

## THE COSTS OF DEFENCE ROAD TRANSPORT

Brigadier G.J. Christopherson,  
Director General (Movements and Transport),  
Department of Defence,  
Canberra.

**ABSTRACT:** The Department of Defence, as a major transport owner/operator, is as much concerned with cost control and cost effectiveness as commercially oriented organisations. There is however, a major difference between civil and military transport operations. Whereas the commercial world is driven largely by the need to be profit oriented, the primary goal for Defence is to be able to deploy and support forces in accordance with the direction of the Government of the day. I say primary goal, because efficiency is also an important factor.

Defence currently operates some 14,000 road transport vehicles and some 4,000 trailers. This paper identifies the structure and describes the costs of the road transport elements of Defence, explains the rationale for Defence retaining certain organic capabilities and describes the approaches which have been taken to achieve a cost effective operation.

The paper points out the differences between civil and military transport operations and the associated difficulties for Defence in introducing management initiatives which are only cost related. The paper concludes by highlighting the dilemma of operating Defence road transport efficiently in response to different criteria and management systems than those in place throughout the civilian road transport world.

## THE COSTS OF DEFENCE ROAD TRANSPORT

### INTRODUCTION

1. In terms of inventory, scope of operations and number of personnel involved, Defence is one of the largest fleet operators in Australia. With the increasing emphasis in both the Federal and State Government areas on full cost recovery, and the use of commercial accounting practices, the cost effective management of such a fleet has become a very important consideration.

2. However there is a significant difference between civil and military transport operations. Whereas the commercial world is driven largely by the need to be profit oriented within an acceptable social framework, the goal for Defence is to be able to deploy and support forces in accordance with the directions of the Government of the day. To satisfy this requirement, the Defence transport organisation has to be capable of:

- meeting any immediate operational tasks;
- meeting any requirement for further expansion; and
- concurrently providing day-to-day administrative support.

3. In any discussion on Defence transport, it is necessary to clearly distinguish the two elements of Defence. On one hand there are the uniformed Services (Navy, Army and Air Force), forming the Australian Defence Force (ADF) and commanded by the Chief of the Defence Force (CDF). On the other hand there is the largely civilian side of Defence headed by the Secretary and called the Department of Defence. Both areas work closely together under the Minister for Defence.

4. This paper deals with costs concerning the Defence road transport organisation. Transport in Defence encompasses everything from landing craft to B707 aircraft and, as such, is beyond the scope of one paper. It is in the road transport field that recent cost control measures have caused considerable discussion; hence the current emphasis on this single mode. This does not mean however that road transport is the most important of the Defence modes. All the modes are complementary.

AIM

5. The aim of this paper is to describe the cost structure and cost management procedures applicable to Defence road transport operations.

Methodology

6. The approach being taken in this paper is firstly, to identify current strategic considerations and their impact on guiding the development of Defence capabilities. The paper then addresses and identifies in turn the separate elements of the Defence road transport structure to support national strategy and identifies the costs and philosophy associated with each. The differences between civil and military transport operations are then described along with the rationale supporting existing management systems. Finally this paper concludes by contrasting the cost management procedures of operating Defence road transport efficiently in response to different criteria and management systems to those in place throughout the civilian road transport world.

THE DEFENCE REQUIREMENT FOR TRANSPORT

6. Before continuing with an examination of costs, it is necessary to explain the Defence requirement for transport. In a speech on transportation and the military in September 1986, The Honorable William H Taft, IV, a Deputy Secretary of Defense in the United States said:

'Shooting is what most people focus on, which is understandable since weapons are the big ticket items in the defense budget. And communication, which today involves such exciting systems and technologies as satellites and fibre optics, is essential to almost every aspect of defense. But the ability to move - to deploy forces and equipment-is first on the list'.

8. The Defence transport requirement is usually considered in terms of strategic or tactical mobility. Strategic mobility is the ability to move personnel and equipment from base support areas to an area of operations - usually over relatively long distances. Tactical mobility, on the other hand, refers to

## THE COSTS OF DEFENCE ROAD TRANSPORT

movement within an area of operations. The importance of transport in the Defence context was emphasised by Sir Peter Abeles in a speech to the Royal United Service Institute in October 1983. He said:

'Transport and defence are one. Without transport there is no security; and no feeling of security.'

9. Reference also needs to be made to the inter-relationship of movements and transport. Within Defence, transport refers to physical resources such as aircraft, ships or vehicles used to move stores and people. Movements refers to the function of planning and controlling the operation of transport. It is necessary to consider both movements and transport when looking at the total cost picture.

### Strategic Considerations

10. Since the tabling of the Defence White Paper by the Minister for Defence on 19 March 1987, much has been written on strategy, force structure and on the capabilities needed by the ADF to match the policy of the Government.

11. In any force structure development of the ADF, account must be taken of current strategic guidance. In this respect, when tabling the Defence White Paper, the Minister said:

'It is essential that we give priority to developing the capabilities we need to meet threats that could arise with little warning ahead of those which would take longer to emerge. The Government has carefully analysed the defence capabilities within our region including those of the Soviet Union.'

Two important assessments emerge. The first is that no regional power has the capability to mount a major attack on Australia. Such an attack is defined as one involving the seizure and occupation of a substantial portion of our territory. Secondly, that the capability to mount smaller scale - but still serious - military operations against us already exists in our region.

Our judgement that no regional country has the capability to mount a major attack on Australia is based on a rigorous assessment of the sort of military forces needed to mount such an attack and of the military capabilities available in the region.

A major attack on Australia would require a huge military effort backed by an extensive logistics system to sustain the attack. In particular, the forces required for a major assault on Australia go well beyond large-scale land forces. Major maritime forces would also be needed, involving large numbers of high capability ships and aircraft.

These forces do not now exist in this region, and could not be rapidly or secretly developed.

Likewise, our assessment of the possibility of low-level military action against our territory or interests is also based on the military capabilities in our region, and not on any expectation that our relations with regional countries will deteriorate to the point where they might be used.

"Low-level" refers to military threats less than major assault or invasion, including some very serious contingencies which would demand an urgent and substantial military response.

Threats such as mining of our major ports, attacks on our offshore territories or in our resource zone, the interception of our coastal trade and raids on vital northern installations and infrastructure could cause severe damage to our national interests.

12. Chapter 3 of the White Paper itself, deals with the priorities for force development. The two important sections dealing with pressure against Australia are paragraphs 3.13 and 3.23. These read:

'Summary Judgements

3.13. The possible time-scale attaching to the development of low level and escalated low level conflicts dictate that the ADF should be capable of countering them essentially from the force-in-being. The ADF should therefore be able to conduct such operations as maritime surveillance, interdiction and

## THE COSTS OF DEFENCE ROAD TRANSPORT

protection tasks, including mine countermeasures. There may be a need for offensive strike, especially against maritime targets. As noted previously, although constraints would apply to strike against land targets in the adversary's own territory, the ability to conduct such operations would allow an important option.

and

### Summary Judgements

3.23 In summary, the need to recognise that at some time in the future there could be a serious deterioration in our strategic circumstances means the ADF should contain a level of skills from which expansion to meet the developing threat could occur. As with lower levels of conflict, a priority concern would be to deny the adversary effective use of the sea and air gap. There would be a greater need for strike and other offensive measures against the adversary's military bases and infrastructure, and there would be an increased need for such protective capabilities as mine countermeasures, anti-submarine warfare, and air defence, especially around the bases from which our maritime operations were being conducted.'

13. Based on this strategic guidance, Defence movement and transport resources, in common with the other elements of the force, must be structured and equipped to be able to cope with the requirements of low level contingency situations that could arise at very short notice. These resources must also provide the basis for expansion should a serious deterioration in Australia's strategic circumstances occur.

### FACETS OF DEFENCE ROAD TRANSPORT

14. Defence satisfies its road transport requirements in a number of different ways, each of which has a specific cost which can be associated with it. In broad terms, the Defence road transport structure consists of a combination of:

- Defence owned transport resources;

# CHRISTOPHERSON

- transport resources hired from other Government departments or private contractors;
- transport resources leased from private contractors;
- transport 'services' provided by civilian transport organizations; and
- Defence uniformed and non-uniformed personnel involved in the transport function.

## Defence Owned Vehicles

15. A summary of the Defence owned vehicles and trailers operated by the ADF, is shown below:

### ADF OWNED ROAD TRANSPORT VEHICLES AND TRAILERS

VEHICLE TYPE	NAVY	ARMY	AIR FORCE	TOTALS
Cars and Station Wagons	296	945	432	1673
Utes, Panel Vans and Landrovers	170	3623	418	4211
Rigid Trucks	116	4421	296	4833
Prime Movers	9	125	28	162
Trailers	9	3667	233	3909
Buses (Less than 30 seats)	56	613	92	761
(More than 30 seats)	25	63	62	150
Other	12	85	1107	1204
TOTAL	693	13542	2668	16903

TABLE 1

## THE COSTS OF DEFENCE ROAD TRANSPORT

16. The resources listed in Table 1 represent a very significant capital investment - somewhere in the vicinity of \$600m - in vehicles and trailers that are procured and operated by the Defence Force. Most Federal Government departments, by comparison, do not procure their own vehicles and instead rely on the Department of Local Government and Administrative Services' (DOLGAS) Central Transport Authority (CTA) to provide vehicles on short or long term hire and vehicle with driver services. Defence is one of the few departments which, in respect of the ADF only, has its own procurement organization and which, in terms of CTA operation, has been categorized as an 'exempt' organization.

17. This exempt status recognises that there is a specific ADF requirement for dedicated military transport for operational, specialist, administrative and training purposes. It also recognises that the Services will continue to use the services of the CTA, on an individual task basis, for administration, passenger and road freight vehicle tasks over and above Service vehicle capacity.

18. Before discussing the procurement management procedures, a general comment on the types of vehicles in the Service fleets is appropriate. These fleets consist of a mix of operational and non-operational vehicles. Operational vehicles, which comprise some 52 percent of the ADF fleet, are those required to support forces in an operational area forward of points where civilian transport support could be expected to terminate. As such, they are designed to meet particular constraints of load, terrain, distance and climate. Although sometimes similar in appearance to their non-operational counterparts they are, in fact, much more expensive. For a semi-trailer project, the difference between the operational and non-operational versions can represent up to 14% in prime equipment costs and an additional 10% extra cost for a contingency reserve of the vehicles. Much of the additional prime equipment cost increase is in spare parts scaling (10%) and only about 3% is involved in the modifications required for operational purposes.

19. When operational capabilities are not required, Defence, whenever possible, uses standard commercial vehicles. These vehicles are generally used in the ADF within their design role and without significant modification. Although they may be fitted with accessories to meet specific Service needs, these do not compromise the ability to have these vehicles repaired and maintained by civilian organizations and in accordance with



manufacturers specifications. Modifications are generally able to be removed so as to restore the vehicles to their basic/original configuration when they are nominated for disposal.

20. The commercial vehicles are by and large procured through DOLGAS period contracts or other Federal, State or public sector contracts as part of the Commonwealth's overall requirements. In this way, significant cost advantages are obtained from bulk buying.

#### Acquisition of Defence Owned Road Transport

21. The procedure used to acquire Defence vehicles varies depending on the nature of the purchase. Procurement is classed as:

- Major Capital expenditure;
- Minor Capital expenditure; or
- Replacement expenditure.

22. Where new road transport proposals of the Services have Defence policy implications, a project investment cost of \$10m or more, have significant Joint Service implications or where the cost of an individual equipment is estimated at \$500,000 or more, the proposals are classed as Major Capital expenditure and subjected to a rigorous series of examinations which take into account:

- strategic guidance issued from time to time by the Defence Committee;
- the Defence Force capabilities paper which identifies present military and other capabilities, their limitations and the extent to which these capabilities should be developed or varied; and
- financial guidance representing the Government's endorsed levels of expenditure applied for planning and programming purposes.

## THE COSTS OF DEFENCE ROAD TRANSPORT

23. The major expenditure on operational road transport over the past decade has been for Army. During this time the whole of the Army fleet of operational road transport has been either replaced or earmarked for replacement in the near future. The costs of this extensive programme are:

- Introduction of the MACK 8 tonne truck - cost \$127m.
- Introduction of the MERCEDES BENZ 4 tonne truck - cost \$157m.
- Replacement of elements of the Army heavy vehicle fleet - cost approximately \$15m.
- Replacement of the Army light vehicle fleet - cost \$115m.

24. Road transport minor capital equipment proposals are processed for internal Service Office approval with systems established by each of the Chiefs of Materiel who are responsible for ensuring that items proposed for inclusion in Draft Estimates and the Five Year Development Programme (FYDP) bids conform to Defence policies. The FYDP is the long range financial planning forecast for the whole of the Defence requirements over the time frame stipulated.

25. In 1985/86, for example, expenditure by each of the Services on minor capital road transport acquisitions was:

- Navy \$0.174m;
- Army \$0.311m;
- Air Force \$2.879m;

26. The third category of acquisition is Replacement. Purchases of replacement equipment are effected in accordance with authorised stocking policies and directions. Bids are included in the FYDP and subsequently in annual estimates and are subject to scrutiny by the nominated finance co-ordinator who exercises a continuous surveillance over the progress of expenditure. In 1985/86, expenditure of each of the Services on replacement road transport equipment was:

CHRISTOPHERSON

- Navy \$1.446m
- Army \$4.235m
- Air Force \$5.169m

27. The actual costs of procurement are unlikely to be known by the line managers and accordingly do not feature as a major factor in the subsequent use of the vehicles. Furthermore it has not been the practice to include capital acquisition costs in the operating cost structure.

Repair and Maintenance

28. For the Services, the repair options range from using their own resources, using the resources of other Government departments such as DOLGAS or using civil industry. The allocation of workload between these resources depends on a number of factors in addition to cost. A prime consideration for Defence is the requirement to be able to sustain operations.

29. In determining for example whether Army vehicles should be repaired and maintained by the Army, the following considerations are taken into account:

- Are the vehicles critical to operations or the direct support of operations, and will they require Army maintenance support in Areas of Operations during conflicts?
- Are the vehicles identical or similar to other vehicles already maintained in the Army and is capacity available to cater for the additional tasks?
- Do the vehicles represent an area of technology in which the Army needs to maintain basic expertise necessary for expansion or against which to evaluate developments expected in future equipment?
- Do the vehicles require security which is not available in industry?
- Are the maintenance tasks commercially attractive to industry, and are industry costs acceptable?

## THE COSTS OF DEFENCE ROAD TRANSPORT

30. Whilst the application of such criteria has resulted in Army having significant in-house repair capabilities, Navy has very little. Navy vehicles are repaired and maintained by either civil contractors or by DOLGAS workshops. In the case of Air Force, maintenance and repair is carried out by contractors for commercial motor vehicles and by RAAF maintenance personnel for specialist motor transport.

31. In FY1985/86, repair expenditure on vehicles owned by the Services was as shown in the following table.

REPAIR EXPENDITURE FY1985/86

REPAIR CATEGORY	NAVY \$m	ARMY \$m	AIR FORCE \$m	TOTAL \$m
Trade Repair	1.009	15.457	1.8	18.266
In-House Repair	-	21.024	8.4	29.424
TOTAL	1.009	36.481	10.2	47.69

TABLE 2

### Disposal

32. The replacement of Service vehicles is determined by the availability of funds and the number of vehicles which qualify for disposal decisions. To ensure that replacement of vehicles is carried out at the least overall cost to the Commonwealth, replacement criteria have been established.

33. Current replacement criteria for non-operational commercial motor vehicles are:

## CHRISTOPHERSON

REPLACEMENT CRITERIA FOR COMMERCIAL MOTOR VEHICLES

Serial	Type	Planned Replacement(1)	
		Age (years)	Distance (km)
1.	Motor Scooters	3	-
2.	Motor Cycles - up to 400 cc - above 400 cc	3	-
		4	-
3.	Sedans Large and Intermediate	5	50,000
4.	All other Sedans and Stationwagons	3	60,000
5.	Carryalls	5	50,000
6.	Utilities Conventional	3	60,000
7.	Panel Vans Conventional	3	60,000
8.	Buses Small	5	80,000
9.	Buses Large and Coaches	8	300,000
10.	Ambulances	8	80,000
11.	Trucks Tip	8	80,000
12.	Trucks, up to 1.1/2 tonne(2)	5	100,000
13.	Trucks, over 1.1/2 tonne(2)	8	160,000
14.	Prime Movers/Truck Tractors	8	500,000

Notes

1. Vehicles are to be replaced when either of the above criteria is reached.

2. Includes heavy utilities, heavy panel vans and on/off road administrative vehicles.

TABLE 3

## THE COSTS OF DEFENCE ROAD TRANSPORT

34. The replacement criteria in Table 3 above do however only represent benchmarks for management. On occasions, the least overall cost to the Commonwealth may result from continued retention of vehicles. Other overriding factors such as constraints on expenditure may also necessitate retention of vehicles. Conversely, efficient fleet management may indicate early replacement due to accident damage, escalating repair and maintenance costs or excessive downtime.

35. Disposal of Defence vehicles is arranged by DOLGAS through scheduled motor auctions in various metropolitan centres. Although credits from the sale of these vehicles are not returned to Defence, they are taken into account by the Department of Finance when determining Defence outlays for subsequent procurement.

### Defence Hired Road Transport

36. In both the ADF and the Department, hire vehicles are obtained to meet administrative requirements. Defence however, does not hire operational vehicles.

37. Defence currently has on long term hire from DOLGAS some 857 vehicles of which 87% are located in civilian areas which do not have support structures capable of providing vehicle maintenance or which are remote from motor vehicle pools and maintenance facilities.

38. A summary of the disposition of these hire vehicles is as follows:

### SUMMARY OF VEHICLES IN DEFENCE ON LONG TERM HIRE FROM DOLGAS

Service/Organisation	No of Vehicles
<u>Services</u>	
Navy	NIL
Army	30
Air Force	59
Other ADF	19

Service/Organisation	No of Vehicles
<u>Department</u>	
Office of Defence Production	287
Defence Science & Technology Organisation	335
Other Department	126
<b>TOTAL</b>	<b>856</b>

TABLE 4

39. Whilst departments are required by Government direction to use the services of the CTA, a new factor has emerged recently as a result of DOLGAS not being allocated sufficient funds to purchase all of the additional hire vehicles requested by their client departments and agencies. To make up this vehicle shortfall, DOLGAS is leasing supplementary vehicles on a bulk and long term basis, from commercial sources, and will then hire them out to departments and agencies. The resultant hire costs are expected to fall somewhere in between the existing long and short term hire rates for vehicles owned by DOLGAS.

40. Responsibility for the establishment and control of vehicles within Defence is vested separately in the Chiefs of Staff of the Navy, Army and Air Force and in a nominated senior executive in each of the other organisations, such as the Defence Science and Technology Organisation, which make up Defence. As vehicle controllers, the task falls on them to establish entitlements and to initiate proposals and plans for the acquisition of road transport equipment and support.

41. Before road transport vehicles are hired on a long term basis, there is a requirement for vehicle controllers to be satisfied of the ongoing need for the vehicles and that, in financial terms, the intended uses of the vehicles could not be satisfied by short term hire vehicles, a series of short term hirings or by the use of a DOLGAS provided or arranged car or taxi. In other cases, the approval of the payment of Vehicle Allowance, for a member to use his own vehicle, may be more satisfactory.

## THE COSTS OF DEFENCE ROAD TRANSPORT

42. Vehicle controllers are also responsible for progressively reviewing past approvals for self drive hire vehicles. Vehicles which are no longer required are identified to DOLGAS State offices and in due course called in for reallocation or disposal.

43. The cost of hiring vehicles from DOLGAS in FY1985/86 was approximately \$3.95m.

### Defence Leased Transport

44. Defence also leases vehicles from industry. This step, taken in late 1986, is the first time Defence has gone into commercial style leasing and was only embarked upon after a series of extensive studies which examined various options of contracting to the private sector or outright purchase.

45. Under a three year lease the Army currently has a fleet of 18 VOLVO F12 prime movers and 36 HAULMARK trailers which are being used in line haul operations moving ADF freight around Australia. These vehicles replace a considerably larger number of 17 year old Diamond Reo prime movers and 34 foot trailers.

46. These leased prime movers and trailers are used in support of the Defence long distance road transport service - known as the ADF Line Haul Service (ADF LHS) which came into being on 1 December 1986. This service is run by Army on behalf of all the Services and the Department and was introduced after a very extensive study of the existing single Service and vehicle sourcing arrangements. The study showed that, in terms of direct financial input, the best method of meeting ADF requirements was through the retention of a Defence capability achieved through outright purchase of vehicles. This option ranked marginally ahead of leasing for two years and buying the leased vehicles which in turn, was marginally ahead of using the private sector discounted for excises and taxes.

47. Why, then, is Defence leasing vehicles? The answer is that emphasis has been placed on introducing the ADF LHS quickly. This could not be done with the aged Diamond Reo vehicles and it was therefore decided to lease vehicles now and make a decision on the long term acquisition problem at a later date. This approach in no way invalidates the various Defence studies which have shown that purchase is more economical than leasing over the period the vehicles could be expected to remain in service.



CHRISTOPHERSON

48. The cost of leasing these vehicles is \$1.17m per year.

Defence Use of Civil Road Transport

49. On the subject of Defence use of civilian transport, the Defence White Paper 1987 states that:

'5.17 Australia's civil transport assets will complement ADF resources in defence emergencies. Ground force operations would draw on the civil air transport fleet, with heavier items and replenishment stores being moved by road, rail, pipeline or sea. While sea transport is more efficient for bulk cargoes, improvements to the road system will reduce reliance on coastal shipping for many military stores.'

50. In recognition of this arrangement, negotiations are currently taking place between Defence and authorities in the public and private sectors of the road transport industry to determine and agree the arrangements necessary to facilitate use of the civilian transport resources in periods of Defence emergency and in the absence of the enactment of Defence legislation. In low level conflicts, it is unlikely that Defence powers such as requisitioning would be used. Instead normal hire, charter and tasking arrangements would be used, albeit with some dispatch and with agreed arrangements concerning insurance and indemnity.

51. Apart from the operational road transport requirements, there is also the task of satisfying the simple administrative and day-to-day needs of the Department and the ADF for the movement of equipment, stores and personnel. Wide use is made of the civil infrastructure where there is scope for reducing costs by using it for administrative activities.

52. The costs of obtaining civilian transport, be it from DOLGAS or private contractors, are met from two of the administrative expenses votes. They are the Travelling and Subsistence Vote (233-1-01) and the Freight and Cartage Vote (233-1-05). As the names imply, the first deals with personnel movement and the second with cargo movement. In FY 1985/86 expenditure relating to obtaining road transport in both votes was:

- a. 233-1-01 : \$10.5m.
- b. 233-1-05 : \$9.6m.

## THE COSTS OF DEFENCE ROAD TRANSPORT

53. One function not mentioned so far is that of removals. Defence is a major user of removalists' services and each year about 21,000 removals take place. In 1985/86 for example, there were 21724 Defence removals. DOLGAS arranges the removals and the Defence share of the DOLGAS removals expenditure in 1985/86 was \$49.408m. This is a very significant expenditure and represents 80% of Commonwealth removals spending.

### Defence Transport Personnel

54. So far this paper has concerned itself with vehicles and the costs associated with vehicles. Although such costs in Defence are significant, they are generally comparable with the costs a commercial organization would incur operating at a similar level. There are however, some differences and these will be discussed later.

55. It is in the transport personnel area that the military and civilian costs do show some divergence. As the table below indicates, there are a relatively large number of uniformed supervisors and drivers in the ADF.

DEFENCE TRANSPORT PERSONNEL

	NAVY	ARMY	AIR FORCE	OTHER DEFENCE	TOTAL
<u>1. Drivers</u>					
Servicemen	10	1604	430	NIL	2044
Servicewoman	65	179	37	NIL	281
Civilian	82	27	5	29	143
<u>2. Supervisors</u>					
Servicemen	9	155	72	NIL	236
Servicewomen	9	5	2	NIL	16
Civilian	4	NIL	NIL	NIL	4

TABLE 5

56. Whereas the Department has few drivers and has embraced a self-drive philosophy, the Services have, of necessity, retained their drivers for operational support and for those administrative functions where it is clearly not practical to expect a self-drive approach to be used. In determining the number of drivers and supervisors to be retained within the Services, the following factors are taken into account:

- Peace-time activity is primarily directed to training for war. The Defence Force has to be so manned that appropriate training can be conducted in order to meet peace-time tasks, short lead time contingencies and expansion requirements.
- The Services' transport personnel, in addition and complementary to their driving duties, are trained to carry out a wider range of military duties.
- There are a number of military tasks even in base areas for which, by reason of security or training, civilian drivers and vehicles are unsuited.
- In many areas where military forces are located or are likely to be deployed, CTA resources are either non-existent or are not adequate.
- The Services must be able to sustain essential operations in peace-time during periods of disruption to the civilian road transport system.
- The Services must be able to react immediately to emergency situations which will often necessitate preparation, pre-positioning and other action well in advance of emergency regulations or directions being issued.

57. The point made in the second of the sub-paragraphs above needs emphasis. Uniformed Service drivers do receive broader training than their civilian counterparts both in terms of their trade and their general military duties. Like all training, this has a price tag both in monetary terms and in the availability of the individual for driving duties.

58. It may be of interest to establish the profile of the typical Army male driver. Recruits enlist in the Army for a three or six year engagement and go to 1 Recruit Training Battalion at Kapooka, NSW for initial training. After recruit

## THE COSTS OF DEFENCE ROAD TRANSPORT

training they are allocated to Corps. Those identified for employment in the driver trade are about 19 years of age and are sent on to the Army School of Transport where they do a 36 day basic driving course which gives them a trade qualification. The course includes training on vehicles up to 4 tonne UNIMOG. After qualifying as drivers, the soldiers are posted to a field unit where they would remain for the first three years. In that time they would qualify on the 8 tonne MACK and would undergo further general military training including a great deal of time on exercise.

59. After the initial three years the soldier, if he re-engages or initially signed on for six years, is posted to an administrative unit. In this category he is prepared for promotion. By the end of six years about 50% of male drivers leave or have already left the service. Those who remain are then considered for further promotion and generally return initially to field duties.

60. The service woman is restricted to administrative driving duties and, that apart, follows the same basic career path as the male soldier.

### Summary of Costs

61. Before going on to the Defence cost management measures, current and proposed, it is appropriate to draw together the diverse elements that together constitute the cost of Defence road transport. As this paper has indicated, the relevant costs, not including fuel, tyres and accident costs, are:

a.	<u>Equipment Costs</u>	<u>\$M</u>
(1)	An inventory of 12994 vehicles and 3909 trailers valued at .....	600.00
(2)	A leased fleet of 18 vehicles with an annual leasing cost of.....	1.17
(3)	A vehicle procurement bill in FY 1985/86 of .....	70.77
(4)	A vehicle repair and maintenance bill in FY 85/86 of .....	47.69

CHRISTOPHERSON

(5) An annual expenditure on non-Service  
passenger and freight services of ..... 20.10

(6) A removals bill  
in FY 1985/86 of ..... 49.40

b. Manpower Costs

(1) An annual manpower cost, including  
overheads in the order of ..... 135.00

62. When these elements are put together, the cost of Defence transport can be broadly summarised as a capital investment in inventory of \$600m and an annual recurring cost of about \$325m. Thus road transport costs represent nearly 5% of the Defence budget outlay of \$6,674m.

63. Such a large investment requires the application of specific management methods. The remainder of this paper deals with Defence management of its transport fleet. However, before turning to this aspect, it is pertinent to examine just how and why civilian and military operations are different.

COMPARISON BETWEEN CIVILIAN AND MILITARY TRANSPORT OPERATIONS

64. When comparing the costs of civilian road transport operations with Defence road transport operations, it must be recognised that there are a number of differences in the nature of the two. On the surface, it could appear that both are involved in similar tasks with similar vehicles and similar loads. It would be quite wrong however to adopt this view.

65. It has already been mentioned that Defence relies significantly on the civilian transport infrastructure and that it expends considerable sums of money annually from the Travelling and Subsistence, Freight and Cartage and removals related votes on purchasing this transport support. It has also been mentioned that Defence has a large commercial vehicle fleet and a sizable commercial hire fleet. In these respects it duplicates civilian operations and costs.

66. The differences in cost emerge from the requirement placed on major elements of the road transport resources to be able to deploy and support operational forces in accordance with the directions of the Government of the day.

## THE COSTS OF DEFENCE ROAD TRANSPORT

67. There is very little difference between the administrative operation of vehicles in either civilian or military organisations. Theoretically the same sort of utilization criteria apply and, if these are not met, the vehicle should either not be provided or should be disposed of. With operational vehicles however, utilization is not the prime factor - operational readiness is far more important. In fact, it is accepted that expensive operational (General Service) vehicles should not achieve high utilization rates in non-operational periods but should be used sparingly to allow them to be maintained at a high degree of readiness.

68. Moreover operational vehicles must be there to allow Defence units to deploy and carry out their operational role. They are usually maintained in service well beyond the life-of-type of a similar administrative vehicle and so must be confined to training tasks appropriate to their role. This in turn presents not only a difference in vehicle management methods but also a requirement for different vehicle data recording systems.

### ROAD TRANSPORT COST MANAGEMENT IN DEFENCE

69. Because of the varying responsibilities of the different areas of the Defence organisation, cost management of the road transport function reaches into almost every area of Defence. As cost management cannot be made the responsibility of any single part of the organisation, this in turn makes the introduction of comprehensive cost management measures very difficult. A further and recent complication is the Government wide programme to simplify procedures and reduce costs. This has had the side-effect of making the introduction of new administrative procedures, and documentation, very unwelcome.

70. Within the ADF, road transport cost measures have been tailored to supply aspects, and specifically to the acquisition and disposal areas, rather than to transport aspects. Those Service management systems that do exist in the day-to-day environment are more concerned with the control of the use of transport than with the performance and utilization of transport on authorized tasks. There are a number of reasons for this approach, the two major ones being:

the complex acquisition processes which make it difficult for a fleet operator to use performance reports to influence day-to-day changes in fleet size or type; and

CHRISTOPHERSON

- the establishment (organisational) procedures which set the entitlement for General Service vehicles on criteria related to units' roles in war rather than against peacetime usage factors.

71. By way of example, all the Services have detailed inventory control systems for managing procurement, accounting for and disposal of principal items including vehicles. An example is Army's PISCES (Principal Item Supply Control Entitlement System) which indicates the quantity and condition of items held and identifies shortfalls against given entitlements to control the acquisition of new capital or replacement items. This system is structured to operate against the disposal criteria mentioned earlier and is not reactive to any short term trends that may become evident in the performance of specific vehicles or classes of vehicles.

72. Similarly, Army has a maintenance system, supported by EDP, which is used to record data on manhours and contract repair costs for vehicles put out for trade repair. This system can provide a degree of detail on vehicle utilization, but from the rather negative aspect of vehicle down time.

73. The approval of new vehicle entitlements or transport personnel manning levels in any Service is a protracted and arduous process because of the manpower and financial constraints that have been inherent in the Defence system for the past decade. New major equipment programmes cost a great deal of money and this reduces the amounts available for normal administrative expenditure. Each Service has a very comprehensive vetting system to ensure any requests for new vehicles are justified. In Army this usually means offering suitable compensators from elsewhere in the system.

74. To summarize so far, there are in existence cost management systems to control supply and maintenance systems and to ensure that only essential vehicle assets are provided but these are generally not based on day-to-day operating data. This leads logically to the question: what type of performance recording systems are in place?

75. The ADF fleet which operates most like a commercial transport organization is the Army's administrative fleet operated by the Royal Australian Corps of Transport in Logistic Command. There are about 600 of these vehicles and they are all controlled by a transport monitoring system call TMIS (Transport Management Information System). This system is EDP supported and provides comprehensive detail on vehicle operations in terms of

## THE COSTS OF DEFENCE ROAD TRANSPORT

distance travelled, loads carried, waiting and idle time and down time (maintenance/workshop repairs). It also provides a day-to-day picture of driver performance against the requirement for 6.5 hours driving per day. The system produces reports at three different management levels and may be used to adjust manning or driver levels, but not usually as a matter of course.

76. Apart from TMIS, the other Army systems, as for Navy and Air Force, are designed to record vehicle distances, fuel and lubricant issues and to list the name of the authorized operators against particular tasks. These details satisfy the strict accounting requirements but do not provide the basis for any more detailed assessment of vehicle utilization.

77. This is a problem that has concerned Service transport managers for a number of years. Is it sufficient to have full vehicle management systems in place only for those vehicles which operate in a commercial fashion, and to control the remainder of the fleet by other means? What benefits would accrue from imposing a further data recording system on operational units whose vehicles are provided against a completely different criteria to that applying in the civilian world? And where would the EDP resources come from to make any such additional system manageable?

78. There is no clear answer to these and a number of other related questions. Essentially it is quite unproductive to try to impose TMIS accounting on operational units especially in the absence of EDP support. But the bare minima of data being collected at present may not be sufficient to provide a proper picture of vehicle performance. Certainly more emphasis needs to be given to the need to interrelate supply, maintenance and performance data.

79. Defence Movement and Transport Branch has been grappling with this matter for some time and, in conjunction with the Services, is looking for improvements in our present systems. However the bottom line must still be some tangible benefit resulting from such improvements. Given our present structure, this tangible benefit is proving somewhat illusive.

### CONCLUSION

80. The aim of this paper has been to identify the costs associated with the operation of some 14000 Defence vehicles and to address the cost management procedures employed in the ADF and



the Department. In doing so, the complex structure of the organisation has been highlighted and the difficulty of introducing cost management measures used in civilian operations has been discussed.

81. In the long run the reason for having a defence force is to deter aggression and to resist it if it occurs. This requires a degree of readiness that does not lend itself easily to a cost accountant's scrutiny. To operational units, their vehicles are as essential as their guns and their ammunition because, without mobility, forces simply don't function.

82. The costs of Defence road transport are, of course, borne directly by the taxpayer and, as this paper has shown, represent a significant ongoing annual expenditure. Defence is conscious of this impost and of its responsibility to ensure that taxpayers money is wisely spent. The purpose of the various road transport cost management systems in Defence is to do just that. To this end, such systems will continue to be reviewed, improved and where necessary created.