs making copper bracelets and coathangers. As a consequence trains move extremely slowly on the track, making them vulnerable to frequent attack and robbery. The Nacala rail line from Malawi to the Mocambique coast is virtually closed due to attacks by Renamo. All foreign aid for repair work for the line was stopped in 1988 as a result of the war. The Beira corridor link between Zimbabwe and Mocambique has also been subject to attacks for years. Up to 10 000 Zimbabwean troops guard the line, and on most days two trains run in each direction. Since 1984 R350m has been spent on rehabilitating the line. Some years ago there was talk of building a railway line from Botswana's coalfields to Namibia, to be known as the Kalahari line. However the low price of coal, and the fact that Botswana's other main export mineral, diamonds, is flown by air, has meant that the project has been dropped indefinitely.<sup>60</sup>

#### 4. PIPELINE INFRASTRUCTURE AND ASSETS

Petronet (part of Transnet) has a virtual monopoly over pipeline transportation. No other organisation is permitted to lay long distance pipelines. Petronet's four lines covering 3000km, and having eighteen different distribution points, had a book value of R134m in 1989. The four lines run from Durban to the Natref refinery in Sasolburg (largely carrying crude oil); Natref in Sasolburg to Jan Smuts airport (aviation fuel); between Durban

and the Southern Transvaal via Sasolburg (petroleum products); and between Durban and the Southern Transvaal via Northern Natal and the Eastern Transvaal, taking some products from Sasol Two and Three. The oldest of the lines is twenty four years old, and each should last at least fifty years.

The pipelines are laid at least a metre below the surface. Skilled technology is required to prevent the corrosion of the pipelines, especially from stray electric current. Pumping stations (where gauges are placed to check pressure) are placed roughly 100km apart. The pipelines are largely self-sufficient, employing a large amount of capital and very few people (a total of 640).<sup>61</sup>

#### 5. AIRWAYS INFRASTRUCTURE AND ASSETS

In 1987 there were 154 public and 107 private airports and aerodromes in the country.<sup>62</sup> Eleven of these are state-owned. Aside from the state-owned South African Airways, there are sixteen other commercial airline companies.<sup>63</sup> In 1988 there were 4 303 civil aircraft registered.<sup>64</sup> 31 of these belonged to SAA. This was ten less aircraft than in 1983.<sup>65</sup> SAA had R2,5bn worth of aircraft on order in 1990, the first of which were due to be delivered in 1991.<sup>66</sup> The net national value of aircraft fleets and airports is not known to the author.

A new international airport was opened in Gaborone in 1984 and has resulted in a considerable increase in the number of destinations served from Botswana, including SADCC countries and London. Lesotho's main transport project has also been a new airport, opened in 1985. However the airport has not been built for wide-bodied jets as has the one in Gaborone, and therefore has a somewhat limited use. Swaziland's airport has been substantially upgraded.<sup>67</sup>

#### 6. PORTS AND SHIPPING INFRASTRUCTURE AND ASSETS

The shipping industry is completely dominated by three companies - Safmarine (38% state owned until 1984 when the Industrial

Development Corporation interests were sold to Old Mutual); Unicorn; and IVS, a Barlow Rand subsidiary. The vessels owned by all three companies are due for replacement soon, most having been built in the 1970's and having a twenty year lifespan.<sup>68</sup> Safmarine already has a ship under construction in Eastern Europe, and Unicorn has placed an order for two container vessels to be built in Poland for R120m. The cost of building in Poland is more than R50m cheaper than doing so locally. Delivery of the vessels is expected in 1993, and Unicorn has an option on having two more vessels built there.<sup>69</sup>

Portnet, a subsidiary of Transnet, owns all eight of South Africa's commercial coastal ports. In addition, Transnet owns the inland port of Kazerne in Johannesburg and the recently declared inland port of Pretcon in Pretoria.<sup>70</sup> Kazerne which handled 263 829 containers in 1989/90<sup>71</sup> is one of the largest inland ports in the world. The book value of Portnet assets is in the region of R1000m. Despite the fact that during the 1980s as much as R80m a year was spent in upgrading facilities in the ports, much heavier expenditure would be required to improve handling speeds and to cope with changes in the nature of cargoes (bigger, bulkier cargoes eg granite and steel) and the resultant necessity for larger ships needing deeper water and berths. Such changes would necessitate more forklifts, more high capacity gantry cranes (each costing in the region of R25m), and more specialised terminals (costing in the region of R50m each to build).<sup>72</sup>

The South African European Container Services Consortium (SAECS), of which the three dominant shipping companies are members, operates 32 000 general purpose 6m containers, each with a replacement value of \$3000.<sup>73</sup> The major advantage of containers is that they allow for the transfer of cargo from land to ship and from ship to shore at a much faster rate. However, container handling is space demanding, and facilities require a high degree of utilisation to justify investment. In the late 1970s R500m was put into on shore container handling facilities (state and

private investment combined).<sup>74</sup> Henred Freurhauf, a subsidiary of the transport group Trencor, manufactures all South Africa's containers, and exports them in considerable numbers.

## CHAPTER FIVE

### TRADE

#### PORTS AND SHIPPING

South African harbours handle an export trade to the value of R100bn annually. 99% of all imports and exports between South Africa and non-African countries move by sea. This compares with 80% of trade in most European and North American countries.

Of the 112 Mt cargo handled by the harbours in 1989/90, only 14% were imports. Half the weight in exports was handled by Richards Bay, and a quarter by Durban. Bulk shipped cargo (coal, iron ore, other minerals, and maize) constitutes the largest proportion of exports.<sup>75</sup> These cargoes are generally poured rather than packed into holds, and the ships carrying them travel on no regular routes. This type of trade, known as "tramp trade" relies on load-specific routes. The markets for tramp carriers are highly competitive and responsive to supply and demand changes. Rates for tramp trade are calculated per ship.

By contrast, "liner trade" comprises regular shipments over fixed routes. The holds of liners are very often compartmentalized for the carrying of finished or semi-finished manufactured goods, or sensitive agricultural produce such as fruit. Liners operate within a conference framework which regulates the entry of new members. Liner freight rates tend to discriminate against specific ports, countries, and products. For example, conferences do not offer promotional rates for new exports. In addition, conference rate-making policies escalate charges according to the value of the product being shipped, which in turn results in a cost bias which favours the export of primary goods. Also, because liner routes usually tie developing countries to one or a few metropolitan states, intra-trade between developing countries is discouraged. The bargaining power of developing countries with respect to the pricing of imports and exports is thereby limited. The sensitivity of tramp trade to competition, and the biases of liner trade, are both important considerations

in the viability of South African import and export trade.

A third type of trade is "service requirement trade" whereby vessels come into harbours for bunker stores, water and repairs. The latter type of trade is by far the most lucrative, but clearly somewhat limited in volume in South Africa.

In South Africa, in both tramp and liner trade, there is increasing competition from small independent shipping lines registered in other countries. In an attempt to compete, the South African lines have reduced their rates by about 25% on the south and northbound routes, and export rates are generally between 40% and 60% less than those charged for the same commodities from Australia, New Zealand and the United States.<sup>76</sup> Whilst these lower rates could be expected to result in an attraction of business, the lower rates are offset by a wharfage policy peculiar to South Africa. South Africa is the only country in the world where wharfage is charged according to the value of cargo rather than according to tonnage and classification. This has created particular problems for exporters, and has also resulted in a reduction in the number of ships operated by the South African companies.

A J Yeats argues that studies aimed at exploring new markets for developing countries often erroneously ignore transport costs as a factor. Such studies tend to concentrate on various forms of artificial trade control such as tariffs and quotas, and incorrectly assume that transport costs are natural barriers and outside of the control of policy makers. He further points out that recent investigations have shown that "the structure of freight rates can have important detrimental effects on a developing country's industrialisation objectives since the ad valorem transport costs often rise with fabrication and discourage local processing of raw materials."<sup>77</sup> This is definitely the case with regard to South African exports. Yeats shows that for ten out of 12 processing chains identified in South Africa, the nominal transport costs increase with



processing. For example, the ad valorem shipping rates for processed exports of wool, paper, fish, clothing, and copper are twice as high in the final stages of processing as for the primary input. Only in the case of vegetable oils and iron and steel products does the ad valorem shipping rate decline with fabrication.<sup>78</sup> Shipping rates can also add dramatically to balance of payments problems. Yeats shows that shipping costs often absorb up to 20% of the total export revenues of any developing country. He adds that developing countries are placed at an even further disadvantage in that who pays for transport costs depends on the elasticities of supply and demand. He points out that developing countries tend to pay relatively more for both exports and imports, because for them supply and demand tend to be inelastic. It is only when demand and supply at the two ends of the chain are equally elastic that shipping costs are shared between buyers and sellers. When supply is inelastic, as it tends to be for developing countries, exporting raw materials, the exporter bears the major part of the transport bill. And when demand is inelastic, again as it tends to be in developing countries, the share of freight costs borne by the buyer tends to rise.<sup>79</sup>

Another bias which operates against South African exporters exporting to Europe and Japan, is that import tariff assessment in these countries is based on a procedure known as "cost insurance freight" (cif), whereby the exporter pays tariffs which are applied to the selling price in the exporting country, plus transport and insurance charges. Cif valuation places a disproportionate burden on countries who already carry higher freight costs. The tariff advantages of being classified a favoured trading nation by those western European countries are therefore easily cancelled out by the disadvantages of cif valuation. The "free on board" (fob) system of valuation and tariff assessment which is used by the US, Canada, and Australia would have the effect of stimulating exports much more effectively. Under the fob system of tariff application, tariffs are applied to the free on board price of exports exclusive of

transport and insurance costs to the port of entry.

Given South Africa's high dependence on shipping for imports and exports, a key question with regard to trade and development planning is therefore that of the control of freight rates. Yeats suggests a number of policy measures which could be pursued in order to improve the trading position of any developing country. He advocates the establishment of a national fleet; the improvement of existing transport services; the adoption of new technologies; an improvement in the bargaining position of shippers relative to ship owners; and the establishment of a code of conduct for liner conferences.<sup>80</sup> He argues that the advantages of a national fleet include foreign exchange advantages, the possibility of influencing conference decisions, and a coherent approach to export promotion.<sup>81</sup> Given that the state no longer has any share in South Africa's fleet, such an option would be important to investigate in the South African context.

Besides moving goods to and from South Africa, ships owned by Safmarine (being the dominant shipping company in South Africa) do some cross trading between other countries. For example they ship goods between Japan and the Middle East and also fruit from Morocco to the Middle East and Canada.

Outside South Africa there are an additional seven other commercial ports in the southern African region. The port of Dar es Salaam in Tanzania has been notorious for its operational inefficiency, a lack of handling equipment, and weak port supervision. Chronic congestion resulted and pilferage was common, with imports (many on their way to Zambia) being particularly vulnerable. Stephen Barlow of Zamcargo (a subsidiary of Zambia Copper Mines) argues, however, that "Dar es Salaam should no longer strike fear into the hearts of shippers providing proper arrangements are put in place with respect to the clearing and handling of the cargo". He argues that cargo handling performance has improved steadily, and that only

prejudice stands in the way of greater usage of the port by importers and exporters in the Region.<sup>82</sup> He shows that Dar es Salaam is in fact currently competitive with East London in terms of the total transport cost of exporting cargo from the Zambian Copperbelt to Antwerp, and that it is competitive with Durban in so far as the export of cargo to the Far East is concerned.<sup>83</sup> Mombasa, Barlow argues, is now the black spot for ship owners and operators, mainly as a result of poor equipment and inflexibility of port management. New container terminals are being built in the port of Beira with foreign funding, and the port hopes to become the busiest southern African port after Durban by bringing the volumes back to pre independence levels of 5m tons. The port was dredged in 1989 to allow for bigger ships. The Mocambique government created a crisis for Zimbabwe in December 1989 when it demanded that Zimbabwean shipments going through Mocambique ports be paid for in advance in US dollars, instead of in arrears in local currency. Zimbabwe threatened to reroute all traffic to South African ports, resulting in a delay in the implementation of the change in policy.<sup>84</sup>

Barlow makes an appeal to Southern African importers and exporters to "think twice when importing or exporting concentrates, semi-processed minerals or finished metals and do not automatically specify "Durban" as the FOB load or the CIF destination port". He also encourages mineral exporters to reduce transport costs by developing low cost refining capacities. He cites the example of an initiative taken by the company Marc Rich in Zambia, which set up a refinery for the processing of copper concentrates from Zaire and South Africa.<sup>85</sup>

Clearly if the reliance on South Africa's ports by other Southern African states were to decline, this would have an immediate impact on the activities of South Africa's ports. However, if Southern Africa is to grow as a Region, and the present economic dominance of South Africa is to be curbed, then the use of other Southern African ports is to be encouraged. Barlow suggests that coastal shipping between the various ports is going to play an

increasingly important role in the future transport network of Southern Africa. He points out that this is already a growth area for the established operators such as Unicorn Lines, and for new operators.<sup>86</sup>

#### SOUTH AFRICAN AIRWAYS

South African Airways handled 25 680 309 kg (10,1Mt) of export cargo in the year 1989/90<sup>87</sup>. On the European routes SAA carried only 22% of total exports airfreighted (26,15Mt), but on the second major international route (the Far East including Taiwan and Hong Kong) SAA carried 100% of all airfreighted cargo. This totalled 0,9Mt. Cargo exports to the Far East grew 84% and 49% respectively in 1988/9 and 1989/90.<sup>88</sup> In 1987/88, 2 800 000 kg of the total 23 172 000 kg export cargo was conveyed by SAA to neighbouring states.<sup>89</sup> In 1989 regional traffic carried by SAA increased by 28%.<sup>90</sup> In the years 1988 to 1990, SAA destinations in Africa expanded rapidly. Madagascar, Mozambique, Zambia, Zimbabwe, Malawi, Namibia, Mauritius and the Indian Ocean islands, Zaire, Kenya, and Rwanda have all become regular destinations.

SAA operates no full cargo planes on any of its international routes, but it has joint freight aircraft services with British Airways and Lufthansa three times a week.<sup>91</sup> In 1990 SAA launched a campaign to promote the airfreight of export cargo. However due to oil price hikes and resultant tariff increases, flights have been reduced.

Whilst SAA is 98% self-sufficient in maintenance, it also services aircraft belonging to almost all southern African countries. Zambia and Zimbabwe use SAA's services only occasionally, while Mozambique has used SAA to do all its aircraft maintenance since 1973. Gert van der Veer (head of SAA since 1983) stated in 1989 :- "We are happy to assist the airlines of our neighbouring countries with equipment, maintenance and manpower because if we increase their capacities we increase the market."<sup>92</sup> Maintenance services are also

provided for all European airlines, both at Jan Smuts (where 3 500 maintenance staff are located) and at Nairobi and Mauritius.

### 3. Internal movement of imports and exports

In 1990 about 40% of all imported cargo was moved internally by rail, while 80% of all export cargo moved by rail.<sup>93</sup>

### TRADE AND THE SOUTHERN AFRICAN REGION

Since 1980 five of the six landlocked states of SADCC have, at some time, been dependent on South African ports for handling over 90% of their exports - the exception being Zambia which has been relatively successful in rerouting some of its exports to avoid South African transit facilities. However this has not always been the case. In the early 1970s 80% of Zimbabwean cargo went through Mozambique, but by 1980, Zimbabwe's year of independence, 75% of its port cargo went through South Africa. In 1982 Zimbabwe managed to reorientate up to 53% of its goods to go through the Mozambique ports of Beira and Maputo, but by 1983 this had reverted to 90% of exports and 75% of imports through South African ports. Prior to 1980 the ports of Nacala and Beira handled all Malawi's cargo. By 1987 over 90% of Malawi's freight traffic used South African ports. Not only has this increased the distance fourfold, but it has been estimated that using South African routes added more than £83.3m to the costs of Malawi's export trade in 1985. This was almost the equivalent of Malawi's budget deficit in the same year. As a result Malawi has lost the competitive edge for many of its exports. South Africa too used to use the port of Maputo extensively. In 1977, 4 248 200 tons of South African traffic (imports and exports) went through the port of Maputo, but by 1983 this had fallen to 110 000 tons. Prior to Mocambique independence, in 1974, Maputo handled a total of 5 million tons of goods. By 1988 this had reduced to 1m tons. Whilst Zambia no longer uses South Africa for its copper exports, by 1985 67% of all imports were handled by South African ports. Botswana's

international trade is almost totally dependent on South Africa - with 72% of its port cargo going through South Africa in 1981. Lesotho, being completely landlocked by South Africa, is 100% dependent on South African ports. After 1982 there was a substantial shift of non-mineral foreign trade from Swaziland away from Maputo to Natal ports. Between 1973 and 1975 Angolan ports handled an average of 1,6 Mt of goods per annum for Zambia and Zaire. By 1980 this had reduced to a mere 12 000 tons, all for Zaire.<sup>94</sup>

Barlow suggests that the dependency on South African ports and transport links within the region has been reinforced by the fact that "many of the shipping and transport decisions taken by purchasing managers, export sales managers and traders are still coloured with a degree of prejudice about the reality of how ports such as Dar es Salaam, Nacala and Beira are actually performing, and the quality of the service offered by road hauliers and rail operators offered outside of South Africa."<sup>95</sup>

The main road transit route from South Africa to Zambia, Malawi and Zaire is via Botswana. The route runs from Zeerust through Botswana, across the Zambesi via the Kazungula ferry into Zambia and on to Zaire or Malawi. The damage inflicted on Botswana's roads as a result of the traffic of heavy vehicles creates a net cost for the country.<sup>96</sup> This has implications for regional administrative arrangements, to be explored in detail below. No figures were available at the time of writing reflecting the total goods moved by road through Southern Africa. Individual examples of companies operating give something of a picture of the movements and the difficulties attached thereto. For example, Geoffs Transport is the only South African owned trucking firm to have offices in Maputo. Since 1986 the company has been operating five Leyland roadtrains and an armour plated truck tractor. The company carries goods from Johannesburg to Maputo via Swaziland, and then internally within Mocambique. Goods carried include food aid, sugar, maize, potatoes, machinery,

spare parts, and miners' personal goods.

Negotiations concerning the cost and administration of cross-border road freight transport were started in 1970 between South Africa, Botswana, Lesotho, and Swaziland. The negotiations took nineteen years to complete, and the agreement reached was only implemented in 1990. Prior to the agreement, South Africa dominated all cross-border transport. Swaziland, for example, could only transport goods to railheads on the South African border, at which point it had to give over the transportation to the South African railways, or to South African trucking companies. In terms of the agreement reached a quota system now operates, whereby the traffic is shared. South Africa holds half the value of cross-border transport permits while her neighbours hold the other half. In terms of the agreement countries now reimburse one another with revenues to repair roads.<sup>97</sup>

South Africa's neighbouring states have the following road networks :-

Botswana (1986) 13 500km, 15,1% of which is paved
Lesotho (1985) 4 250 km, 11,5% of which is paved
Swziland (1982) 2 723 km, 19% of which is paved
Zimbabwe (1985) 77 927 km, 17% of which is paved
Namibia (1982) 40 806,10% of which is paved

*Table Eight : Road networks in neighbouring states<sup>98</sup>*

## CHAPTER SIX

### ACCIDENTS AND SAFETY

#### 1. ROAD ACCIDENTS - THEIR COST

In 1988 road accidents cost South Africa five and a half billion rands. This calculation includes damage to property, loss of earnings, and cost of police and hospital services. In 1980 the figure was less than one fifth of this - at R966m.<sup>99</sup>

Annual road deaths per 100 000 population in South Africa are 30,5 compared to 19,1 in the US and 10,3 in the UK. Deaths per 10 000 vehicles are 24,8 compared to 2,7 and 3,2 in the US and UK respectively.<sup>100</sup> At the same time South Africa only has 123 vehicles per 1000 population compared to 711 and 322 in the US and UK respectively. Whilst the road fatality rate has declined by 2% over the last decade<sup>101</sup>, the figures remain staggering.

In 1988 a total of 702 681 vehicles were involved in accidents of one kind or another. More than half of these were private cars (480 065). 47 952 were minibuses; 91 201 were light commercial vehicles (less than 5000kg); 39 149 were heavy commercial vehicles; 1 965 were truck tractor semi trailer units; 13 687 were passenger buses; 23 903 were motor cycles and bicycles; while 4 768 remain unspecified.<sup>102</sup>

The Daily News has pointed out that a significant proportion of heavy vehicle accidents are brake related. There are three views about how this should be redressed. The first view is that compulsory brake retarders should be fitted onto the truck transmissions. The second view is that the problem should be approached through improved training of drivers. It is argued that if a driver is heavy footed and does not use the engine for slowing down, the braking system can overheat and stop working, resulting in an accident. The third option is that of fitting engine braking systems. The Daily News points out that this is a limited option in that presently all manufacturers have to use ADE diesel engines according to government regulation, and these



engines cannot be fitted with engine braking systems.<sup>103</sup>

Overloading clearly compounds braking and related problems. On average 16% of all rear axle heavy vehicles are loaded beyond the legal limit. Not only does this contribute to the high rate of accidents due to a loss of control of the vehicle, but such overloading also causes damage to road surfaces costing an additional R120m per annum at 1987 prices.<sup>104</sup> Damaged roads not only cost money to repair, but they in turn contribute to more accidents.

A survey conducted by Tolcon on the N1 and N3 revealed the following causes of accidents (all vehicles) :-

25% due to loss of control of the vehicle
20% due to driver negligence
13,7% due to driver fatigue
3,7% as a result of hitting a stationery vehicle
2% alcohol related
22,3% as a result of falling asleep at the wheel

Table Nine : Causes of accidents<sup>105</sup>

No accident statistics are known to the author which refer specifically to commercial vehicle drivers in South Africa. However, in an international survey of studies on accidents amongst professional truck and bus drivers, F van Ouwerkerk<sup>106</sup> found that driving between 24:00 and 8:00 is particularly hazardous, creating twice the possibility of being involved in an accident due to falling asleep at the wheel as between 8:00 and 24:00. More alarming still, is the fact that the chances of a fatigue induced accident between the hours of 3:00 and 6:00 are 71 times higher than during the period 18:00 to 21:00. van Ouwerkerk quotes a study by Mackie and Miller (1978) which found

that a driver was more likely to be involved in an accident after 5 hours of driving than after less than 5 hours. A further study quoted by van Ouwerkerk and conducted by Hamelin (1981) found that the accident risk was 2.5 times higher when a driver worked over 13 hours than when he worked less than 10 hours. Other studies suggest that short rest periods (less than 6.5 hours) are related to falling asleep while driving.

Given that road accidents cost in more ways than one, any transport policy must have safety high on the list of priorities. A local study on the relationship between hours of work, fatigue, and accidents amongst professional drivers would be extremely useful in exploring ways of reducing accidents amongst this group of drivers. However, as pointed out above, the majority of accidents involve private vehicles and minibuses, and the major cause of accidents is "loss of control of the vehicle". Therefore these groups of drivers need to be prioritised, and "loss of control" as a reason for accidents needs further analysis.

## 2. RAILWAYS

Statistics indicating the causes for accidents involving the railways are not known. However, Spoornet in 1989/90 paid out R1 027 482 in accident claims relating to the death or injury of persons in respect of death or injury to passengers in train accidents and on Spoornet property (an increase of 52,2% on the previous year); R239 267 for claims relating to the death of livestock on railway lines (an increase of 38,7% on the previous year); and R540 899 for claims relating to damage by fire to properties (an increase of 71,2% on the previous year).<sup>107</sup> The figures show a cost to Spoornet of over one and a half million rand for 1989/90. It is not clear why there was such a sharp increase in claims during the above period. Assuming that there was a concomitant increase in incidents, it is possible that the reduction in staff overall combined with the abolition of the railways police as a preventive force in 1989 was to blame.

### 3. AIRWAYS

The total number of aircraft accidents in 1987 was 114, compared to 158 and 103 in 1985 and 1986 respectively. Ten of these in 1987 were fatal accidents, resulting in 173 deaths. In 1985 and 1986 there were 12 and 5 deaths respectively.<sup>108</sup> No statistics are known to the author on the reasons for such accidents, or how the figures compare with other countries. It is generally accepted that South Africa's national commercial airline, SAA, has a healthy safety record.

## CHAPTER SEVEN

### SUMMARY

In Part Two it has been found that transport's contribution to the South African economy **may** be of significance, but that the data require further analysis. Employment in the sector has declined dramatically. In a context where both job creation and economic efficiency are of great importance to the future economic growth and stability of the economy, this tension between the two needs further exploration. It will have to be investigated whether there are any opportunities for large-scale job creation in the sector.

South Africa continues to rely fairly heavily on the rail network for transportation of goods, although this is declining. Further analysis of the modal split and what future trends may be expected is required.

With the growth of "logistics", and due to other reasons cited, the cost of transport has increased dramatically over the past ten years. Keeping running and replacement costs down without unduly curbing wages and working conditions, is imperative in the transport industry.

With regard to road infrastructure, there is a massive backlog in rural road building. Also, road planning tends to be fragmented, and funding erratic. Transport policy needs to address these problems.

Important changes in railway technology have taken place, as well as a major shift towards smaller-scale containerisation and packaging. The prohibitive cost of introducing dedicated long distance passenger railway lines has precluded the option of fast passenger services. Other Southern African states are heavily dependent on South Africa for rolling stock, and the poor state of railway operations in neighbouring states further enhances their dependence on the South African railway system.

South Africa's relatively developed pipeline infrastructure is an important asset, as is South Africa's fleet of aircraft.

South African shipowners are tending not to get ships built in South Africa because of the relatively high cost of doing so. This requires further investigation and comparison with shipbuilding costs elsewhere in the world. Further heavy expenditure is required in the major ports to improve handling speeds and to cope with bigger, bulkier cargoes. South Africa's relative advancement in the field of containerisation and container manufacture puts it at an advantage. The poor conditions of non South African ports in the Southern African region, and the dependence this has created on South Africa's ports is a matter for regional concern however. Future transport policy would have to look at ways of redressing this dependence.

In so far as trade is concerned, South Africa is particularly dependent on movements by sea of both imports and exports. It has been noted that the system of rate setting in both the tramp and liner trades creates cost problems for South African importers and exporters. Expansion plans for air freight have been shelved due to the high cost of fuel.

Finally, the high cost of accidents (in road transport in particular) to the industry and to the economy as a whole is something to be considered very seriously. Transport policy needs to address a means of reducing the accident rate as a matter of urgency.

## Endnotes to Part Two

1. Leinbach Thomas R and Sien Chia Lin (1989) pp 20
2. *Momentum* Summer 90/91 pp 15
3. Cited in *Transport Statistics* 1989 pp 27  
The GDP is the total of all final goods and services produced within South Africa during the calendar year ie the sum of all products available for consumption or for investment
4. *Momentum* Summer 1990/91 pp 15
5. *Momentum* Summer 90/91 pp 17
6. Leinbach Thomas R and Sien Chia Lin (1989) pp 22  
The particularly high percentage cited for Singapore is in part explained Singapore's enormous investment in its national airline (The revenue from the airline alone in 1983 accounted for 3,5% of GNP. pp 183)
7. *Transport Statistics* 1989
8. *Leadership* 1990 pp 2
9. *Business Day* Corporate Survey Nov 8 1991 pp 7
10. *Leadership* 1990 pp 2
11. *Transport Statistics* pp 29  
It must be noted that these figures include only persons employed by SATS, passenger road transport (private and municipal) and private goods road transport operators transporting for reward. Persons employed in transport related activities in other sectors are not included.
12. Quarterly Bulletin of Statistics, CSS, 1990
13. Quarterly Bulletin of Statistics, CSS, June 1991
14. South African Statistics, CSS, 1990
15. *Transport Statistics* pp 29
16. Research Unit for Transport Economic and Physical Distribution Studies, RAU  
It should be noted that tonnage figures for private carriers are not necessarily that accurate. Napto, the organisation representing private carriers, does not report figures, whilst Transnet and the Road Freight Association, representing private carriers, do report to the Central Statistical Service.
17. *Transport Statistics* pp 42

18. *Transport Statistics* pp 62
19. *Transport Statistics* 1989, pp 62
20. *Transport Statistics* 1989 pp 42
21. van Zyl N J W pp 2
22. *Business Day* Corporate Survey Nov 8 1991 pp 7
23. *Transport Statistics* pp 26
24. Ian Moss (chairperson of RFA) quoted in *Business Day*  
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25. Dehlen G L 1989 a pp 18
26. *Freight World* Sept 1989
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28. Moss pp 16
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31. *Transport Statistics* pp 37
32. *Transport Statistics* 1989 pp 75
33. Dehlen G L 1989 (a) pp 10
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37. Dehlen G L 1989 (a) pp 8
38. Croesser G P August 1990
39. *Transport Statistics* 1989 pp 36
40. Mainwaring P 1990
41. Moss 1990 pp 12
42. Croesser G P 1990
43. Eccles J H 1990
44. Myburgh P A, Servas VP and Miller P K 1990 pp 5
45. *Leadership*



46. SATS Annual Report 1989/90 pp 12
47. SATS Report 1989/90 pp 60
48. *Leadership* 1990 pp 11
49. *Leadership* pp 12
50. *Business Day* 29.1.90
51. *Star* 23.8.89
52. *Transport Statistics* pp 41
53. Dickson L R 1989
54. Heydenrych J A and Kennedy TL 1983
55. Dickson L R 1989
56. *Leadership* 1989/90 pp 11
57. SATS Annual Report 1989/90
58. Gibb R A pp 28
59. Maasdorp G 1990 (a) pp 14
60. Gibb R A 1991  
*Business Day* 29.9.89  
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61. *Leadership* pp 27
62. *Transport Statistics* 1989 pp 50
63. *Leadership* 1990
64. *Transport Statistics* 1989 pp 51
65. *Transport Statistics* 1989 pp 47
66. *Leadership* 1990
67. Maasdorp G 1988 pp 8
68. *Business Day* 13.10.89
69. *Business Day* 24.1.91
70. *Financial Mail Survey* Nov 1990 pp 16
71. SATS Annual Report 1989/90
72. *Leadership* pp 16



73. *Business Day* 13.10.89
74. EROSA document pp 6
75. Portnet chief marketing manager, Neil Oosthuizen, quoted in the *Financial Mail Survey* Nov 1990
76. *Business Day* 13.10.89
77. Yeats A J pp 1
78. Yeats A J pp 117
79. Yeats A J pp 15
80. Yeats A J pp 139
81. Yeats A J pp 140
82. Barlow S P 1991 pp 5
83. Barlow S P pp18
84. *Business Day* 29.1.90  
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85. Barlow S P pp 20
86. Barlow S P pp 20
87. *Leadership* 1990
88. *Financial Mail Survey* Nov 1990 pp 21
89. *Transport Statistics* pp 49
90. *Business Day* 26.9.89
91. *Financial Mail Survey* 1990 pp 22
92. *Business Day* 26.9.89
93. *Financial Mail Supplement* Nov 1990 pp 19
94. Gibb R A 1991 pp 28 - 31  
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97. *Business Day* 20.9.89
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102. *Transport Statistics* pp 68
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## PART THREE : THE LEGAL AND ADMINISTRATIVE FRAMEWORK OF FREIGHT TRANSPORT

### CHAPTER EIGHT

#### HISTORY OF TRANSPORT ADMINISTRATION<sup>1</sup>

The history of roads and railways and the administration of transport matters is reflective of the history of South Africa. Prior to Union in 1910 there was no co-ordinated policy. Customs agreements alone kept the transport operations of the Boer Republics of Transvaal and Orange Free State, and the colonies of the Cape and Natal related.

#### Roads (Pre Union)

Until 1806 the construction of roads in the Cape was completely ad hoc. Under the second British occupation however, the military authorities began a systematic road construction programme. In 1826 provision for tolls was made, and in 1843 road construction was taken over by the colonial authorities. A Central Road Board was established for the express purpose of planning roads to facilitate the speedier distribution of agricultural produce. By 1910 the Cape had integrated road construction and maintenance into the state structures and had developed policies. By contrast, road planning and development in Natal was retarded by a lack of finance and the rugged terrain. In the Transvaal and Orange Free State the development of roads was completely ad hoc. It was only in the 1870's that the Boer republics became involved in the construction of roads in any substantial way.

#### Rail (Pre Union)

The first railways in the region were built and operated by the private sector, initially to serve the white settlers and agriculture in the two colonies. However the respective colonial administrations soon took over their operations, and by the late 1880s the railways had expanded substantially. By 1885 the Cape had 1599 miles of track. The Orange Free State assumed ownership of its first railway in 1897, having permitted the Cape to

operate a line through the OFS for the previous seven years. In the Transvaal the discovery of gold in 1884 boosted the building of railways, and by 1895 three routes to the coast had been built (to Delagoa Bay, Natal, and the Cape). In Natal the building of a railway in 1899 facilitated the opening up of the coal fields.

#### Union Administration

After Union, a unified national Railways Administration was established. The Railways Administration founded a road motor transport operation as early as 1912 to link the outlying areas to the rail network. The road section of the railways continues to exist today. The development of the internal combustion engine during the First World War led to the emergence of road transport as a serious challenge to the railways. As a result of agitation by the Railways Administration in 1925, the Road Motor Competition Commission was appointed in 1929. This Commission (the first in a long line of transport related commissions in South Africa) recommended the regulation of public road transportation but against the establishment of any one road transport monopoly. The Commission's recommendations were enacted in the Motor Carrier Transportation Act in 1930, which Act remained in force until 1977, and whose principles remained enshrined in legislation until 1989.

#### Legislative History

Successive legislation was designed around a policy of controlled competition as opposed to free competition between modes of transport (in particular between rail and road) and within road transport as a mode. Legislation determined the extent of competition and the number of competing suppliers to be regulated. Boards decided whether to allow a road haulier to compete with the South African Railways and Harbours (later SATS and then Spoornet). Once permission was granted an operator could only operate in terms of a permit, determining routes. The rationale for the policy was to protect SATS and its tariff structure. Amongst the principles behind the tariff policy were that the socioeconomic needs of the country should be taken into

account, making way for cross-subsidisation between the different sections of SATS eg the airways subsidising the railways, or passenger services being subsidised by rail freight, or high value goods subsidising low value goods. Tariffs were differentiated according to what the traffic could bear, not according to the cost of the service provided. The second principle resulted in the development of fifteen tariff classes. As a rule high bulk/low value goods were given a low tariff rating, and low bulk/high value goods were given a high rating. Given that the high rated goods tend to be those very suited to road transport, a high degree of competition was inevitable. To supplement the deficits incurred in fulfilling developmental obligations by transporting mineral ores and agricultural produce at a low tariff, the government sought to keep up the volumes of high value goods carried by SATS through regulation. The permit system was also designed to balance the infrastructural inequalities resulting from the fact that the railways are responsible for full infrastructure maintenance costs, whereas road users are not responsible for the full cost of road infrastructure. The permit system was vehicle based : a permit related to a specific vehicle operating for specified purposes within a prescribed radius and along predetermined routes. The substitution of one vehicle by another was rigidly controlled by the Act. Permits became absolutely central to any road transport undertaking. Given that the Act made provision for an operator to apply for a transfer of the permit held by another operator, permits acquired immense commercial value (sometimes as much as R100 000). Three categories of permit exist:- public, private, and temporary. Local Boards consisting of a chair plus two others determine whether to issue a permit, what kind of permit to issue, and further details concerning jurisdiction, goods to be carried etc. In 1983 there were 43 488 public permits issued, 7 016 private, and 79 553 temporary. Temporary permits were more often than not issued after a board had granted a permit but prior to the outcome of an appeal by an objector. SATS, for example, objected to 30% of all applications in 1981/2.

The Boards referred to above were co-ordinated initially by the Central Road Transportation Board which doubled as an appellate tribunal. In 1948 the Central Board was abolished in terms of the Transport (Co-ordination) Act, and the National Transport Commission was established in its place. The Transport Commission took over the functions of the National Road Board and the Civil Aviation Council as well, making it a body responsible for all modes of transport.

The Motor Carrier Transportation Act (amended from time to time) remained in force until 1977 when it was replaced by the Road Transportation Act. This was a refinement of the old statute with some significant changes. Most importantly it recommended the gradual deregulation of freight transport, and introduced a number of important exemptions. It permitted private operators (own account) to carry goods of less than 1000kg without a permit. It also permitted the carrying of own account goods of unlimited weight within a radius of 80km without a permit. In addition it made provision for certain goods to be completely exempted, and for the total exemption of goods being carried in the course of business. The conveyance of unprocessed farm products and requisites in a vehicle owned by the producer was completely exempted. By 1984 the various exemptions meant that only between 15% and 20% of transportation was actually controlled by the permit system. In December 1987 the exempted areas were extended to radii of between 150km and 450km. Permits could also now be issued to apply to all classes of goods as opposed to only specified commodities. Whilst the system was controlling less and less traffic, by 1989 it was costing at least R30m annually to administer.<sup>2</sup> In addition to the administrative costs to the state, there have always been the legal costs incurred by operators in applying for permits and lodging or fighting objections.

In 1987 the National Transport Policy Steering Committee (NTPS) recommended the consolidation of existing transport-related legislation into four laws. The White Paper accepted the

recommendations and proposed consolidation into the Road Traffic Act<sup>3</sup>, the South African Transport Services Act, the National Roads Act, and the Transport Act<sup>4</sup>. The Road Traffic Act passed in 1989 brought about a major change in the principle of regulation of transport. The Road Transport Quality System (RTQS) was included for the purposes of establishing standards of vehicle and driver fitness, determining appropriate operating limits, and providing a framework for the effective enforcement of standards and limits. Under the new system all transport operators except subsidised bus services, will be open to free competition.

## CHAPTER NINE

### THE PRESENT ADMINISTRATIVE FRAMEWORK

The Minister responsible for all transport is the Minister of Transport Affairs. The Minister reports to parliament and heads the Department of Transport. The Minister also heads Transnet together with a Board of three commissioners. The Department of Transport administers the four transport Acts - the Road Traffic Act, the National Roads Act, the Urban Transport Act, and the Transport Act. In terms of the Urban Transport Act, it is responsible for the administration of subsidies to both the rail commuter services and bus services. The Department also issues permits to road freight operators registered in other countries.

Currently Transnet has business agreements with seven of the nine SADCC countries for handling exports destined for foreign markets. The co-ordination of Southern African rail freight services is handled directly by Transnet through the Committee on Conditions of Carriage for International Traffic, established in 1983. This committee involves all countries in the region, including Zaire, Tanzania and Angola. It is a technical committee meeting twice a year, which looks at the compatibility of the various rail systems. The various railway authority chiefs meet once a year at a General Managers Conference to discuss recommendations to the respective governments. According to a report in the Financial Mail Survey on Transnet<sup>5</sup>, at a meeting of general managers in 1990 Transnet representatives recommended the creation of a joint venture marketing organisation or company to handle all international marketing issues. There are no similar regional organisations or committees dealing with road freight or roads.

A Transport Tribunal exists to hear disputes in the transport sector. Such disputes largely relate to the permit system (so long as it continues to exist).

The Transport Advisory Council, appointed by the Minister of



Transport, exists to consult with and make recommendations to the Minister, especially in relation to the implementation of the regulations in terms of the four transport Acts. (See Appendix I for more details.)

Various other statutory Boards and Committees exist to administer and co-ordinate the transport system. These include the National Roads Board, the National Energy Council, the Committee of State Road Authorities, the Committee of Urban Transport Authorities, the Parliamentary Standing Committee on Transport, the Metropolitan Transport Advisory Board, various Training Boards, and so on. (See appendix II for more details.)

#### Administration of Licences and Fuel Tax

The various provincial administrations presently administer motor vehicle licences. Funds collected are not allocated specifically to roads, but go into the general treasury. Likewise, monies collected through the fuel tax (27% on retail price in 1990) are directed straight to the general revenue fund. Prior to 1988 there existed in South Africa a dedicated road fund and dedicated fuel levies. In 1989 fuel and related taxes contributed R5,5bn to the Treasury, whereas less than R2.5bn was spent on the road network nationally.<sup>6</sup> Whilst the National Road Fund continues to exist as the body administering the funding of roads, it is funded directly by the Treasury. The Department of Transport currently favours the reintroduction of a dedicated fuel tax, as do Sacob and the Afrikaanse Handels Instituut (AHI). The Finance Department has opposed such a move, however.

#### The new Road Transport Quality System (RTQS)<sup>7</sup>

Interim regulations in terms of the Road Traffic Act were gazetted in April 1989 and partially implemented in May 1990. Until the provisions are fully implemented (expected in 1992), the permit system in terms of the Road Transportation Act of 1977 will continue to exist.

The RTQS will be applied on the basis of vehicle type, not on the

basis of use. It will apply to all vehicles with a gross mass of over 3500kg. It will also apply to all passenger vehicles designed for the conveyance of twelve persons or more (including the driver) and being used for hire and reward. Unlike the present permit system which excludes school buses, farming vehicles on public roads, Transnet vehicles, and all state owned vehicles, these vehicles will all be covered by RTQS. The only possible exceptions are vehicles owned by the South African Police and the South African Defence Force (yet to be determined by the regulations at the time of writing). The three key areas of regulation will be vehicle fitness, driver fitness, and operator fitness.

#### 1. Vehicle Fitness

In terms of the "vehicle fitness" provisions of the RTQS system, all vehicle testing stations will be graded and standardised, and examiners will likewise be graded. The six monthly Certificate of Roadworthiness for commercial vehicles will be replaced by an annual roadworthy certificate. Any transport operator who has a workshop and meets the required standards may register as an examiner and as a testing station for the issuing of roadworthy certificates. Inspectors will be appointed by the Department of Transport. Most importantly, RTQS makes provision for a systematic enforcement programme with regard to loads and vehicle dimensions. A total of 196 weighbridges nationally are due to be constructed - with one every 50km on the national roads, and one for every magisterial district. In addition thirty screening devices to check load content are due to be installed.

A number of changes have been proposed to the Road Traffic Act which relate to the area of vehicle overloading. These changes have yet to be approved by parliament, but are likely to be passed in the near future. They include an amendment which will provide the courts with the power to impose forfeiture to the state of the vehicle and/or its load on conviction of an overloading offence, and also an increase in the maximum fine for overloading from R8 000 to R25 000.

An early estimate of the NTPS was that the benefit from reducing overloading would be at least R50m per annum saved on road maintenance. Maasdorp<sup>8</sup> estimated that at 1987 prices overloading caused R120m damage to roads per annum, so it is possible that more than the NTPS estimate could be saved.

## 2. Driver Fitness

In terms of the driver fitness provisions, both licence testing centres and licence examiners will be registered and licenced; driver tests will be standardised nationally; and the professional driver permit (commonly known as the PDP) will be extended to apply to all drivers of vehicles over 3500kg (freight as well as passenger) and renamed the PrDP. The PDP previously only applied to drivers of passengers. The new PrDP will be issued every twenty four months (as opposed to every 12 months for the PDP) and a central register will be kept of all professional drivers. All professional drivers will be obliged to carry a "smart-card" on which all licence related details (including prosecutions for driving offences) will be recorded. A system of points will apply, whereby the PrDP may be withdrawn on accumulation of a specified number of points. Related to driver fitness will be the enforcement of strict limits to driving hours. To date driving hours have only been restricted in terms of legislation relating to conditions of employment (the Wage Determination covering goods vehicle drivers nationally, and the Industrial Council Agreement covering drivers in the Transvaal). In terms of the new regulations, no professional driver may drive continuously for more than five hours, and the maximum driving hours in every twenty four hours is fourteen. A rest of at least thirty minutes must be taken within every five and a half hours. Dual drivers may not alternate driving for a period of longer than thirty hours, and they must be permitted to rest for at least ten hours after twenty hours shared driving. Where the driving period exceeds fifteen hours, adequate sleeping accommodation must be provided. Whereas in terms of the various labour relations provisions an employer is held liable if a driver exceeds the hours of work provided for, in terms of the

RTQS system, the driver himself will be liable unless he can prove that his employer forced him to drive over the limit. Traffic police will have the authority to check driving hours, whereas under the present system only Department of Manpower or Industrial Council inspectors have the powers to do so. Given that many drivers now rely on excessive overtime (often beyond the legal limit) to make up their wage packet, and that most drivers are not paid during their rest periods taken on the road, these restrictions are likely to be negatively received by drivers. The restrictions will produce pressures for increasing the basic wage, while at the same time the overall process of deregulation will be producing pressures to keep wages down. A period of intense struggle over drivers' wages can therefore be expected.

The regulation of driver hours has called for the installation of recording devices in all heavy vehicles. There are roughly 400 000 such vehicles, 180 000 of which already had tachographs or electronic devices fitted by May 1989.<sup>9</sup> It is highly likely that vehicles operating within a limited radius will be excluded from the provision, as long driving periods are less of a problem in the short haul business. At the time of writing the exclusions within the regulations had not yet been determined.

Every weighbridge will combine as a checkpoint for driver licences. The checkpoints will be linked up with a central computer register set up the CSIR and already holding the particulars of millions of drivers in anticipation of the introduction of the PrDP. The necessary computer hardware and networks for this National Traffic Information System (Natis) were expected to be in place by the end of 1991. In July 1989 it was estimated that the cost of implementing the planned weighbridges/checkpoints would be R46m.<sup>10</sup>

### 3. Operator Fitness

RTQS will require an operator identification card in every vehicle.

The RTQS was due to be fully in place in January 1990. Delays have been caused by delays in the construction of weighbridges; delays in setting up the necessary information data systems; objections on the part of operators to the operator fitness provisions; objections on the part of Sabta and other taxi owner associations to the system as a whole; and so on. At the time of writing the final implementation date had not yet been set.

The key to the effective implementation of the RTQS will be information and enforcement. Given the sophistication of the information technology available, if operators and licensing offices comply with the requirements to provide information, the question of information should not present problems. However with regard to enforcement, many problems are likely to ensue, as will be seen below. Should enforcement remain as ineffectual as it is at the moment, a free for all system is likely to develop which contains the disadvantages of deregulation without any counterbalancing provisions.

#### Police Enforcement

At any one given time there are fewer than 700 traffic officers patrolling South African roads. There is no national traffic police force. There is a total of only 7000 municipal and provincial traffic officers to police more than six million drivers. Furthermore, CSIR research in the early 1980s revealed that only 16% of collisions are investigated, and that one third of the three million drivers caught annually for offences evade their summonses and are untraceable.<sup>11</sup> At a meeting convened by a sub-committee of the Department of Transport in late 1989 to discuss the implementation of the new RTQS system, and attended by a representative of Transport and General Workers Union, the Natal traffic chief admitted that his traffic police operate in terms of an unwritten rule whereby they do not apprehend mini-bus drivers for fear of attack either by the drivers or their passengers. At least one in six drivers has a forged licence, suggesting that there are between 800 000 and 1,5m illegal drivers on the road.<sup>12</sup>

There is no apparent plan to expand the provincial and municipal traffic police forces. In its own terms then, traffic policing is inadequate, and the question that remains is how the authorities plan to implement the RTQS with already overstretched personnel. This in turn begs the question as to whether a greater degree of self regulation might not be desirable - both as a means of keeping down regulatory costs, and equally (if not more) importantly, as a means of introducing a more democratic and participatory form of regulation.

A proposed amendment to the Road Traffic Act makes provision for the establishment of a Road Traffic Enforcement Committee and the establishment of a National Policy on Road Traffic Law Enforcement.

#### Vehicle Dimensions

Vehicle dimensions are regulated in terms the Road Traffic Act. Regulated dimensions include height, width, and length of a vehicle, as well as axle configurations, total weight, and weight distribution. Calculations take into account the centre of gravity on any loaded vehicle.

In mid-1991, Regulation 354(b) was amended to permit an increase in the maximum overall height of a vehicle from 4,1m to 4,3m. There had been resistance to this amendment by road authorities on account of the limits on height imposed by many existing bridges in the country. In October 1991 Regulation 351(c) was amended to increase the maximum overall length of a vehicle from 17 metres to 18,5 metres. The wheelbase of the semi-trailer is still restricted to a maximum of 9,0 metres. This means that if the length of the semi-trailer is increased to the maximum (about 15,5m), the payload in kilograms will be reduced. The total cubic capacity will be increased but the average load per cubic metre will be reduced. Regulation 351(f) has also been amended to allow for a maximum length of 22m instead of 20m for "maxi-vehicle" combinations. The effect of this is to permit the carrying of three six metre containers by some interlinking

vehicles. The 22m vehicle can also accommodate 36 pallets - six more than the 20m rig. The average load per pallet, however, is 100kg lower.<sup>13</sup>

The implications of the most recent changes are threefold. Firstly, the opportunity for overloading by heavy duty vehicles has been increased. Productivity, however will inevitably be increased, even when the legal limits are adhered to. At the same time increased loading capacities of vehicles will have a long term effect on employment - with fewer drivers required to drive heavier and larger loads.

#### Roads and the "User Pays Argument"

As was argued above, one reason for transport regulation has historically been to redress the infrastructural inequalities which exist between rail and road. Under the RTQS, entry to the market by heavy vehicle operators will be unrestricted so long as they comply with the various "fitness" qualifications. Potentially this could result in a widening of the gap between the meeting of infrastructural costs of rail and road transport respectively. Road transport infrastructure can be paid for by a number of means, either on their own or in combination with one another. These include direct payment by users eg tolls; indirect payment by users eg fuel duty or licences; income generated indirectly from the facilities associated with the infrastructure; and the provision of subsidies by national or local government.

The White Paper was ambiguous in its approach to the above issue. Whilst it purported to address transport as a whole system, in fact it did not deal with the issue of road infrastructural funding. There appears to have been an ad hoc approach to the issue. The approach has been one of increased licence fees and the implementation of toll roads.

#### Toll Roads<sup>14</sup>

The introduction of toll roads predates the Road Traffic Act of

1989. An amendment to the National Roads Act in 1983 on the recommendation of a parliamentary sub committee into road funding, made way for the introduction of state tolls on existing national roads. In 1990 the then Minister of Transport, George Bartlett, in an address to the Road Freight Association stated : "The financing of roads through tolls is the User Pays system which also provides the opportunity for privatising the provision and maintenance of roads. This will ultimately lead to reduced government expenditure, lower taxation and a healthier free market type of economy."<sup>15</sup>

The first tolls were opened in Tsitsikama and Marianhill in 1984. In 1984 a consortium of contractors proposed to the government that the privatisation of toll roads be considered. In 1986 the government reached agreement with two consortiums (Tollway and Tolcon) conditional on the necessary legislative changes. In 1988 legislation concerning private toll roads went to parliament. The House of Assembly passed the legislation, but it was met with opposition in the House of Representatives and the House of Delegates. At the time of writing legislation had still not been passed for the full privatisation of toll roads. The arrangement at present is that the roads continue to be owned by the state, but are run by agents of the government. Tolcon<sup>16</sup> runs the Tugela (1988), Mooi River (1988), and Wilge (1990) toll roads, while Tollway<sup>17</sup> runs Gosforth Park (1989), Dalpark (1989) and Brakpan (1990). The two consortiums have agreements to run the respective projects for twenty five years, with the option of repurchasing the respective projects for a further twenty five years. If the legislation to privatise the roads fully is finally rejected, the companies will be compensated and the state will acquire the assets. The companies expect to run the roads at a loss for the first seven years, to make a small profit during the second seven years, and to make substantial profits during the third seven years.

Toll tariffs are determined as a portion of the transport cost saving made by using the toll road as compared with using the



best alternative route. State and private tolls are calculated in a similar way. On new roads the toll tariff may be up to 75% of the total benefit as specified in an agreement with the government. On existing roads the tariff may only be enough to cover the costs of maintenance and improvements. The distinction between the two has led to a number of challenges to the consortiums regarding their toll tariffs. In a number of cases the tariffs were set as if the road was built by the consortium, whereas it was in fact an already existing road. In these cases the company has been forced to reduce its tariffs. While the tariff formula is the same for private and state tolls, there is one major difference in objective. Private tolls have to have an acceptable rate of return on investments in addition to meeting the costs of servicing the construction loan, maintenance, and improvements.

In November 1991 South Africa's first electronic toll collection point went on line at the N3 Wilge Toll Plaza, with the aim of facilitating the traffic flow on the main Durban road. Passive transporter tags with identity codes are fixed inside the windshields of vehicles, and are interrogated by a radio antenna when the vehicle passes through the toll. The code consists of a Banking Information Number (BIN) and the vehicle classification, and the account of the fleet owner is automatically debited. The system, still at the experimental stages, is said to be one of the most sophisticated in the world.<sup>18</sup>

## CHAPTER TEN

### THE COMMERCIALISATION OF SATS AND ACCOMPANYING NEW STRUCTURES AND ADMINISTRATION

Historically the South African Railways and Harbours (later the South African Transport Services, SATS) was self financing, with the aid of the protective legislation described above. There was no direct funding from the Treasury. In order to balance the books of the corporation, a method of cross-subsidisation was adopted. In the 1980s however, unprecedented losses (largely as a result of the loss of traffic to road) necessitated direct subsidisation for the first time.

In 1989 the SATS Legal Succession to the South African Transport Services Act laid the basis for the financial separation of the various services offered by SATS. The Act established Transnet Limited and the South African Rail Commuter Corporation, both of which came into being on April 1st 1990. In terms of the new structure, the profitable services were to be operated by Transnet, with the state initially as the sole shareholder of the various companies established under its wing. The SA Rail Commuter Corporation was given the task of running the loss making commuter services under the control and with the approval of the Department of Transport. The Department of Transport was to administer continued direct subsidies to the Rail Commuter Corporation. The Rail Commuter Corporation in turn contracted Transnet to run the service, to avoid the necessity of fragmenting the commuter and non commuter rail staff. The SA Rail Commuter Corporation now owns all the assets of the suburban services, including lines, stations and rolling stock.

#### Five Autonomous Companies

Five autonomous public companies (presently wholly government owned) came into being under the auspices of Transnet in April 1990. These were Spoornet, Portnet, Autonet, Petronet, and the South African Airways. From April 1990 each respective company was obliged in terms of the Companies Act to subject itself to

private sector auditing and became liable for tax on its profits. Each company also became obliged to pay any dividends to its shareholders. Spoornet operates all train services including commuter services (on behalf of the SA Rail Commuter Corporation Ltd), whilst Petronet operates pipelines for the conveyance of crude oil and petroleum products. Autonet operates both passenger (scheduled) and freight (unscheduled) road transport services, whilst Portnet operates the harbours.

Additional business units have been established under Transnet. These include Land Survey Services; Stores; Infodata (responsible for the data network); Transtel (health services); Onboard Services (catering); Trax Laundries; Trax Catering; Horticulture (including conservation); and Transwerk (engineering, maintenance and construction equipment). Viamax Logistics is a further wholly owned subsidiary. Viamax, together with Promat, an internal service unit, is responsible for administering the flow of goods through Transnet's extensive property and warehouse facilities. Viamax intends working with the private sector in developing industry norms for material handling. The company will also be Transnet's vehicle for future export/import channels into Africa.<sup>19</sup>

With the establishment of autonomous companies went the scrapping of all forms of cross-subsidisation and the beginnings of a process of identifying under-performing assets within each of the companies.

#### Privatisation of Transnet

In early 1990 Marius de Waal, Chairman of Transnet, stated categorically that "the ultimate goal for Transnet is for it to be privatised."<sup>20</sup> However, only a few months later in the same year he was expressing a more moderate view. Interviewed by the Financial Mail<sup>21</sup> he described the three phases of the transformation of Transnet as being deregulation, commercialisation, and privatisation. He stated that after the first two steps "whether to take the final step and sell the government's stake in the enterprise to private investors is,

relatively speaking, immaterial. It becomes the prerogative of government to decide whether to sell off its shareholdings for a one-time cash benefit in order to fund definite projects for social upliftment and, therefore forfeit annual dividends; or rather retain the shareholding and use the dividend incomes as a continuous source for socio-economic programmes." He went on to state that it is "the duty of my board of directors and I to change Transnet into an undertaking which will please the general public, which will be the envy of the investors public, and one that will be a pleasure to work for and not neglect its social responsibility. Privatisation is not a goal in itself but could be a spin-off of good management." The significant change in tone came after a combination of strong statements made by the African National Congress in opposition to the privatisation of state assets and a campaign of protest conducted by Cosatu and its public sector affiliates in particular.

Chief Executive of Autonet, Gert Meintjies has also expressed an ambivalence about privatisation. Referring to the unprofitable services of Autonet he stated that "there is a difficulty in forcing buyers to continue with uneconomic services. Also the inevitability of a small number of competitors in the most lucrative aspects of road transport, and the size of the transport market may lend itself to monopolistic conditions and possible collusion."<sup>22</sup>

Whereas under the old structure of SATS, the administration of the harbours was centralised in the South African Harbours head office, under the new structure of Transnet authority has been vested in the individual harbour authorities. The idea, in line with recommendations made by Wim de Villiers (the Minister for Privatisation), has been to allow for differential rates and competition between harbours. Portnet has however opposed such undercutting of one port by another. Portnet head office continues therefore to set core rates, with small movements within set percentages of such rates permitted. Duke Davidson SATS CE for Harbours stated in December 1989<sup>23</sup> that it was the

intention of SATS that the ownership of the infrastructure of the harbours (quays, breakwaters, chains, roads, and transport facilities) should be retained by the port authority, while the superstructure would be owned by various companies - either Transnet owned or private, or a combination of the two. Whether the port authority is to be privatised as is the case in the UK, is to be decided by the Transnet Board. With regard to container and related services, the Executive Director of South African Association of Freight Forwarders (SAAFF), Alan Cowell, warned in 1989 that privatisation combined with unfettered deregulation would lead to a totally monopolistic situation in the harbours. He argued that the Competitions Board would have to play a significant role in the process if it were to proceed.<sup>24</sup>

While over 50% of tonnage through South African ports was handled by privately owned terminals such as Keeley Granite Terminal, Richards Bay Coal Terminal, and Rennie's Bulk Terminal in Durban by late 1989, this does not suggest the insignificant role of the currently Portnet owned facilities. For the privately owned terminals deal exclusively with high bulk cargo, and therefore account for the transfer of large masses but not such high values as continue to be transferred through the Portnet terminals.

With regard to the airports, the Department of Transport is currently conducting an investigation into the commercialisation of state airports. The investigation is due to be completed by April 1992. According to the Minister of Transport, Piet Welgemoed, the purpose of the investigation is to establish the most appropriate structure and regulatory framework within which state airports can be managed and operated "in an efficient and commercially viable manner".<sup>25</sup> A full review of international aviation policy is also taking place in the context of the increasing liberalisation of European skies. The European Commission has since 1987 been involved in a process of re-organising the EC's air transport market in the run-up to the single market. The final package of measures involving criteria for granting licences, rules giving carriers in the EC freedom

of access to routes within the EC, and fares, will come into force on 1 January 1993. Welgemoed has emphasised the need to respond appropriately to these European developments, and in such a way that foreign tourists and foreign exchange will be attracted. Domestic aviation policy is also undergoing rapid changes. In September 1991, Welgemoed and his colleague Dawie de Villiers, the Minister for Economic Coordination and Public Enterprises, announced an addendum to the government's Domestic Aviation Policy document of May 1990. The addendum stated inter alia, that SAA must operate autonomously and on a commercial basis; that cross-subsidisation between SAA and other business units of Transnet must be prevented; that the Competition Board must ensure that neither SAA nor any other airline is involved or will become involved in any restrictive practices; and that specific attention will be devoted to ensuring that domestic competitors have equal access to support services and facilities such as maintenance, training and computerised reservation systems<sup>26</sup>. It was in this context that the newly-established privately owned Flitestar was granted a licence to operate on domestic routes between the major centres in late 1991.

#### Transnet Pension Fund

In terms of the new arrangement the Transnet pension fund is now free to invest as it sees fit. It is no longer obliged to invest only in employee housing and in government stocks. However at the point of transfer to Transnet the fund was in a critical deficit of R17,2bn. It has been estimated that it will take the fund well into the next century to make up the deficit. Strategies that Transnet has employed to redress the deficit include increasing employer contributions from 9% to 12% of employees salaries, a plan to transfer portions of the group's profits into the fund, and investment in more profitable assets.<sup>27</sup>

## CHAPTER ELEVEN

### THE POTENTIAL IMPACT OF DEREGULATION OF THE TRUCKING INDUSTRY

Ian Moss, Chief Executive of the Public Carriers Association (later the Road Freight Association) stated in August 1989<sup>28</sup> that "the critical question to debate is whether the total elimination of trucking regulation would result in more and better public benefits than the current regulatory system has already produced....No two countries have the same type of public sector or regulatory systems. Deregulation and privatisation must be aimed at solving the particular problems of a country. Deregulation is not a single issue, but many issues tied together by two main concepts - productivity and safety, with productivity as primary." He went on to argue that the key factors in evaluating deregulation are whether prices drop (or at least increase at a lower rate); whether there is an increase in productivity; whether rates of return increase to at least the average of all companies; whether the consumer benefits; and other factors such as convenience, safety and reliability. Another three crucial factors need to be added - whether the wages and working conditions of workers in the industry improve (or at the very least are sustained); whether there is an adverse effect on the environment; and the impact deregulation has on the ownership structure of the industry.

The fact that the experience of deregulation in other countries has been very varied enhances the view that there is no uncomplicated cause-effect relationship between deregulation and factors such as productivity, monopolisation etc. Cooper<sup>29</sup> has described the effects of deregulation in Australia, the USA and the UK. Australia deregulated inter-state road transport in 1954 by removing licence and permit fees and ton-mile taxes. In 1965 a process of intra-state deregulation started. Regulation today largely takes the form of social regulation over hours of work and so on. The deregulatory measures resulted in a reduction of road freight rates by approximately a half in real terms, and also in the movement of some traffic away from rail. However,

some improvements in rail service and tariffs also resulted. Cooper argues that an increasing concentration of ownership resulted (with the number of dominant national hauliers decreasing from ten to four between the mid 1960s and the mid-1980s), and that specialisation has followed. He also argues that contrary to predictions, the rural areas have not suffered, and that there is no clear evidence of increased bankruptcies. There was no marked decrease in wages although, as a result of the suddenness of the deregulation of the 60s, a negative impact on health and safety was experienced by workers. The experience of the USA contrasts to that of Australia in a number of respects. Most significantly, as a result of the deregulation of inter state road transport in 1980 (through the removal of many of the powers of the Interstate Commerce Commission), wages have declined dramatically, and there has been a massive increase in the number of bankruptcies. Private hauliers have reduced their empty running time considerably by obtaining for-hire authority. There has been only a slight concentration of ownership (the top three companies continue to have less than 5% of the market share), and as with the Australian experience, the rural areas have not suffered any disadvantages. As in Australia, rates have declined significantly. The UK displays yet a further combination of effects. In 1968 the Transport Act fully deregulated all transport within the United Kingdom. New safety controls were introduced at the same time as all capacity restrictions were scrapped. Surprisingly, there was no significant fall in rates, and relative to other manual workers, road transport workers' wages did not decline in real terms. Deregulation had very little impact on the rail market, and did not result in an increase in business failures. Very little haulage work was taken up by own account operators, who continued to run empty much of the time. As in the case of Australia and the USA, there was no decline in services to rural areas. The worst scenario is clearly that of the US, where deregulation has brought with it a host of low-budget and self-employed drivers offering cheaper services on the basis of lower wages and longer hours. In addition to the effects of deregulation in the US



detailed by Cooper, the accident rate in the trucking industry has risen dramatically since the early 1980's (23.4% between 1983 and 1985). In nineteen states, drivers who hold just a general commercial licence can operate huge 18-wheel tractor rigs with no additional training or testing. Five other states require just a written exam, while the remaining 26 have a test. The lack of training and testing in so many of the states is reflected in accident statistics - with 85% of all truck drivers involved in accidents having had no professional training as commercial truck drivers whatsoever.<sup>30</sup>

Quite why deregulation of the trucking industry should have had such varied effects in different countries is not very clear from the literature surveyed. One can only assume that the timing, pace, the precise nature of the deregulatory measures, and what new measures were in put in place, resulted in different effects. What is clear however is that increased bankruptcies, a rapid decline in wages, and a reduction in rates are all distinct possibilities. The fact that the new RTQS system is being introduced in South Africa in a context where the old permit system is already in relative disuse, may alleviate some of the potential effects. In addition, the fact that the RTQS system involves fairly strict regulation of operator, driver, and vehicle fitness may also offset some of the potentially damaging effects. A key factor in sustaining wages and working conditions will obviously be the extent to which the trade unions in the trucking industry can hold onto their membership, and expand into the newly developing areas, including owner drivers and sub-contracting.

#### Potential shift from rail to road

It has been estimated by Kennedy<sup>31</sup> that the railways would lose about 5% of ton-kms of traffic to road transport if cost based rail and road rate structures were fully applied. However it is evident that a large proportion of the traffic likely to be lost would be high rated goods. Although on the face of it such high rated goods are more profitable to transport, there are many such

goods which are relatively unprofitable for the railways to transport on account of their low density and/or high handling costs.

The relatively small shift of traffic predicted as a result of the scrapping of the permit system is largely due to the fact that for all intents and purposes economic entry control is no longer a major stumbling block in any transport decision. Given that the list of goods exempted from permits is extensive, and that large areas are exempted (in particular in terms of the 300km radius dispensation included in 1987 amendments to the Road Transportation Act), over 80% of the road transport market has effectively been deregulated for some time.

#### Productivity - Road Freight

In 1988, of 1 486m km travelled by public carriers, 540m kms were travelled unladen.<sup>32</sup> Whether deregulation will in and of itself result in the greater productive use of vehicles is not yet clear. Theoretically it should make a difference, as hauliers will be free to fill their vehicles so long as they meet the requisite driver, vehicle, and owner fitness conditions.

#### Costing and "fair competition" between road and rail

For "fair competition" between road and rail to be anywhere near accomplished a number of preconditions would have to be met. Energy prices would have to be substantially similar. The railways would have to be relieved of the financial burden of providing social services. A source other than cross-subsidisation (eg direct state subsidies) would have to be found. The railways would have to be put on a similar footing as road carriers with regard to the cost of the provision of the infrastructure. Finally, railway tariffs would need to be aligned more with the cost of conveyance than the value of the service provided. However, as Thomson and Hunter have pointed out<sup>33</sup>, it is extremely difficult to align price with cost where railway services are concerned. This is particularly the case where low levels of throughput are concerned. The reason for this is that

it is difficult to allocate the cost of running a train between the units travelling within it (either passengers or goods). So whilst it may be possible to work out average rail costs per ton/km, aligning these with prices is a lot more difficult.

The de Villiers Commission of Enquiry argued that the running costs of freight trains were less than 2,5c per ton/km (excluding collection and offloading costs) compared to 11c per ton/km for a road truck. The Commission suggested that block-load trains have this competitive advantage for all journeys in excess of 20km, container trains for journeys in excess of 150km, and break-bulk trains for journeys of over 580km.<sup>34</sup>

A cost model developed in South Africa to assist users in deciding on the most cost efficient mode to be used was developed by the Transport Economics Group of the NITRR in 1988. The model was developed in an attempt to calculate total distribution costs from the users perspective - including the quantification of transit time and reliability. The two critical factors in determining cost for each mode were identified as commodity value and density. To determine total rail distribution cost, forty two unit cost coefficients were identified. Added to these were loading and unloading costs, transit time costs, warehousing costs, and loss and damage costs. To determine total road distribution costs twenty three coefficients were identified, to which performance characteristics of a road vehicle (purchase price, fuel consumption rate, tyre price etc) were added.

There are fundamental weaknesses in using the above type of cost model in making transport decisions. Such an approach is biased towards the short term and to that which can be priced. It also only looks at cost from the point of view of the user, and ignores the cost to society at large. For example, it is virtually impossible to derive monetary values for environmental factors. Keith Buchan goes so far as to say "As for the market reflecting the true costs of making any particular journey - there is simply no mechanism by which rail, air or road users pay

for the nuisance or damage their journey causes, or the damage that is caused by the provision of the roads, railways or airports that they use. One obvious example is the damage done by heavy lorries to underground services such as sewers, gas and water mains".<sup>35</sup> Buchan argues that there should be a move away from computer modelling, which he points out is "expensive, time consuming and often used to conceal judgemental processes from the public".<sup>36</sup>

C A Nash's arguments<sup>37</sup> support Buchan's view. Nash states that price mechanisms cannot be adequately adapted to reflect factors such as track costs, cost of congestion, and environmental effects. He argues that a wide variety of tools of planning, traffic management and administrative controls are needed to improve resource allocation in the transport sector. Nash makes a crucial point, in suggesting that any policy of unweighted transport market prices assumes an optimal distribution of income. "A changing modal split in transport raises distributional issues, requiring the tracing of the ultimate incidence of the costs of such policies, which may be far removed from the immediate transport user", Nash argues<sup>38</sup>. He goes further to assert that the cost pattern for transport infrastructure is such that comparisons of costs, revenues and taxes sheds no light on the issue of public versus private transport<sup>39</sup>. He concedes that there remains a role for economic analysis in transport decision making, but insists that all the effects of transport systems cannot sensibly be expressed in a single money measure.

Pricing policies therefore need to be subjected to a wide-ranging cost benefit analysis, looking not only at their effects on resource allocation, but also at effects on income distribution, feasibility, and cost of implementation. It is clearly not sufficient to leave modal decisions up to the user entirely. The process of decision making also requires democratisation. Room must be made within the decision making process for the activities of lobby groups eg on environmental matters.

## CHAPTER TWELVE

### SUMMARY

The rationalisation of transport legislation has clearly simplified the administration of the system. Numerous statutory councils, committees, and advisory bodies remain however. Historically, whilst employers have played a role in many of these institutions, organised labour has remained unrepresented. The possible advantages of participation in some of these structures will need to be considered by the transport trade unions, if they wish to have any influence on the formulation of transport policy.

The scrapping of the permit system for road freight, and the introduction of the RTQS system is likely to have an impact on the existing modal split between road and rail freight. It may also have an impact on freight rates, the rate of bankruptcies, and on wage rates. The stringency of the RTQS regulations, and the fact of relatively strong trade union organisation in the trucking industry will hopefully obviate these effects. The ineffectiveness of current law enforcement is of concern however.

The question of where fuel taxes should be directed (ie whether to the general treasury or to a dedicated fund) requires further investigation and debate. Likewise, the advantages and disadvantages of the privatisation of highways under the toll road system need further investigation. The extent to which such measures may lead to the increasing neglect of rural road needs, needs to be analysed.

The commercialisation of SATS and the dividing up of the group into five distinct companies may well lead to the operations becoming financially more accountable. However, given the already drastic cuts in the workforces of the five divisions, it is yet to be seen whether standards of efficiency are maintained. Also, in the context of already massive unemployment, the question needs to be asked as to whether further reductions in

the workforce will be wise for the economy as a whole. Increasing pressure to keep wages down is likely to be experienced in all five companies. Finally, although the government has suggested that its plan for the ultimate privatisation of the five companies have been shelved for the moment, there are strong indications that the process of privatisation will be sped up as the pace of negotiating a new constitution for the country increases. Those interested in long term transport policies will have to analyse seriously the potential impact of privatisation, and respond accordingly.

The impact of deregulation and privatisation on the choice of modes requires further consideration by policy makers and thinkers. The choice of mode cannot be left to the user simply on the basis of immediate cost comparisons. Policy has to take into account the longer term (and broader) social costs of any one transport policy decision. Centralised institutional structures with power and authority are a pre-requisite to effective long term transport policy planning and implementation. Such co-ordination needs to be accompanied by careful and detailed planning per area, and local institutional arrangements are critical in this process. Cosatu, the largest trade union federation in the country, has already voiced its vigorous opposition to the privatisation of the railways, on the grounds that it will inevitably lead to the system being driven by profit alone, to the detriment of the objective of providing a social and economic service. Likewise, Cosatu's railways affiliate, the South African Railways and Harbours Union, has expressed its opposition to privatisation.

### Endnotes to Part Three

1. Unless otherwise indicated, this section draws on Plasket C 1986
2. NTPS Recommendations pp 47
3. The Road Traffic Act consolidated the previously existing four provincial Road Traffic Ordinances, as well as making provision for RTQS
4. The laws consolidated by the Transport Act were :-  
Road Transportation Act 1977  
South African Shipping Board Act 1976  
Aviation Act 1962  
Merchant Shipping Act 1951  
Urban Transport Act 1977  
Transport Services for Coloured Persons Act 1974  
Black Transport Services Act 1957  
National Roads Act 1961  
Air Services Act 1949  
National Road Safety Act 1981  
Transport Co-ordination Act 1948
5. *Financial Mail Survey* Nov 1990
6. *Financial Mail* 10.9.90
7. Unless otherwise stated, this section draws on Mainwaring P and Hasluck J P
8. Maasdorp G 1988
9. *Business Day* 19.5.89
10. *Transporter* July 1989
11. *Sowetan* 23.11.90
12. *Sowetan* 23.11.90
13. *Focus* September 1991 pp 18-26
14. Unless otherwise stated, this section draws on Mainwaring P 1990
15. Bartlett G address to the RFA March 1990
16. Tolcon (Tollroad Concessions) is a consortium comprising Group 5, Murray and Roberts, Senbank, Grinaker and Sanlam

17. Tollway (Toll Highway Development Company) is a consortium comprising LTA, Concor, Basil Read, Grinaker, Finansbank, and Standard Merchant (Star 4.8.88)
18. *Focus* Dec 1991 pp 15
19. *Business Day* Corporate Survey Nov 8 1991 pp 14
20. *Leadership* 1990
21. *Financial Mail Transnet Survey* 1990 pp 10
22. *Leadership* 1990 pp 24
23. *Business Day* 8.12.89
24. *Business Day* 4.11.89
25. *South African Transport* Sept 1991, pp 20
26. *South African Transport* Sept 1991, pp 20
27. *Business Day* 28.1.92
28. Interview in *Focus* August 1989
29. Cooper J 1991
30. *ITF Inland Transport Bulletin* No 1, 1988 pp 10
31. Kennedy T L 1983
32. *Transport Statistics* 1989 pp 63
33. Thomson and Hunter 1973 pp 158-162
34. quoted by Dickson L R in Dehlen G L 1989 pp 34
35. Buchan K pp 16
36. Buchan K pp 4
37. Nash C A pp 10
38. Nash C A pp 12
39. Nash CA pp 19



## PART FOUR : ROAD FREIGHT

### CHAPTER THIRTEEN

#### ROAD TRANSPORT AND MANUFACTURING, AGRICULTURE, AND THE RETAIL INDUSTRY

As spelt out in the introduction to this study, transport is a necessary but not sufficient factor in economic development. Various economic activities (mining, manufacturing, agriculture, and commerce) generate a demand for transport. In turn the provision of transport (or non-provision as the case may be) will affect the nature and level of economic activity. Transport permits, rather than determines, economic development.

This chapter will concentrate on the rôle of road freight transport, and its relation to economic development. In particular it will look at possible technological and organisational changes within road freight transport which would enhance productivity generally.

The split between transport modes was analysed in Chapter Three. It is useful now to consider the types of freight carried by road in more detail. The total tonnage of freight carried in South Africa annually is in the region of 766 million tons, with 51,5% of this weight being agricultural produce.<sup>1</sup> In 1986 just over 131 million tons of the total tonnage was transported by rail.<sup>2</sup> The rest was carried by own account operators, public carriers, and by transport for hire in the following quantities:-

	OWN ACCOUNT	PUBLIC	HIRED
Agriculture	230 730 112	115 415 686	12 274 335
Mining	10 436 562	11 794 741	6 931 288
Manufacturing	52 726 804	59 778 307	1 029 243
Electricity	557 224	203	366
Construction	5 023 887	886 865	23 729
Commerce	66 754 256	32 181 410	759 153
Finance	84 190	49 008	34 363
Services	25 434 856	-	-
Total	391 718 893	220 106 220	21 052 477

Table Ten : Tonnage per sector per road freight mode 1986<sup>3</sup>

The data reveal that taken on weight alone, agricultural produce, manufactured goods, and goods conveyed for commercial trade purposes, dominate the road transport system.

The types of goods carried impacts on the services offered by public carriers. In 1986, 60% of public carriers operating trucks with a 5000kg or more capacity were involved in the short haul of general freight. 52% were involved in general freight long haul, 16% in furniture removal, 13% in specialist and bulk tanker transport, and 6% in truck hire. (Clearly some were involved in more than one transport activity.)

#### TRANSPORT AND AGRICULTURE

A comprehensive review of the relationship between transport and agricultural development in the South African context is outside the scope of this study. Such a study would be a necessary component of any detailed study of the possibilities for changes in South African agriculture - changes aimed both at redistribution of land and of improved productivity. However a

few comments are in order, given the fact that agricultural produce constitutes such a high percentage of tons of freight carried.

Where agriculture is concerned the influence of transport on the distribution of agricultural activities can be considerable. Not only this, but as the possibilities of expanding land use diminish and the need for more intensive cultivation grows, so transport requirements become more specific and specialised. It is no longer a question of simply getting fresh produce to the market. Increasingly at one end of the production process, fertilizers, pesticides, seeds and other inputs need to be transported. At the other end of the process, storage and processing are becoming increasingly important. This has altered the nature of the transport demand in the commercial agricultural sector.

Any study of the relationship between agriculture and transport in South Africa would have to consider the question of rural subsistence and small scale commercial agriculture. Such a study would have to consider not only the question of transport in relation to the distribution of agricultural produce and inputs, but also in relation to transport needs within the sector itself. "On farm" transport activities such as the movement of seeds and plants, the application of fertilizers and pesticides, and harvesting, can be as important as the "off-farm" transport activity of distribution. In South Africa the on-farm transportation of water for both domestic and agricultural use is particularly problematic. In the Transkei a study of three villages showed that the average household spent 187 minutes - more than three hours - every day fetching and carrying water. A further study of 19 villages in the Ciskei showed that the energy expended in the average walk to the homestead carrying a container of water (weighing 21 kg) was equivalent to that used by miners wielding a pick.<sup>4</sup> The manual transportation of wood fuel for domestic use in rural areas also consumes time and energy. Despite the fact that South Africa produces 60% of the

African continent's electricity, almost two thirds of the country's population has no access to that energy for their household requirements. In the rural areas the sight of elderly women carrying wood loads of 50 kg is common. A study in the grassland areas of Kwa Zulu revealed that the average distance walked in collecting one headload of wood was 8.3 km, and the average time taken in collecting the one load was 4.5 hours. Households required between two and three headloads per week<sup>5</sup>. The situation was found to be even worse in a study covering six widely separated rural areas in four different bantustans (Ciskei, Transkei, Lebowa and Gazankulu). Average distances walked, on the round trip, varied from 5.6 to 9.4 km and the average times to collect each load took from two and half to a little over six hours<sup>6</sup>. These figures are not very different to those produced by studies elsewhere in Africa. For example, in Tanzania it is estimated that rural women spend up to four hours every day carrying wood and water<sup>7</sup>. Every hour spent in hauling water and wood is time taken from agricultural work. Not only this, but the collecting of fire wood has serious ecological consequences. Each household uses between three and four tons of wood a year. Vegetation is being systematically annihilated, causing serious erosion and a shortage of stock feed. The provision and facilitation of on-farm transport therefore has to be accompanied by the delivery of water and energy.

Policies which address off-farm transport needs only will inevitably favour the existing commercial agricultural sector, who's on-farm transport activities (including access to water and energy) are already well developed. Income gaps in rural areas are likely to increase rather than decrease where emphasis is placed on off-farm transport alone. Most efforts at improving rural transport tend to be synonymous with road access by conventional motor vehicles. Leinbach and Sien point out that in order to redress the biases against the rural poor in developing countries, equipment must be designed, produced and distributed which is easy to use and maintain by low income people without sophisticated technological or organisational

skills. They suggest that a wide variety of vehicles must be encouraged, including pedal driven and simple motorised vehicles.<sup>8</sup> Given that a closer relationship appears to exist between personal mobility and per capita income than between freight movement and per capita income (see Introduction), consideration needs to be given to the development of vehicles which satisfy a combination of the need for personal mobility, on-farm activities, and to a limited extent off-farm activities. The ILO Employment Section has been involved in various projects to stimulate the development of such vehicles. In Tanzania wooden wheelbarrows for use by rural women were widely distributed. However they were taken over for use by men for construction work. In Thailand, single axle tractors have been developed for rural use, and adapted for use on construction sites. These single axle tractors were originally designed for ploughing, and work off a simple two stroke engine. The vehicle looks like a wheelbarrow and can either be pushed along or attached to a trailer. The design was originally Japanese, but manufacturers in both Thailand and the Philippines have responded to proposals and are now producing them. The ILO has noted that whereas bicycles and tricycles are in wide use in Asia (mostly pushed) the same is not the case in Africa, where they are little used or manufactured. In Malawi a highly successful bicycle ambulance service has now collapsed due to a high tax now placed on bicycles.<sup>9</sup>

Not only do roads have to be built or repaired and vehicles which meet the existing on-farm transport demand need to be developed, but alternatives need to be sought and developed which actually change that demand. For example, were the rural areas to be electrified the need for the transportation of wood and other fuels would diminish. Expanded telecommunications would also ultimately impact on the demand for personal physical mobility in rural areas. Services previously dependent on travel would be performed by the telecommunications system, whilst the increasing contact with other parts of the country would in turn create pressures for new transport connections.

The construction and maintenance of roads is crucial to the off-farm transport needs of rural South Africans. It has been suggested by Cosatu and other organisations on numerous occasions that the construction of rural roads could form part of an employment creating public works programme. However a careful analysis of the South African context would have to be done before embarking on such a programme. Such labour intensive schemes have been successfully implemented in countries totally dependent on imports for machinery. However where much road building technology is locally available, it may not prove to be that cost effective to employ labour intensive techniques. Geoff Edmunds of the ILO Employment Section has suggested that gravel road building using labour intensive techniques assumes a wage cut-off of \$5 per day. He suggests that where labour intensive techniques are used, the advantages are less in terms of job creation than in an alteration of the capital mix. In Kenya, for example, various feeder road projects are currently involving the employment of about 4 500 permanent workers and 12 000 temporary workers. Approximately 2 000 person days are required for the building of one km of gravel road. In the Kenya example, road building projects have therefore succeeded in creating jobs for thousands, not tens of thousands. The major advantage for Kenya is that it is relying less on expensive imported machinery and parts.<sup>10</sup> There may not be such a comparative advantage in the South African case. However, there may be other significant advantages in such labour intensive road building and maintenance schemes in South Africa. In particular, given the sheer size of the rural unemployed population, and the large numbers of relatively dense rural settlements, the imperative of job creation and skills development may be over-riding. There already exists an interesting example in the so-called "Self Governing Territory" of Gazankulu in the north east of South Africa. 80 to 90 percent of the Gazankulu population lives outside of any towns - the majority in one of approximately 250 settlements under the jurisdiction of 40 tribal authorities. 50 to 65 percent of the total Gazankulu road network is in these settlements, and while the rural road network is in a relatively good condition, the

internal street infrastructure in the settlements is very poor. Planning of layout has been poor, resulting in the incorrect placing of trip generations, bad drainage (in turn leading to serious erosion), and inadequate reserve widths. Inadequate funds have been made available for maintenance and upgrading. The Gazankulu Department of Works in January 1992 embarked on an intensive programme of upgrading and rebuilding the streets of the settlements. Projects have been identified through a process of consultation, and have been given priority weightings. An estimated 225 sites (2km long streets or less) will benefit over a period of two years. Labour intensive methods employing local labour are being utilized. The average period of employment of labour will be six months per project, with an estimated 20 to 30 percent of the economically active but unemployed, local population involved. It is intended that the skills developed will in future contribute towards the use of local teams in the construction and maintenance of the street infrastructure. It remains to be seen what the real long term impact of the scheme will be - both in terms of providing skills and jobs, and in terms of democratic participation in the provision of infrastructure.<sup>11</sup> The effective implementation of such a programme could therefore have significant redistributive effects in non urban South Africa, irrespective of the issue of capital mix raised above.

Agricultural transport needs (both commercial and subsistence) cannot be ignored. Not only does transport affect food security in the sense of contributing to the productivity of the agricultural sector overall, but an increase in farming incomes will have a direct effect on the purchase of those goods and services supplied by the industrial centres.

#### ROAD TRANSPORT AND MANUFACTURING

In the manufacturing sector transport serves three central functions :- the assembly of raw materials; the transfer of semi finished products between plants within one production group; and the distribution of the finished product.

Changes in manufacturing technique can have a profound effect on the nature of the demand for transport. For example, the Just-In-Time manufacturing technique demands that the idle capital inventory is reduced. This will inevitably result in smaller loads and more trips. In turn this is likely to affect the demand for smaller delivery vehicles, and also the reliance on third party services rather than own account transport operations. The reason for this is that management of the total physical distribution system becomes necessary under Just-In-Time manufacturing techniques, and this is outside the scope of small and medium-sized firms. Transport is no longer just a question of getting supplies in and products out. Co-ordination and synchronisation become essential. Information systems become vital, as they can be instrumental in reducing the lead time of each stage in the manufacturing process. Transport in many instances thus becomes a higher proportion of logistical cost, and the emphasis becomes that of reliability rather than purely cost. The Just-In-Time manufacturing technique may also have the effect of making the transport portion of the production and distribution process in and of itself less productive, by increasing the unladen distances of carriers. Within the public carrier road transport sector in 1988 over one third of distance travelled was unladen.<sup>12</sup> One may safely assume that a portion of this unladen distance was caused by the permit system, and that the scrapping of the permit system is likely to reduce the unladen distances. However, changes in manufacturing technique may well create more unladen distances. Not only this, but a greater number of trips is likely to increase congestion and road maintenance needs. Just-In-Time techniques could very well be frustrated by disruptions caused by the very changes in the production process which are aimed at making production more efficient.

The changes in transport described above (more trips, smaller loads etc) are already reflected in South Africa in the recent rapid expansion of the courier and express transport services. According to a report in the Business Day<sup>13</sup> the value of the



courier and express transport industry was R2bn in April 1990, with a projected growth rate of 20% per annum. In 1990 the cost of collection and delivery of parcels alone accounted for over 50% of operating costs, suggesting huge inefficiencies within this leg of the distributional chain. The phenomenal growth of the Rennies owned XPS express delivery service, which has captured 25% of the express parcels market, is reflective of the overall growth within this sector. Having started operations in 1984 with ten 1000 cc motorbikes (as a consequence of being refused permits for trucks), the company now owns over 300 trucks and has had a 100% annual growth every year since its inception. It now carries over 11 000 parcels daily. The reason for the company's success lies in part in its development of a new national distributional system which relies on a limited number of centralised "hubs", from which deliveries are dispatched. "In other words instead of deliveries being arranged from point to point (eg town to town), each region has a hub to which all parcels for that area are sent before being redistributed. The most important national hub is in Bloemfontein, where rigs converge from around the country daily and where packages are sorted and reloaded to their destinations. The company's operations are further enhanced by a sophisticated electronic tracing and tracking system, using over 260 computer terminals. The company is in fact the largest user of portable data terminals in the transport industry in South Africa. The use of the system which in some cases is linked directly to customers, means that the whereabouts of a parcel can be checked at any one time. The use of the terminals for recording times of delivery, the name of the person taking delivery etc, had in 1990 reduced the documentation costs per parcel from 60c to 10c. Interestingly XPS has also moved into intermodality, in the sense of using aircraft for destinations where there are regular flights, and in some cases using dedicated aircraft. In its limited international delivery service, the company also offers one stop services for clients by tying into existing international services offered by other companies within the Rennies Group.<sup>14</sup> The question of intermodality in logistics and

distribution is increasingly becoming crucial in the transport industry, as will be explored later in this chapter.

It should also be borne in mind that the growth of parcel delivery and express services may open the way for the expansion of an organised network of owner operators (largely black). As indicated above, the existing system is highly monopolised - with the Rennies Group's XPS having the lion's share of the market. There is no reason to believe that this could not be substantially altered, with a significant redistributive effect in favour of the drivers.

Any changes in the organisation of production in manufacturing then, need to be accompanied by careful consideration of the changes required within the road transport sector itself. If greater productivity and efficiency of transport is to be attained, inter alia the organisation of work will have to be addressed, ownership structures will have to be analysed, and new technologies identified. Depot locations, packaging, vehicle scheduling, costing and cost control, marketing, legal limits to vehicle dimensions and axle mass loads, and so on will also have to be taken into account. Given that on average at least 20% of the price of commodities in Britain is spent on transport<sup>15</sup>, and in South Africa it is estimated that up to 25% of the cost of some products to consumers is derived from distribution costs<sup>16</sup>, such improvements in transport productivity are essential to keeping down of commodity prices.

Even without such changes as Just-In-Time, increasingly there is a tendency to rationalise production and distribution in such a way that there remains a core production unit, with third parties providing transport and other services. Whilst in South Africa the tendency of companies has been to rationalise in order to cut costs, this does not have to be the sole criterion, and in fact is not always a sensible one. Contracting out in order to cut costs can mean that efficiency is sacrificed. Other negative consequences are that wages and working conditions of employees

in the contracted services tend to drop. It cannot be argued that contracting out is in and of itself a bad thing. However it should be pursued with a view to improving productivity and efficiency, and effecting long term reductions in commodity prices, rather than as a short cut to lower production costs. If contracting out permits the increasing utilisation of vehicles, improved use of technology, and the enhanced interconnectedness between modes of transport, then it will have the former positive effect of enhancing productivity. Strong trade union organisation amongst freight transport workers, and trade union rights, are prerequisites for preventing the downward drift of wages and working conditions of workers contracted out in this way.

Not only do changes in manufacturing technique affect the demand for and organisation of transport, but changes in types of goods manufactured also produce transport changes. For example, light manufacturing sites tend to be scattered around the peripheries of cities, rather than being concentrated in one zone with easy access to rail transport. Short dense movements of freight by road tend to ensue. Worldwide there has been a tendency for road freight transport to expand and rail freight to decline as production and trade in minerals and heavy industry declines. This is because the cost advantages of rail are lost as soon as routes are short and repeated handling is required. The risks of damage and delay become high. There is no apparent reason why South Africa should be the exception. Again, this suggests the necessity for improved productivity in transport.

In a study on distribution productivity within the manufacturing sector (fast moving consumer products), the National Productivity Institute<sup>17</sup> showed that distribution productivity ranges from 32% to 64% of optimum with an average of 50%. The NPI study argues that distribution productivity could be improved on average by 45%. Fleet sizes of manufacturers running transport on their own account could be reduced by approximately 10% and the average company could save between R0,5m to R1m per annum.

The indices used by the NPI to calculate productivity were the following :- availability of vehicles, measured as the ratio of "uptime" to total time; time utilization, calculated by dividing utilized time by the available time; and efficiency of crews, calculated by dividing standard times for driving, queuing, off loading etc by utilized time. Overall productivity therefore was calculated as a measure of availability x time utilization x efficiency. Mass utilization (the ratio of total weight distributed to the total weight allowed by law) and volume utilization (the ratio of total volume of goods distributed to total enclosed space available) were taken as further indices of fleet productivity.

Warehousing productivity within manufacturing could also be vastly improved. The NPI study cited above showed that the manufacturing companies surveyed utilized on average only 56,7% of available warehousing space, and that the ratio of credit notes to invoices was only 66,8% as a result of the physical return of credit notes and being out of stock. Stocks were on average held for 11,5 days.

#### ROAD TRANSPORT AND THE RETAILING INDUSTRY

Just as changes in the organisation of manufacturing impacts on transport, and vice versa, so too do changes in the retail industry impact on transport. In the retailing of groceries in South Africa three main supermarket chains ("grocery multiples") have emerged - namely Checkers, OK, and Pick 'n Pay. Increasingly these retailers rather than producers dictate the supply chain, by dictating producers' selling prices and quantities for delivery. The trick for such large-scale retailing is to balance not running out of stocks with carrying as little extra stock as possible. The instinctive transport response of the chains has been to demand frequent delivery from suppliers direct to stores. However this has led to chaotic and congested delivery conditions - often causing as many problems as running out of stock. Ordinary supermarkets average twenty deliveries a day, while hypermarkets can receive up to eighty

trucks daily. Jeremy Hele of the Grocery Manufacturers Association asserts that 75% of the delivery vehicles deliver at a quarter of their capacity, and only 4% are full.<sup>18</sup> Deliveries are therefore highly inefficient, with exceedingly low labour and vehicle productivity. The retailers are beginning to look to cutting the number of deliveries by consolidating loads, but each is following a slightly different route. The OK for example has pursued the option of building four wholly owned centralised warehouses, to which suppliers deliver on a regional basis. Goods are thereafter forwarded by the OK to the various stores throughout the country. Pick 'n Pay on the other hand is experimenting with a variation on the use of dedicated third party carriers. The company has nominated a set number of carriers to deliver directly to Pick 'n Pay stores. Those who have been nominated are either major grocery manufacturers who already deliver large loads, or carriers who deliver for a group of manufacturers. Checkers appears also to be going the route of Pick 'n Pay, and has in addition introduced new technology in the form of "roll tainers", whereby orders are sealed inside wire cages on wheels for protection against pilferage and ease of movement once off loaded. Wholly owned warehouses have not been opted for by Pick 'n Pay and Checkers on account of the massive cost of establishing these. Hele has estimated that the full implementation of more efficient distribution systems could save the three supermarket chains cited up to R100m in total per annum.<sup>19</sup> To facilitate improved distribution in the retail trade, Sacob (the South African Chamber of Business) has established a Distribution sub committee, who's task it to look at the standardisation of trucks, materials handling, equipment, receiving procedures, and design of receiving areas.

Mail order retailing is not yet an important means of distribution in South Africa. However, as a form of distribution it can be expected to expand substantially, as is the case in Western Europe and the United States. Mail order retailing results in the expansion of specialist carriers, small volume deliveries, and the use of information technology.

Increasingly in Western Europe and the United States the sale of electrical domestic appliances (both white and brown goods) is characterised by the holding of small stocks in stores, and direct delivery (either in-house or by third party transporters) from the factory or warehouse. There is no reason why the same pattern should not be expected in South Africa.

The use of automated guided vehicles in warehouses is limited in South Africa, although internationally AGVs have been in use for over thirty five years. Installation of AGVs is said to be neither costly nor complicated, consisting of the placement of a wire groove along the AGV route and the creation of a magnetic field which controls the steering of the vehicle. The advantages of AGVs include the fact that they can be used to replace the use of forklifts which are both expensive to operate and often hazardous to operate. A further advantage is that they can be used in areas that are unsafe or unhealthy for workers, such as cold stores. A disadvantage of AGVs in warehousing is obviously the fact that their use inevitably reduces the employment of labour.

It is not enough, however, to look only towards improving the efficiency and productivity of existing distribution systems. For patterns of distribution have themselves been heavily distorted by apartheid. For example, supermarkets have largely been built in white suburbs and without access to frequent public transport. This has resulted in a high degree of inaccessibility for the majority of black township residents. They have been left to rely on much more expensive small grocery stores and "spaza shops" (tuck shops set up very often in shacks on the pavement). Purchasing has tended to be in small quantities both for reasons of transport and reasons of cost. Such existing patterns of consumption therefore need to be taken into account when addressing the need for improved transport efficiency in distribution. It may be the case, for example, that there is enormous room for the growth and development of an owner driver network of transporters servicing small retail outlets within the

townships - individually or co-operatively operated. Expansion of this activity would in itself have redistributinal effects in that it would be income generating for the drivers. This possibility needs further investigation.

## CHAPTER FOURTEEN

### TECHNOLOGY AND TRANSPORT

#### INFORMATION TECHNOLOGY AND FREIGHT TRANSPORT

There have been significant developments in information technology in the transport sector over the last few years, both internationally and in South Africa. In some instances South African computer developers have the leading edge in the world market of new systems.

Until recently the only non-manual system of recording information in the transport sector was the tachograph, installed largely as a control mechanism over truck drivers. For this reason it was known as the "spy in the cab". The tachograph records, through a simple circular graph mechanism, stops and starts, braking, and speed.

While the new computer systems continue to measure these variables, they have been developed to deal with far more complex productivity questions also. The principal computer information technology applications in distribution are sales order processing; despatch goods invoicing; stock control; stock location; depot location; fleet management; vehicle scheduling and routing; and tachograph analysis.

The "Traveller" system, developed and produced in South Africa by Transport Data Systems and produced also now in Taiwan, is a system whereby each truck is fitted with a memory cartridge which records speeds, revving, idling, fuel consumption and so on. The memory cartridge is removed from the on-board computer at the end of a journey and the information downloaded into a personal computer in a matter of three seconds. The system can be interfaced with any number of fleet management programmes, and within the space of a few hours a fleet manager will have an accurate picture of fleet utilization and productivity. By mid 1989 it was estimated that at least 2000 trucks in South Africa



were fitted with either the Traveller system, or one of three other systems in operation.<sup>20</sup> Companies which have installed such systems include Hultrans, Renfreight, Meadowfeeds, GDI Bulk, and Storm and Company.<sup>21</sup> In 1989 the Traveller system was being marketed internationally at a cost of less than 50% of the cost of its nearest rival, made in Germany.

Other specialist information systems have been developed within the trucking industry. Vanguard Computers (previously owned by Cargo Carriers, and now owned by Transitech) has developed a special system for recording liquid bulk deliveries and a new system for general trucking. Both systems have a novel way of downloading information at central depots. Instead of having to remove a memory cartridge from the cab, when the truck returns to depot for refuelling, a cable is attached between the petrol bowser and on board computer. This switches on the fuel pump and at the same time downloads all information on the previous trip to a desk top computer in the administration centre. When all the data is received the on board computer gives a buzz to let the driver know he can unplug the cable. The driver has to spend no time at all in transferring information required. Transvaal Heavy Transport which operates fifty vehicles and moves 7500 tons of steel structures and abnormal loads a month, claimed in 1988 to be the first company in the world to use a smart card system for dispensing fuel.<sup>22</sup> Like the Vanguard system, this system integrates fuel and fuel consumption records with other accounting functions, monitoring vehicle costs and revenue etc.

As mentioned above under Transport and Manufacturing, there have also been developments in the area of cargo tracking, with XPS taking the lead in road freight. Its sister company Renfreight Forwarding, which controls 26% of the value of all imported cargo, has developed an information system which links cargo tracking with documentation and costing. In late 1989 the company began computerising all its major warehouses, installing hand held computers in an attempt to streamline inventory management and stock control. The divisional manager of

Renfreight Forwarding made an interesting comment on this development when he stated "we believe that by cutting down the amount of repetitive data capture at various stages we will free our staff from onerous and boring tasks and give them more time to concentrate on improving service levels to our clients".<sup>23</sup>

With the aid of transmitters and/or satellites, cargo tracking could be made more specific to the actual location of vehicles. The capital input for such systems is likely to be large and mostly unaffordable for smaller road transport companies. However it could have interesting applications in all forms of road transport, including passenger transport.

The introduction of the RTQS system shortly will obviously speed up the trend of fitting sophisticated on board computers. Once it becomes compulsory for drivers to be able to present information to traffic authorities on driving hours, owners of fleets are likely to install systems which do much more than provide the information required for the new RTQS control system.

For its full potential to be realised, computerised information technology needs to be introduced in a systematic way. Writing on the subject, Melvyn Peters<sup>24</sup> advises that only if the company has unique features of its distribution system which it must keep intact should it consider having a software programme specially designed. He points out that the installation of a dedicated programme often involves a substantial financial outlay and results in numerous teething problems. He suggests that any company considering converting to information technology should think carefully about the distribution tasks that it wishes the computer to perform, and thereafter examine the various packages on offer. He points out that in the case of Britain there are at least 370 such packages available and that a considerable degree of rationalisation is crucial. Programmes selected should preferably not simply be modelled on manual systems, as these do not come close to realizing the full data processing potential of the computer. Finally Peters makes the point that the

implementation of information technology systems must be accompanied by thorough operative training. Without such training the potential for IT to improve distribution efficiency may not be realised.

Information technology advances have also been made within transport modes other than road freight. Internationally classic rail signalling technology based on the detection of track section occupancy is being increasingly replaced by on-board computers communicating with navigation satellites. Train positions can be calculated thus within metres, and transmitted to control centres. British Rail has also developed a system utilized to determine fuel efficiency and to indicate to the train driver he can cut off the engine power and coast on the tracks and still keep to the timetable. Whilst Transnet has one of the biggest mainframe applications in the country, the systems in operation are not world competitive in the same way that those in the road freight industry are.

Interesting developments have also taken place both in the air and sea freight industries. Increasingly "one stop" integrated international services are being offered by transport companies, cutting out the necessity for clearing and forwarding agents to be employed by importers and exporters. With South Africa's modest trade throughputs, the activities of the large international integrated carriers (eg the US based United Parcels Services, and British Airways) are unlikely to affect the market in the short term. This has not stopped the larger transport groups - Rennies in particular - from increasingly moving to an integrated approach in the import/export markets. For example, Safmarine (which completely dominates the international shipping world in South Africa) has developed an electronic information service known as "Compass" which offers an electronic link up to customers. Through this system customers have access to comprehensive data on cargo movements - including the location of a shipment, the status of cargo bookings, cargo origin and destination, port of loading and discharge, container numbers,

and sailing schedules. Ultimately this information system will result in cargo being administratively cleared at sea, cutting out a lengthy and bureaucratic process usually performed on land after cargoes have been offloaded.<sup>25</sup> Given that paperwork-related costs in international trade are estimated to be between 3.5% and 15% of the value of the goods<sup>26</sup>, such a development of the use of information technology could make an important competitive difference.

#### OTHER TECHNOLOGICAL DEVELOPMENTS IN ROAD FREIGHT TRANSPORT

##### Containers

Possibly the most significant technological development in freight transport over the past few decades has been not in the field of computers or engine design, but in the design of a simple transport box - the container. The container has allowed the unitisation and standardisation of the movement of cargo, and has created the ability to transfer cargo at a much faster rate from one mode to another. It has thus enhanced the development of intermodality enormously. Containers can be transferred with relative ease from ship to shore, and from shore to road or rail. The importance of containerisation in the late 1970s was reflected in investment in South Africa, when at least R500m was invested by the state and private investors in on shore container handling.<sup>27</sup> This figure does not include investment in new designs of rail and road trucks.

Rail transportation of containers in South Africa is usually by means of "container on flat car" (referred to as COFC in the transport world). At the end of the rail leg of a trip the container has to be transferred onto a road vehicle by means of a crane or forklift. There are however two ways of linking the rail and road transportation of containers more easily. A system common in Europe is that of the "swap body", whereby the body of a road truck is designed in such a way that it can be lifted off the chassis of the vehicle and placed on a rail truck, becoming the body of that truck. A system frequently used in the United States is that of "trailer on flat car" (TOFC), otherwise known

as the piggyback system, whereby the semi-trailer of a road truck is loaded onto a flat rail car. At destination the semi-trailer is offloaded, containers and all, and hooked up to a truck tractor. Clearly there would be much room for the development of these options in South Africa.

### Pallets

Not only has the simple container revolutionised transportation, but developments in the even older and simpler pallet have also been crucial. Standardisation of pallets has allowed for the total integration of the transport chain - from production through to despatch, transport, and warehousing. The load unit is the same as the transport unit, which in turn is the same as the storage unit. Depending on the type of goods, pallets can carry between 1000 and 1250kg, or 1.5 square metres. The advantage of using pallets lies in the faster flow of goods, less physical work, a reduction in damage at the re-loading stage, a reduction in packing costs, better utilization of storage space, and a reduction in the time between loading and unloading. Further technological developments in the area of pallets is possible. For example, in Germany roller pallets are extensively used. These can be moved without the aid of storage handling vehicles. They are simply lifted into distribution vehicles, transported to their destination, and then rolled to the warehouse shelf.

### Hydraulic Tailgates

Loading and offloading of trucks can also be made easier through the introduction of hydraulic tailgates fitted onto trucks, or hydraulic ramps, installed at warehouses and lowered and raised according to the height of vehicles.

### Specialised vehicle design

The design of road vehicles themselves has become highly specialised. To what extent specialist vehicles for the transportation of goods such as furniture, bread and confectionery, drinks, milk, fish, groceries, etc are in use in

South Africa needs investigation. Certainly in Western Europe the use of such specialist vehicles is extensive. The usefulness of specialist vehicles obviously depends partly on volume. However advances in truck design have also led to the development of exchange body systems, whereby one specialist body can be exchanged for another. The demountable bodies are exchanged mechanically in the case of smaller bodies, and hydraulically or pneumatically in the case of larger bodies. Such demountable bodies have the added advantage of acting as preliminary warehouses. Also they can be placed near ramps or in a parking yard for offloading while the vehicle is being used again. A reduction in standing time for the vehicle results, in turn producing a higher yearly mileage of the vehicle and more efficient use of drivers. Whether such design changes in South Africa would be cost effective would have to be investigated further.

Where articulated trucks are concerned a simpler variation on the demountable body theme is possible. Generally articulated vehicles in South Africa are operated with the tractor and trailer permanently coupled. There is no reason why this should be the case however. The use of additional semitrailers to facilitate loading and off-loading whilst the truck tractor is in operation with other semitrailers would raise the utilization of the truck tractor.

#### Axle design

Changes in axle design and in the limits on volumes carried could also enhance vehicle productivity. Ian Moss of the RFA argued in 1990 that if certain limits on vehicle dimensions were altered, productivity could be increased by 30% per trip.<sup>28</sup> J Webster has pointed out that whilst South Africa is in line with most overseas countries on vehicle dimensions in most respects, it differs in respect of the maximum permissible massload per axle. He suggests that the permissible single axle mass load should be increased from 8 200kg to 10 000kg. If such a change were accompanied by the introduction of five-axle articulated

vehicles which have three axles on the trailer and two on the tractor (as opposed to two axles on the tractor and two on the trailer), the potential additional damage to roads caused by additional weight would be offset. Webster points out that 90% of all articulated vehicles in West Germany, and the majority throughout Europe and Britain are of this type. He argues two axle truck tractors cost R50 000 less than three axle tractors, that their imported components are worth about R20 000 less, that for the same performance and gross mass they use eight litres per 100km less fuel, that wear on tyres is less, and that damage to roads by each of the two axle configurations is virtually the same.<sup>29</sup> The additional load mass would however cause more road damage, requiring additional compensation to the road authorities.

Axles can also be designed to be adjustable according to weight. For lighter loads, if the axle is higher, the wear and tear on tyres is reduced. Given that the cost of tyres increased by 297% between May 1989 and June 1990, many operators may be tempted to introduce such innovations. However, lifting the axle increases wear and tear on the road.

#### Engine Design and Fuel Efficiency

Changes in engine design could also result in greater efficiency, particularly in relation to fuel consumption. Webster argues that a 16% fuel saving for five-axle articulated vehicles could be effected with minor modifications to engine design. He argues that the modern automotive diesel engine operates at its most efficient when the power demanded from the engine is equal to the power output of the engine. This can only be achieved if the engine is of adequate power and the gearing of the vehicle (gearbox and rear axle ratio) is such that the driver can operate at optimum road speed at lowest engine speed when adequate power is produced. For example, the popular engine fitted to truck tractors is the ADE 422T which is geared to travel at the maximum speed of 80km/h at 2 300 rpm. Carrying a gross mass load of 38t (the legal limit), the engine produces 243kW, although the power

required is only 196kW. Fuel consumption would be 68 litres per 100 km. If the same vehicle were correctly geared with the engine at 1 400 rpm to produce 200kW, fuel consumption would be 59 litres per 100km. There would be a 16% fuel saving, with no change in gross mass or road speed.<sup>30</sup>

Whilst fuel savings within the road transport industry will enhance the productivity of individual operators, it will not necessarily have a major impact nationally on overall fuel consumption. Between 1978 and 1988 the demand for diesel grew 10% whilst the demand for petrol grew by 45%.<sup>31</sup> This unequal growth in demand can be expected to continue, with the growth in private car ownership continuing to outstrip the growth in demand for commercial vehicles. A massive surplus of diesel will result, as the production of petrol and diesel are closely interrelated. R H Scott speaking to the RFA Convention in 1990 anticipated that such a surplus could be very serious by 1995, and that it would have to be curbed in some way. He suggested two possible options - the export of refined diesel, or curbing the growing demand for petrol by encouraging diesel vehicles. He argued that energy policy in South Africa needs to shift from being a supply-oriented policy to moderating demand and paying more attention to fuel efficiency.<sup>32</sup> E A Uken writing on future energy requirements in South Africa<sup>33</sup> argues that the excess in diesel production is likely to lead to worldwide crude oil product substitution around the turn of the century. He anticipates that in South Africa such a shift will be primarily towards coal based synfuels, with a gradual move towards a methanol economy, supported by the limited extension of ethanol production and a fraction of battery operated vehicles. Whilst ethanol is currently added to petrol on the Reef, a fully fledged ethanol economy such as exists in Brazil is unlikely as too much land would be required to support the production of crops to put it into effect. Uken predicts that South Africa has sufficient coal and gas reserves to see methanol production through to the second half of the twenty first century. Methanol would be produced by Mossgass and by AECI which is currently planning a



plant with twice the capacity of Mossgrass. An alternative to a strategy which aims to curb demand for fuel would be to develop alternative sources of fuel.

Energy consumption and efficiency in the transport industry also need to be looked at from the perspective of the consumption of energy in the manufacturing and maintenance of vehicles, roads and track (in the case of rail), and also of secondary systems such as robots, computer controls and so on. The energy required to dispose of or recycle vehicles when they are scrapped is also not inconsiderable. To say that three quarters of total crude oil in South Africa is destined for the transport sector<sup>34</sup>, and that 64% of the total diesel demand is consumed by the transport sector<sup>35</sup> is to ignore all other energy inputs involved in keeping the transport industry going. These figures refer to fuel consumption by vehicles alone. If one of the objectives of a transport policy is to be that of energy efficiency, then a total energy audit would be required including manufacture, use, and disposal.

#### Engine design, fuel and the environment

It is impossible to talk of fuel and fuel consumption without considering a range of environmental issues. The biggest cause of global warming (the "greenhouse effect") is the burning of carbon-based fuels, which produce carbon dioxide. Parallel to this, the destruction of forests and other plant life reduces the global absorption of carbon. Motorised travel is responsible for one fifth of the world's carbon dioxide emissions. The burning of fossil fuels also produces carbon monoxide and nitrogen oxides and other particles such as small pieces of lead and soot. These are both directly harmful and have the more distant effect of creating acid rain.<sup>36</sup> According to Keith Buchan<sup>37</sup> the fitting of catalytic converters in all vehicles could mean a significant decrease in several key pollutants (hydrocarbons, carbon monoxide and nitrogen oxide in particular) by the turn of the century. The development of more economical engines could also have the effect of reduced emissions of carbon dioxide. However, such advantages

are likely to be extremely shortlived and offset by worldwide traffic growth. Buchan argues that the only permanent environmental benefit which can be brought about by those technological changes to fuel usage which have already been developed, is a reduction in the emission of lead. The marketing of vehicles using unleaded fuel is crucial. In South Africa it is significant that despite the lowering of the maximum lead content for petrol from 0,836 g/l to 0,6 g/l in 1986 and to 0,4 g/l in 1989, the actual lead content in the air increased by 22% in the inland areas between 1985 and 1988.<sup>38</sup> This was because prior to 1985 the lead content of petrol in the inland areas was below the legal limit, and manufacturers brought it up to the standard. The same cannot be said for the coastal areas, where airborne lead decreased by 34% in the same period. Returning to the question of other pollutants such as carbon monoxide, levels of air pollution are being monitored in some South African cities by the CSIR under contract to the Department of Health. However there is apparently no systematic and nationally coherent approach to the question of air pollution from transport vehicles.

## CHAPTER FIFTEEN - OTHER COSTS

### LICENSING

In 1989 there were 4 698 423 licensed motor vehicles in South Africa, 1 086 559 of which were registered for commercial freight use.<sup>39</sup> Between April 1988 and April 1989 licence fees for heavy vehicles increased by 84% in the Transvaal, 70% in the Cape, Natal, and Orange Free State respectively.<sup>40</sup> As was pointed out in Chapter Nine, licence fees are not allocated to a dedicated transport fund. Whether transport operators have recouped their licence costs through the benefit of improved roads etc is doubtful, particularly as in many cases such improved roads demand the payment of additional toll payments. Furthermore, the increases in licence costs could never be compensated for alone by improved efficiency. Therefore a review of the licence fees and licensing system would have to take place within the context of an overview of the tax system as a whole.

### WAGES

It has been estimated that salaries and wages constitute around 25% of operating expenses for road transport operators. In the public carriers sector the minimum wage for drivers in the Transvaal in October 1991 was R200 per week. For general workers the minimum wage was R140 per week.<sup>41</sup> The poverty datum line (Subsistence Living Level) as calculated by the Bureau for Market Research at Unisa, was R191.11 per week in the same month. Real wages for heavy duty drivers declined by 20% between 1980 and 1990, with the most rapid decline in the years 1985 to 1990. Real wages of labourers in the road haulage sector remained almost constant.<sup>42</sup>

Cutting costs by cutting wages in the transport sector would meet with enormous opposition from workers. The Transport and General Workers Union represents over half of the 16 000 workers covered by the Industrial Council for the Motor Transport Undertaking (ICMTU) in the Transvaal, and at least 25% of the 64 000 workers employed in the industry nationally. Roughly a further 6 000

workers are organised into four other transport unions. Whilst the figures for unionisation may look comparatively low, it is important to note that the bulk of TGWU members are employed by the larger, more strategically significant companies and groups of companies. Accurate figures of the unionised percentage of the 59 000 private carrier transport workers are difficult to obtain, but given that the workforce across manufacturing and retail is approximately 30% unionised, one can safely assume that the same goes for transport workers within these sectors.

It should be noted that the Transport and General Workers Union at its Goods Transport Bargaining Conference held in August 1991 resolved to campaign for national industrial bargaining in the sector, as well as for a narrowing of job grades down to six basic grades. Furthermore the conference resolved to campaign to close the wage differentials between the regions of the country.

## CHAPTER SIXTEEN

### OWNERSHIP WITHIN THE ROAD FREIGHT SECTOR

#### Public Carriers

In 1988 there were one hundred public carriers in the road freight sector. Of these, five companies owned almost half the total public carrier fleet. The following table reflects size of companies amongst public carriers:-

vehicle numbers	no. of operators	% total fleet
less than 5	40	4%
6 - 10	18	6%
11 - 20	16	10%
21 - 50	17	24%
51 - 100	4	12%
over 100	5	44%

*Table Eleven : Vehicle Ownership Within the Public Carrier Sector<sup>43</sup>*

Fourteen public carrier companies or transport groups were listed on the stock exchange in July 1991. These were Trencor, Laser, Unitrans, Hultrans, Long Distance, Racy, Curfin, Supertrans, Imperial, Micor Industrial Corp, Longrail, Lyntex Transport Exchange, and Rennies.

#### Private Carriers

Roughly 350 private operators, controlling 150 000 vehicles, belong to the National Association of Private Transport Owners (Napto). The organisation believes that this constitutes around 70% of the total number of private carriers. Large companies and corporations which provide their own transport include South African Breweries, Premier, Eskom, Shell, and Pioneer Concrete.

### Full Maintenance Leasing

Many companies are now handing over their transport requirements to professional transport management companies. Just as changing manufacturing and retailing techniques have led to changes internal to the functioning of transport, so have these changes affected ownership structures. Increasingly manufacturers have given over their transport operations to Full Maintenance Leasing companies, leaving their own managers free to pursue the core activities of the company. In 1989 FML sales equalled the total value of sales for the preceding nine years. In 1990 Fleetrent had 25% of South Africa's truck leasing market.<sup>44</sup> Under the system of FML fleets are financed off-balance sheet, and from the manufacturer's or retailer's point of view, under-utilization is avoided. However this does not necessarily mean that the transportation itself is more efficient or productive. .

### Owner Drivers

Driver ownership has been encouraged by a number of both public and private carriers over the past few years. Presto Holdings was the first to introduce owner-driver schemes amongst the public carriers. In 1988 the company offered a deal to its driver workforce whereby the drivers could take over the trucks and operate on a contract basis for Presto. Initially the scheme operated smoothly for the few drivers who took up the offer. However by 1989 mileage was substantially down, whilst maintenance and other costs remained high. The company's attempts to keep the owner-drivers afloat was a major contributing factor to the development of its own financial difficulties, and the company was finally liquidated in 1990. Fifty one owner drivers and their vehicles were taken on by Viamax, a recently established Transnet subsidiary. Viamax promised full ownership of the vehicles to the drivers within four years.

Rennies owned Renfreight has also recently started to experiment with driver owner schemes, through its subsidiary Roadwing. Two

hundred vehicles operate out of the company's City Deep, Pretoria, and Durban depots, with a hundred and twenty of these being owner driven. In 1990 Roadwing's Managing Director, Isabel Louw, stated that Renfreight was considering extending the scheme to other subsidiaries.<sup>45</sup>

Mainline Carriers has also introduced its own version of the promotion of owner drivers. The company awards an annual prize of a new truck to the winner of its Driver of the Year competition.

The South African Breweries has introduced a scheme whereby it has transferred ownership of a number of its trucks to drivers, and uses these same drivers and trucks on a contract basis - paying an hourly rate for the service. In September 1988 the hourly rate paid to the drivers was R25. The minimum wage amongst SAB employed assistants (at least three per truck) was at the time R4.70 per hour. Had the owner drivers been paying the minimum rate for assistants they would thus have had only R10 per hour of their contract income to spend on repayments of the vehicle, maintenance and petrol.<sup>46</sup> They were therefore substantially undercutting the minimum wage for SAB employed assistants. They were able to get away with this as they were legally exempt from the minimum wages, being defined as "small businesses". In addition the assistants concerned were not unionised.

Interestingly, it has been the large and somewhat monopolistic companies which have introduced owner driver schemes. Clearly there has been an economic logic for such firms, invariably resulting in financial disaster for the drivers who buy into the scheme. It may be the case that instead of a form of owner drivership which depends on the ownership of hugely expensive rigs, a more organic system could develop to meet the needs of township retail distribution and/or small parcel express delivery, as suggested above in Chapter 13. The obvious question which arises is that of regulation of such owner-drivers. The

question needs to be asked as to whether the recently introduced RTQS system of regulation is appropriate for small operators, or whether a more participatory system of self-regulation may not be feasible. A possible paradox could arise in the form of redistribution for the good for small owners, but the worsening of labour conditions for any workers whom they may employ either as drivers or as assistants.

#### Co-operatives

There is no evidence of the development of co-operative forms of ownership within the road freight transport sector. A number of possibilities could be explored - particularly in relation to the possibilities for the expansion of the owner driver sector.

On the warehouse front, it should be possible to co-operatively build warehouses or distribution points outside of city centres, from which goods could be redistributed in small vehicles. This would have the advantage of keeping heavy traffic out of the city centres. It should also be possible to organise schedules collectively, just as it should be possible for a transport co-operative to operate in the service of a particular trade or geographic location.



## CHAPTER SEVENTEEN

### SUMMARY

In Part Four it has been noted that in looking at transport's role in agriculture, it is not sufficient simply to look at off-farm activities (ie the provision of roads and other infrastructure). Policies which address on-farm transport needs are possibly more important if redistribution is to be a central criterion for decision making.

Changes in manufacturing technique and also in the types of products produced have resulted in changing transport needs of manufacturers. The necessity for more frequent trips has resulted in the contradictory effect of a greater number of unladen distances, and accompanying productivity problems. Courier and express services have grown enormously, and information technology has advanced. As production processes have been increasingly rationalised, so have third party transport services increasingly been employed by manufacturers.

In the Retail industry the development of the hypermarket concept has had a profound effect on transport needs. Inefficiencies in the distribution of commodities to the large supermarkets and attempts being made by the industry to address these have been identified. It is noted that both mail order and direct delivery as systems of commodity distribution to the consumer are still relatively small-scale in South Africa.

With regard to technological changes in the road transport field, it has been noted that major advances have been made in relation to stock control, depot location, fleet management, cargo tracking, and so on. These developments have had a positive effect on expanding the concept of intermodality in transport. Other major technological changes to be taken note of include the advent of the container, advances in the design of pallets, changes in vehicle body and axle design, and changes in engine design. It has been noted that there is room for substantial

further improvement in vehicle design, particularly in relation to fuel efficiency and environmental protection.

It has been noted that license costs have recently increased dramatically, and that license policies would need to be reviewed in the context of an overall review of the taxation system.

The fall in the real wages of truck drivers over the past ten years is worrying, as it suggests that drivers have increasingly grown to rely on overtime payments to make up their pay packet. The trend to reduce the relative cost of wages does not bode well for the driver in the immediate future.

Changing ownership patterns in the trucking industry are extremely important to watch. Growth in the owner driver sector can be expected, as is the case with truck rental and the contracting out of certain functions. It can also be expected to have the effect of driving down wages and working conditions of truck drivers as a whole, and may well produce the result of a lowering of safety standards in the industry. If the RTQS system is not adequately enforced, this will certainly be the case.

## Endnotes to Part Four

1. Louw J H pp 184
2. Louw J H pp 208
3. Louw J H pp 208
4. Pembridge T J quoted in Wilson F and Ramphele M pp 49
5. Gandar M V quoted in Wilson F and Ramphele M pp 43
6. Eberhard A A quoted in Wilson F and Ramphele M pp 44
7. Interview with Geoff Edmunds of the Employment Section of the ILO, Sept 1991
8. Leinbach T R and Sien C L pp 77-78
9. Based on an interview with Geoff Edmunds of the Employment Section of the ILO, Sept 1991
10. Interview Sept 1991
11. Mkhacane H S et al 1992
12. *Transport Statistics* pp 62
13. *Business Day* 9.4.90
14. *Finance Week* 8.3.90
15. Crum M R pp 292
16. National Productivity Institute paper to RFA 1990
17. NPI paper to RFA 1990
18. *Business Day* 12.3.90
19. *Business Day* 12.3.90
20. *Business Day* 19.5.89
21. *Transporter* July 1989
22. *Business Day* 15.9.88
23. *Focus* August 1989
24. Peters M pp 210-222
25. *Business Day* 25.7.89
26. Browne M pp 2

27. EROSA pp 6
28. Moss I 1990
29. Webster J in Dehlen ed pp 103
30. Webster J in Dehlen ed pp 99
31. Moss I pp 14
32. Scott R H pp 1 - 18
33. Uken E A in ed. Dehlen pp 71 - 77
34. Uken E A in Dehlen ed. pp 71
35. Moss I
36. Goodwin P et al pp 51
37. Buchan K pp 23
38. Dehlen G L 1989 (a) pp 25
39. Transport Statistics pp 57
40. Webster J in Dehlen ed 1989 pp 99
41. Industrial Council for Motor Transport Undertaking Agreement Jan 1990 - Dec 1991
42. Labour Research Service , Wage Policy Review June 1991
43. D Lewis 1988 pp 3
44. *Business Day* 8.6.90
45. *SA Transport* Aug 1990
46. *New Nation* 22.9.88

## PART FIVE : CONCLUSION

South Africa is fast moving towards constitutional change. National political negotiations through the forum known as Codesa are proceeding apace. It is within this context that a range of players are arguing for a fundamental restructuring of the economy. All are agreed that without economic growth, a political settlement will not be able to deliver on the basic expectations of the majority of South Africa's people - most importantly, a reduction in unemployment, the mass provision of housing, improved health care, and decent education. What is not agreed is how to effect that growth.

Cosatu, the largest trade union federation in the country, has argued for a growth path that puts redistribution of wealth first. The policy advocates a kick-start approach, whereby the production of basic goods and services (housing, electricity, food, and clothing in particular) is stimulated using various tools ranging from nationalisation (in the case of electricity) through to consideration of public works programmes (in the case of housing and road building). Revised tax policies (including higher company tax), and changed trade and tariff policies would accompany such efforts. A drive to export processed raw materials in order to raise foreign earnings to pay for the necessary imported capital goods would also be required. There are two further key legs to the policy position - one being the necessity for the democratic involvement of the trade union movement in economic decision making, the other being the need for strategic research and policy formation within each industrial sector, and within sub sectors of the manufacturing sector.

It is within the above context that this study has been undertaken.

Both the South African and international literature on freight transport tends to be of a technical nature. It emphasises

questions of efficiency, costing, technology and so forth in the current context. It does not get beyond proposing marginal changes, and therefore does not provide pointers as to the role of transport policy in the process of fundamental economic restructuring. Freight transport is thereby not given a place in the process of real economic change. It is perceived as playing a supportive rather than a pro-active role.

This is not to underestimate the importance of changes in efficiency and productivity in the freight transport industry. In the view of the author, such changes are a necessary but not sufficient condition for the industry to play a more far-reaching role in the economy. It has been argued that an effective transport policy would need to :- support research and technological progress both in the area of information technology and vehicle design; reduce the cost of transport by reducing congestion through improving efficiency and productivity, and through identifying major cost blockages within the manufacturing sector (eg the cost of tyre production); and provide improved training for all levels of freight transport workers. It has further been argued by the author that the administration of transport requires democratisation and rationalisation; that the excessive accident rate needs to be addressed; that inconsistencies in road funding policy require resolution; and that a response is needed to changes in manufacturing techniques as well as changes in retailing methods and patterns. It has also been argued that environmental issues need to be addressed through the development of a fuel policy.

At a macro level, the author has argued that it is crucial that cross border rail and road policies be revised in order to ensure that regional imbalances are not created or enhanced. Tariff policies, and shipping rate policies need revising, and the possibility of developing a nationally owned shipping fleet should be entertained. Road funding requires careful thought in the context of an overall fiscal plan.

However, effective policy formulation on any one or all of the above issues will not necessarily contribute to either to economic redistribution or to the democratisation of the transport sector. It may well be the case that the transport economic cake simply gets bigger, and that the same distributional imbalances persist. Freight transport could remain almost entirely in the hands of white owners; the administration and policing of the system could remain hierarchical and authoritarian; and the industry and its allied infrastructural industries (eg road building) could remain sectors of shrinking, rather than growing employment. The author has tried to indicate areas where policy changes could be effected in ways which would redress such imbalances.

For example, it has been suggested that the issue of small business transport ownership (eg in the form of driver ownership) should be explored - particularly in the areas of township retail distribution, and parcel and express delivery services. Obviously the pursuit of policies which would support the development of such a sector would have to take into account questions of regulation, for two reasons. On the one hand, existing systems of regulation are not only inadequate in their own terms, but also highly authoritarian. The possibility of developing more locally controlled forms of self-regulation would need to be explored. On the other hand, organised transport workers in the larger transport firms would be unlikely to take kindly to the large scale fragmentation of the freight transport industry into units which would in all likelihood remain unregulated with regard to wages. (The existing wage regulations make provision for the exemption of small operators.) Extensive consultation and discussion with organised freight transport workers would therefore be necessary if policies to support the expansion of the owner-driver sector.

It has also been suggested that in the area of transport infrastructure, road building in the rural areas (especially in the settlements) could be developed to make a major contribution to the creation of jobs and skills. The knock-on

redistributional effects of such a programme could be substantial.

It was pointed out in the Introduction to this study that freight transport and passenger transport are closely interrelated. The development of a coherent transport policy would therefore require a further detailed overview of the passenger transport sector. Given the crisis of the bus industry at present, and the rapid takeover of passenger transport by the mini-bus taxi industry, there are major issues to address, ranging from congestion through to regulation and law enforcement.

National transport planning must be considered as integral to economic and social planning. All of the above imperatives (including the necessity for an overview of the passenger transport industry) cannot be seen in isolation from national strategic economic objectives.

No industrial strategy which is aimed at economic growth and the redistribution of wealth, could work without transport. This study was aimed at identifying some of the key questions for transport policy - in particular, freight transport policy. In the first instance it is hoped that the overview will be useful as a reference document for the two Cosatu affiliated transport unions, in taking policy debate and formulation forward. Other transport players, too, will hopefully find the research a useful resource document.



APPENDIX I  
LEGISLATION RELATING TO TRANSPORT

1. SATS Legal Succession to the South African Transport Services Act (Act 9 of 1989) making provision for the establishment of Transnet Ltd and the South African Rail Commuter Corporation as legal entities.
2. National Roads Act 1961 (amended 1983 and 1986). The 1983 amendment made way for the introduction of state toll roads and the 1986 amendment prepared the way for the privatisation of roads. Consolidated into the Transport Act in 1987.
3. Road Traffic Act (Act 29 of 1989) which consolidated and unified the four provincial road ordinances. Interim regulations gazetted April 1989 and partially implemented in May 1990.
4. Road Transportation Act of 1977 (preceded by the Motor Carrier Transportation Act of 1930) making provision for the permit system. Consolidated into the Transport Act in 1987. (With provision for the permit system to continue until the RTQS is fully implemented.)
5. Transport Act 1987 which consolidated the following Acts :-  
Road Transportation Act of 1977  
SA Shipping Board Act 1976  
Aviation Act 1962  
Merchant Shipping Act 1951  
Urban Transportation Act 1977  
Transportation Services for Coloured Persons and Indians Act 1974  
Black Transportation Services Act 1957  
National Roads Act 1961  
Air Service Act 1949  
National Road Safety Act 1981  
Transport Co-ordination Act 1948
6. Regional Services Council Act of 1985 with certain transport related functions. The Act has clauses relating to land usage and transport planning, roads and stormwater drainage, passenger transport services, traffic matters, and airports.
7. Environment Conservation Act (Act 100 of 1982), with regulations promulgated in 1990 main provision for traffic noise regulation.
8. Petroleum Products Act
9. Urban Transport Act
10. Transportation Deregulation Act No 80 of 1988
11. Transport Advisory Council Act of 1987

## APPENDIX II

### ADMINISTRATIVE STRUCTURES AND ORGANISATIONS RELATED TO TRANSPORT

Note : This list is by no means exhaustive.

#### STATUTORY BODIES AND OTHER BODIES CONNECTED TO GOVERNMENT

1. **Aerospace Industry Training Board**  
Made provision for in legislation in 1989 but not yet established by the industry.
2. **Committee of State Road Authorities**  
Co-ordinates the different road authorities in planning roads for rural areas.
3. **Committee of Urban Transport Authorities**
4. **Department of Transport**  
Responsible for the administration of the Road Traffic Act, the National Roads Act, the Transport Act, and the Urban Transport Act.  
Also responsible for the issuance of permits in South Africa for international road freight and passenger transport operators registered in other countries.
5. **Development Advisory Committee Project**  
Funded by the Department of Transport. Research work published by the CSIR.
6. **Durban Harbour Advisory Board**  
Appointed by the State President. Comprises representatives of the harbour's chief executive, the Durban Chamber of Commerce, the Natal Chamber of Industries, Die Sakekamer, and various shipping interests.
7. **Goods Transport Training Board**  
Run by the Goods Transport Industrial Council in the Transvaal. All employers and employees falling under the jurisdiction of the council pay levies.
8. **Interdepartmental Committee for the co-ordination of Passenger Services**  
Exists under the chair of the Department of Transport. Co-ordinates road and rail passenger transport services.
9. **Metropolitan Transport Advisory Board (MTAB)**  
Contributes to the co-ordination of transport planning. Functions as a technical planning advisory Board to the provincial administrations, the Regional Services Councils, and Local Authorities.
10. **National Energy Council**  
Established in 1986

11. **National Roads Board**  
Falls under the Department of Transport, and exists for the purposes of administering the National Road Fund and to control the operation of toll roads. Comprises five members appointed by the Minister :- two from the private sector and three from the public sector.
12. **Parliamentary Standing Committee on Transport**
13. **State Presidents Priorities Committee, and the Central Economic Advisory Services of the offices of the State President**  
Responsible for long term financial planning, including the co-ordination of the financing of the transport infrastructure.  
Also liaises with the Department of Transport with respect to passenger transport.
14. **Transport Advisory Council**  
Appointed by the Minister. Comprises twelve state appointees (from different departments and provinces) and 18 private appointees (including two from employee organisations - currently A Koekemoer and L N Celliers; two from road freight transport - currently I Moss and A Jacobs; and two from passenger transport - currently J Walters and J Chapman.)  
The chairperson and vice chair are appointed by the State President.  
The Council replaced the National Marine Advisory Council, the SA Shipping Board, and the Civil Aviation Advisory Committee. It has four sub committees, namely Marine, Air, Freight, and Passenger Transport.  
The Council's primary function is to consult with and make recommendations to the Minister of Transport, with the immediate emphasis on implementing the regulations requisite to deregulation.
15. **Transport Tribunal**  
Comprises an independent president plus two deputies.  
Exists to monitor the implementation of policy and to settle disputes within the sector on appeal (eg permit disputes so long as the permit system continues to exist.)

#### NON STATUTORY ORGANISATIONS

1. **Airlines Association**
2. **Grocery Manufacturers Association**
3. **National African Federated Transport Organisation (Nafto)**  
Nafto is an amalgamation of independent transport associations in SA and the neighbouring states. It is

affiliated to Nafcoc.

4. **National Association of Private Transport Operators (Napto)**  
Prior to 1989, membership was restricted to private operators (own account). In October 1989 Napto opened membership to RFA members and other operators, and also to operators registered outside of South Africa. Napto currently has around 389 corporate members, controlling 150 000 vehicles. This is about 70% of all private operators. Transnet may become a member shortly. Napto's stated objectives are to deal with legislative matters and make representations to parliament, and to improve the professionalism and productivity/profitability of the logistical infrastructure. Napto intends establishing a Southern African Transport Academy.
5. **Professional Owner Driver Association**  
Launched in May 1990. By the end of July 1990 the organisation claimed 500 members. The organisation employs a full time organiser, Mathews Makalima.
6. **Road Freight Association (RFA)**  
Previously the Public Carriers Association (PCA), the name having been changed in 1990. Members are road freight operators operating for hire and reward. The Association has five regions (Transvaal, Natal, Orange Free State/Northern Cape, Western Cape, and Eastern Cape) and is in the process of establishing regional offices. Services of the RFA to members include contract analysis, fleet profitability analysis, safety inspections, accident analysis, vehicle selection and computer based cost comparison models. In July 1990 the chairperson was Mr Deon Blignaut of Trencor. The Association has a Board of a maximum of 20 directors.
7. **South African Association of Freight Forwarders (SAAFF)**  
Plays a role in customs, shipping lines and all divisions of Transnet. Runs courses for freight forwarding companies eg on customs affairs, freight forwarding management etc.
8. **South African Bitumen and Tar Association**
9. **Sacob Distribution sub-committee**  
The sub committee was established in 1988
10. **South African Furniture Removers and Warehousemens Association (Safwa)**  
Originated in the early 1960s at the same time as the government amended the Road Transport Act to allow furniture to be moved by road. (The Act previously only allowed for road removal over short distances.) Safwa was originally set up to facilitate the co-ordination of return loads, and to render assistance to members in the case of

breakdowns. The organisation does not standardise prices, although it originally intended to. Safwa has about 120 members nationally, each bound by a code of ethics.

11. **South African Railways and Harbours Union (Sarhwu)**  
Organises exclusively amongst Transnet employees. Membership 32 000. Currently engaged in merger talks with the Transport and General Workers Union. An affiliate of the Congress of South African Trade Unions.
12. **South African Ship Owners Association**  
The Association has a sub committee on distribution
13. **Transport and General Workers Union (TGWU)**  
Organises in the transport, cleaning, and security industries. Transport membership currently excludes employees of Transnet. Total membership 43 000. Transport membership 26 000, largely in the goods transport sector. An affiliate of the Congress of South African Trade Unions (Cosatu).

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