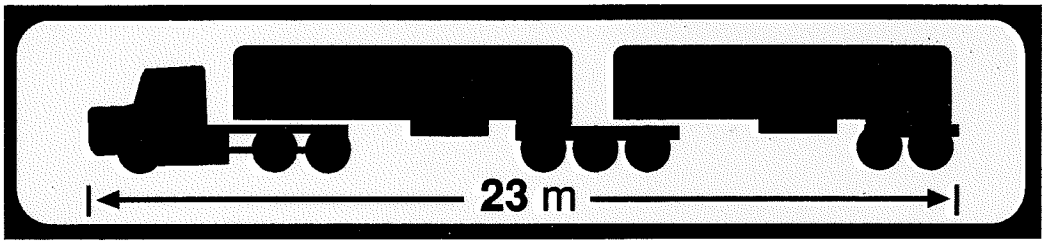
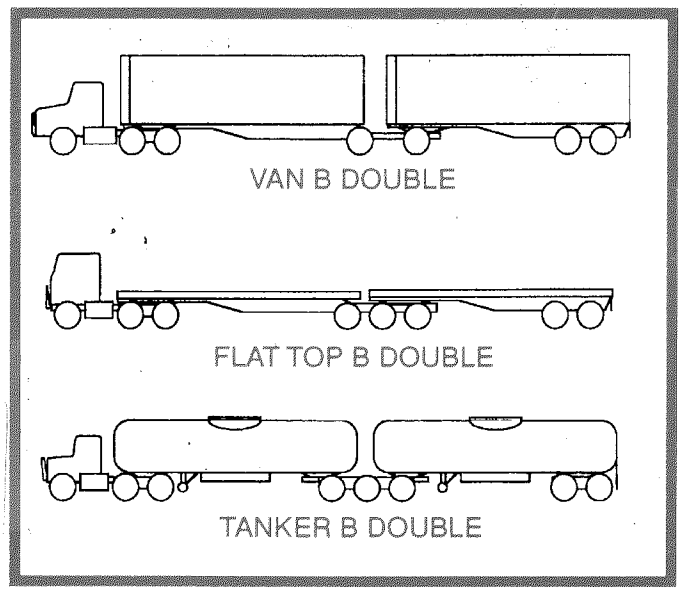
Staysafe 16

PARLIAMENT OF NEW SOUTH WALES JOINT STANDING COMMITTEE ON ROAD SAFETY

CONCERNING



B - DOUBLES

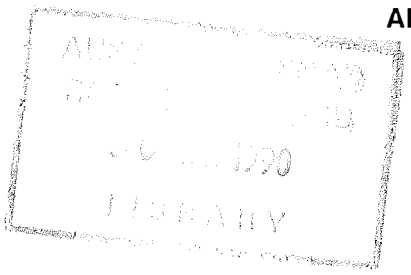


Staysafe 16

From the
Joint Standing Committee
Upon
Road Safety

B-Doubles

APRIL 1990



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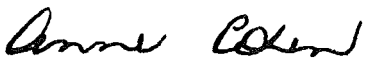
ACKNOWLEDGMENTS

On behalf of STAYSAFE I am pleased to acknowledge the contribution to this report of the information gathered by the previous STAYSAFE Committee, as it existed in 1986 and 1987 when inquiries into heavy vehicle safety got underway.

STAYSAFE has been greatly assisted by submissions, formal evidence, and advice from dozens of concerned people, including officials, vehicle owners, drivers, and representatives of concerned groups. We particularly thank those who invited us to experience B-Double travel, and to observe heavy vehicle operations.

Finally, STAYSAFE thanks its small but highly effective Secretariat; Technical Adviser, Brian Vazey, Committee Clerk, James Kelly and Stenographer Vanessa Lovett, for their excellent support. We also thank the staff of Hansard and other Parliamentary staff for their diligent assistance.



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Chairman.

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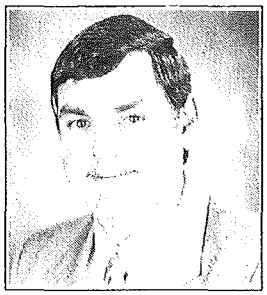

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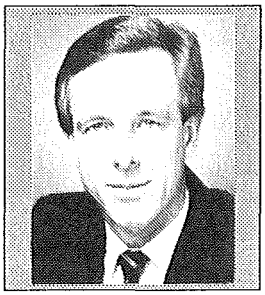

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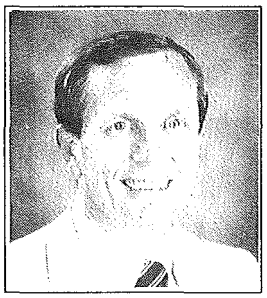

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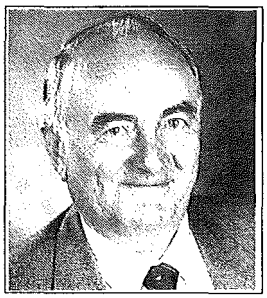

The Hon.
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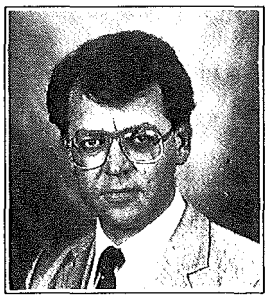
M.L.C.

The Hon.
Beryl A. Evans,
M.L.C.



The Hon.
Dr Brian P.V. Pezzutti
M.L.C.

FOREWORD

In the current climate of concern about heavy vehicle crashes, it is surprising that more has not been made of a readily available opportunity to greatly reduce truck disasters. The opportunity is a new breed of truck, the B-Doubles, 106 of which are now approved to ply selected NSW roads.

B-Doubles have tighter vehicle specifications than ordinary trucks. (They are required to be speed limited, carry vehicle monitors, have spray suppression equipment, and have suitably powerful engines and suitably strong turntables and kingpins. Anti-skid braking and rear under-ride guards are prescribed in draft guidelines proposed by the Roads and Traffic Authority (RTA)). Their drivers are to be subject to more stringent training and accreditation procedures, and they are prohibited from main roads in the Sydney metropolitan area in the direction of, and during, peak traffic periods.

The freight of 3 articulated trucks can be carried on 2 B-Doubles, potentially reducing crash involvements by almost 1/3.

Thus far, B-Doubles have clocked up an enviable crash involvement record; around 1/5 to 1/10 of that recorded for articulated trucks, in NSW.

B-Doubles promise economic as well as safety benefits for NSW provided that they are held to the much more stringent conditions which have been developed for them.

It is the violation of this proviso which has given STAYSAFE most concern, and which perhaps has triggered some public opposition.

STAYSAFE accepts B-Doubles as satisfactory vehicles on our high standard freeways, and on those lightly trafficked roads which have ample lane widths and continuous overtaking opportunities. Vehicle length is

rarely of any consequence on these roads, and B-Doubles readily keep up with most traffic.

STAYSAFE was disturbed to discover that there had been many violations of the conditions agreed to by a working party as desirable for B-Doubles. RTA Officers repetitively used the presence of articulated trucks as justification for allowing B-Doubles on roads. STAYSAFE does not accept this justification. The standards entrenched for articulated trucks are not satisfactory; the higher standards agreed for B-Doubles need to be implemented.

STAYSAFE sees the regional staff of the RTA as having parochial and short-term objectives which make them unsuitable judges of when B-Double Guidelines should be violated. If we want B-Double operations to be as safe as is appropriate (rather than as safe as the worst articulated truck operations), Regional Directors must be regulated, not just *"guided"*. STAYSAFE also has drawn attention in this report to the necessity for the RTA to establish and audit surveillance systems designed to ensure the effectiveness of tachographs, driver accreditation, and other safety measures largely delegated to the industry.

There is an opportunity, through B-Doubles, to work towards greatly improved heavy vehicle safety in NSW. We must not let this opportunity slip by.

Anne Cohen

(Mrs.) Anne Cohen M.P.,
Chairman.

1. INTRODUCTION

1.1 DEFINITION

1.1.1 A B-Double is, in essence, an articulated truck with an additional semi-trailer coupled through a turntable on the back of the first semi-trailer. It features "*fifth wheel*" connections between the prime mover and first trailer and also between the first and second trailer.

1.2 METHOD OF INQUIRY

1.2.1 B-Doubles were among the matters raised in some 155 submissions received by STAYSAFE in 1986 and 1987. These submissions about heavy vehicles, and the testimony of witnesses which related to B-Doubles, became part of the body of information reviewed by STAYSAFE for this report.

1.2.2 STAYSAFE members also examined industry, government and community witnesses in February 1989, and again examined witnesses in March 1990. Australian and International reports on B-Doubles were examined, experts were visited and corresponded with, and discussions were held with truck operators. A demonstration of B-Doubles was observed, and the Committee's Chairman and Technical Adviser travelled overnight from Sydney to Brisbane on a B-Double. An examination was made of B-Double routes around Sydney, and a B-Double was followed along urban roads with narrow lanes.

1.3 VEHICLE LIMITS: TRADE-OFFS

1.3.1 The size of vehicles, to be permitted on NSW roads, has important effects on the cost of transport, and hence on our international competitiveness and well-being. The National Association of Australian State Road Authorities (NAASRA, 1987) attributed 8 to 10 percent of total industry costs to domestic transport. Benefits of the

order of $200 million/year were claimed by NAASRA (1985) to be available in Australia through widespread use of the larger B-Double trucks which this report addresses.

1.3.2 While we, as a community, stand to save substantial operating costs as larger vehicles are allowed, we may also incur additional road construction and maintenance costs, possible extra crash losses and possible extra traffic obstructions.

1.3.3 Extensive reviews of these trade-offs between operating costs and other community costs have been organised by NAASRA. Recommendations from the most recent of these reviews (NAASRA, 1985) led to normal articulated semi-trailers being permitted to reach 17.5 m length, with a fully loaded mass of 42.5 tonnes.

1.3.4 It has been foreshadowed (Pearson and Ogden, 1989) that further increases in mass limits will be economically justifiable, but that such increases "*must generally be modest in line with the gradual upgrading of the road system*". Pearson and Ogden drew attention to the limited capacity of the community to provide infrastructure to carry increased loads.

1.3.5 STAYSAFE, whilst acknowledging the importance of productivity, is suspicious of decisions which nibble away at safety margins built into road systems. Such a process, unchecked, will inevitably lead to vehicles increasing in size until they become conspicuously too large. Of particular concern is the mandating, in the USA, of access to interstate and other highways for vehicles 150 mm wider than were previously allowed (that is 2.55 instead of 2.4 m wide).

1.3.6 This must surely be at the expense of the safety margin, judged by other experts who designed the roads, to have been desirable between heavy vehicles passing one another.

1.3.7 An argument, presented in a recent report of the US Transportation Research Board's Committee for Truck Access Study, was

that no major adverse impact in safety was observed during tests of increases from 2.4 to 2.55 m width (TRB, 1989, p 139). However, the same Committee observed (TRB, 1989, p 8) that *"it is difficult to document the adverse effects of small increments in vehicle size on safety and traffic operations and to identify all of the relevant costs which are implicit in a change in vehicle size regulations."*

1.3.8 STAYSAFE considers that it is not realistic to place the onus on administrators to prove that slightly larger vehicles would be harmful. Rather, the onus needs to be on those arguing for larger vehicles to provide convincing evidence that their vehicles will be at least as safe overall as the vehicles they replace.

1.4 OPPORTUNITY

1.4.1 One opportunity for realising some of the additional benefits of heavier vehicles, without greatly increasing infrastructure costs, accidents or obstructions, is to carry the additional weight on longer vehicles with more axles. It is necessary, though, to limit those vehicles to roads where vehicle length is of little significance.

1.4.2 This opportunity was long ago seized upon for outback roads. Road trains, up to 35 m in length, are common in the more remote areas of Australia. Some as long as 50 m have been operated (Pearson, 1988). Roads with extremely low traffic densities, few hills, few intersections, and gradual bends, apparently accommodate these huge vehicles without great problems.

1.4.3 In recent years, some high standard divided roads have been constructed in the dense traffic regions of Australia. With their gradual curves, continuous overtaking opportunities, wide lanes, and few intersections, they appear to present much scope for vehicles, substantially longer than ordinary articulated trucks, to travel without endangering or impeding other traffic.

1.4.4 Traffic authorities across Australia have responded to these opportunities by allowing, under individual permit, and on tightly specified routes, the new class of vehicle known as B-Doubles.

1.5 SAFETY FEATURES OF B-DOUBLES

1.5.1 The fifth wheel connections between the three parts of B-Doubles give them great resistance against rolling over, as the vehicle can only roll over as a whole. Furthermore, on cornering, this becomes a little like rolling a rigid "C" shaped vehicle. In lane changing, the roll forces strike different parts of the rig at different times, giving superior dynamic stability, according to research conducted by the Australian Road Research Board. (Sweatman and Tso, 1988).

1.5.2 B-Doubles in NSW may be allowed 23 m of length, and 59 tonnes total mass. The two trailers are required to each be shorter than are trailers on most normal articulated vehicles, so that the vehicles sweep paths little wider than do normal articulated trucks, on moderate curves.

1.5.3 The larger carrying capacity of B-Doubles allows them to carry a given quantity of freight with fewer trips than is necessary with normal articulated trucks. It has been claimed that these fewer trips bring safety benefits which more than cancel out any additional hazard brought by the larger length and mass of the vehicles.

1.5.4 The larger overall length of B-Doubles has been seen as having potential to endanger road users as B-Doubles take longer to clear intersections, longer to overtake, and longer to be overtaken. These potential problems may largely be averted by prescribing suitable engine power, and by restricting B-Doubles to intersections and roads where long acceleration and overtaking times are unimportant.

1.5.5. Concern was expressed to STAYSAFE that heavier vehicles might inflict even greater damage on cars when they collide. In fact, the

laws of motion predict that the damage to a car, and its occupants, in a head-on collision with a fully loaded B-Double, would be little different to that when colliding with a fully loaded articulated truck, at the same speeds.

1.5.6 Windage effects, and obstruction to view, are other problems drawn to STAYSAFE's attention. STAYSAFE was not convinced that these problems would be substantially worse with B-Doubles than with other legal road vehicles.

1.5.7 Special specifications for turntables, brakes, tracking, spray suppression, driver experience, and routes, are believed to be already giving safety benefits with B-Doubles.

1.6 SAFETY RECORD OF B-DOUBLES

1.6.1 The first Australian State to have B-Doubles operating was Western Australia, in 1983. Following an 18 month trial, they were introduced into NSW during 1988. The NSW trial was criticised by some who made representations to STAYSAFE, with claims that the trial was unrepresentative of how B-Doubles will eventually operate. Exceptional care was apparently taken to minimise any possible hazards.

1.6.2 As is argued, below, it is not feasible to obtain, from any limited trial, a definitive measure of the safety of B-Doubles. STAYSAFE considers the careful trial to have been quite appropriate, and congratulates the Working Party which oversighted both the trial, and the development of guidelines, for its careful progress, and for the evident high level of consultation with interested parties.

1.6.3 According to Pearson and Ogden, 1989, B-Doubles across Australia had been involved in one casualty crash during their first 20 million kilometres of travel. This was 10 times better than the average of 1 casualty crash for every 2 million kilometres of travel by ordinary articulated trucks in NSW (from statistics in RTA, 1989).

1.6.4 STAYSAFE wrote to each of the road traffic authorities within mainland Australia, seeking statistics about B-Doubles travel and crashes. (B-Doubles are not permitted in Tasmania). Responses were received from all mainland States and Territories. In most cases, respondents advised that B-Double crashes were not readily identified within their recording systems.

1.6.5 An exception was NSW (Dobinson, 1990) where 106 permits were on issue (compared with "*about 50*" at 30 June 1989, and "*about 7*" on issue at 30 June 1988). Mr Dobinson advised of one only recorded crash involving a B-Double. A suspension failure led to loss of control and roll-over. The driver was injured. A second incident, involving a trailer detachment, was advised by Mr Dobinson. There was no injury, and no need for vehicle towaway, so the incident did not count as a "*recorded crash*" under NSW recording criteria.

1.6.6 Mr Dobinson estimated 200 000 km of travel per B-Double. Total B-Double travel in NSW has probably been of the order of 200 000 x (7 + 50) or about 12,000,000 km. Ordinary articulated trucks average about 6 casualty crashes in this distance, according to statistics in RTA, 1989.

1.6.7 Queensland advised of 145 B-Doubles permitted at 30 June 1989. While their coding system did not identify B-Doubles readily, 1 fatal and 4 other crashes had been noted as having involved B-Doubles. The B-Double was blamed in two of the non-fatal crashes.

1.6.8 Victoria advised of 4 B-Doubles, and one minor crash involving a utility failing to give way to a B-Double at a roundabout.

1.6.9 Western Australia advised of 110 permits at December 1989, with crashes unknown. South Australia advised of about 80 permits at 6 February 1990, no fatal crashes and, to the best of their knowledge, one B-double crash involving hospital admission. They advised of no data on less serious crashes. Northern Territory had 6 B-Doubles operating, and had no awareness of any crash. ACT advised of no record of B-

Double crashes on their roads.

1.6.10 At a recent conference in Canada, Sparkes and Horosko, 1989, discussed some of the problems which arise when crash rates for different kinds of vehicle are compared. They compared crashes per km for trucks with one trailer and trucks with two trailers, for fleets operated by several large companies. Opposite results were obtained as the analysts went from fleet to fleet. Different types of vehicles were being used for different kinds of work with wide ranging patterns of hazard within these fleets. Such uncontrolled natural experiments seldom lead to unequivocal conclusions about relative safety.

1.6.11 Further, Sparks, Horosko and Smith, 1988, had earlier calculated that 1 to 2 billion km of travel would be needed to detect a 10 to 20% safety difference, and concluded that such a sample "*could not be reasonably assembled in Canada*".

1.6.12 We may never really know how B-Doubles and normal articulated trucks compare, in terms of accidents/km under identical conditions.

1.6.13 Far from demonstrating B-Doubles to be 10 times safer than articulated trucks, the comparison in paragraph 1.6.3 probably indicates the capabilities of the Australian transport industry when it takes care to ensure high standards of vehicle roadworthiness, of driver behaviour, and when high standard or lightly trafficked roads are used almost exclusively.

1.7 OTHER VERY LARGE TRUCKS

1.7.1 In the USA, the Surface Transportation Assistance Act of 1982 provided for a range of larger trucks to be allowed on designated roadways, including wide trucks, articulated trucks much longer than those permitted in Australia, and various kinds of double articulated vehicles (TRB, 1989). Some of the double articulated trucks, permitted

In the USA, have been shown (Sweatman and Tso, 1988) to have inferior rollover stability to the B-Doubles now being allowed in New South Wales.

1.7.2 STAYSAFE compliments NAASRA, and the NSW Transport Administration, for recognising the safety and economy advantages of B-Doubles, and for insisting that extra large trucks adopt the B-Double configuration.

1.7.3 STAYSAFE is nevertheless concerned that safety not be degraded as B-Doubles are introduced. All reasonable safety opportunities need to be grasped and B-Doubles need to be firmly held to roads which are compatible with them.

1.8 STAYSAFE CONCERNS

1.8.1 As has already been mentioned, STAYSAFE sees efficient road transport in NSW as of great importance, and supports the grasping of opportunities to improve efficiency where this is done without overall loss of safety. The economic arguments for B-Doubles to be allowed on suitable roads are, indeed, compelling.

1.8.2 However, there are four matters of particular concern. The first concern is the selection of routes. Is it being done as well as it should be, in NSW?

1.8.3 The second concern is that every opportunity be taken to negotiate greatly improved safety standards, as the B-Double concession is introduced. STAYSAFE sees many ways in which heavy vehicle operations in NSW need to be improved. The industry has exhibited support for improvements in exchange for the right to operate B-Doubles. This negotiation opportunity, to have the B-Double fleet perform to high standards of safety, must not be wasted.

1.8.4 A third concern is the commitment of the NSW Roads and Traffic Authority (RTA) to adequate supervision of B-Double operations.

1.8.5 **STAYSAFE's fourth concern is that the fears of citizens, about these *"even larger"* trucks, be responded to with adequate information. The safety benefits of B-Doubles need to be explained so that community groups are insisting upon them, instead of decrying them. Public opposition to larger trucks has to be expected, and accepted as a reason for disallowing B-Doubles on *"sensitive"* routes, when inadequate efforts are being made to explain why B-Doubles are desirable.**

1.8.6 **This report deals with these four concerns.**

2. ROUTE SELECTION

2.1 PERMITS

2.1.1 According to draft Guidelines for the operation of B-Doubles (RTA, 1989 {a}), B-Doubles are permitted to operate in the remote western areas of NSW where road trains are permitted. Generally, this area comprises the portion of N.S.W. that is north west of Walgett, Byrock, Nyngan, Cobar, Ivanhoe and Wentworth.

2.1.2 Outside of the road train areas, B-Doubles are permitted only on designated routes between specific terminals and/or state borders.

2.1.3 Permits are issued by the Rosebery office of the Roads and Traffic Authority (RTA) after operators have obtained approvals from those regional RTA offices and local councils which have responsibility for roads on the proposed route. Operators are required to furnish details of the proposed use of the B-Double, including timetables, trip frequencies, type of load, and axle loads, to the Rosebery office. Also required is an inspection of the B-Double to be used.

2.2 INTERIM GUIDELINES

2.2.1 The RTA regions, and local councils, have, since July 1988, had Interim Guidelines (TA, 1988) on which to base their assessments of the suitability of routes.

2.2.2 These Guidelines included detailed suggestions that B-Doubles only be approved on roads where lanes were at least 3.0 m wide, where lane changing was rarely needed, and where intersection controls and designs could accommodate the longer vehicles without difficulty. They also suggested that B-Doubles not be permitted on lanes carrying more than 800 vehicles per hour, or past schools on minor roads during peak school hours.

2.3 GUIDELINES IGNORED

2.3.1 As STAYSAFE inquired into route approvals, it quickly became clear that approvals were being given for many roads which fell far short of the Guidelines.

2.3.2 A prime example was the route from Port Botany to Rockdale through General Holmes Drive, Grand Parade, Ramsgate Rd or Bay St, and Princess Highway (No longer approved). Other examples included narrow lanes on Liverpool, Woodville, and Parramatta Roads.

Figure 1: B-Double barely able to fit within a lane.

2.3.3 STAYSAFE members were amazed that Ramsgate Road or Bay Street, well short of the standards recommended in the Interim Guidelines, had been approved. There was further concern as telephoned inquiries indicated that the recommending officer had not sighted the Interim Guidelines at the time of approval.

2.3.4 Subsequent formal advice (Wolfe, 1989) stated that the approval had been delegated to a Supervisory Engineer within a Divisional Office to whom the Guidelines had *"been available"*.

2.3.5 The standing of the Guidelines, in the mind of RTA's Director of Operations, Peter Wolfe, is revealed in the following paragraphs from his response to STAYSAFE questions.

> *"I should stress that the Interim Guidelines were never intended to be the ultimate determinant in selecting suitable routes. While they certainly contain a number of specific requirements, it was known from the start that local knowledge of actual road conditions would play a significant part in route authorisations."*
>
> *"For the above reason, the Regional Managers, who are very senior engineers with long experience in the RTA, are well placed to make objective and professional decisions about the suitability or otherwise of proposed routes. Of course, they do not personally undertake the investigations, but rely on the advice of their senior line managers in the areas concerned".*
>
> from Wolfe, 1989.

2.3.6 STAYSAFE was not convinced that Regional Managers (now Regional Directors) should be completely free to decide where B-Doubles should travel. Mr Wolfe was invited to appear before STAYSAFE to discuss the reply, but sent less senior officers, instead.

2.3.7 The National Roads and Motorists Association (NRMA) advocated in a submission to STAYSAFE that a specialist group within the RTA assume responsibility for approving B-Double routes, but this was opposed by Wolfe, who claimed local knowledge to be essential to the task.

2.3.8 STAYSAFE received strong criticism of particular approvals when representatives of the NRMA appeared before the Committee. The

NRMA officers undertook to supply details of their misgivings about specific route approvals.

2.3.9 The body of a subsequent NRMA report on urban B-Double routes is copied at Appendix A. The report describes further instances of routes failing to meet the recommendations within the Interim Guidelines.

2.4 EXCLUDE B-DOUBLES FROM BUILT UP AREAS?

2.4.1 STAYSAFE queried with RTA executives whether it would be cost-effective for B-Doubles to be separated into two units when they came to the end of suitable roads. A specialist commercial operation, to tow rear trailers from depots suitably located on the outskirts of Sydney, to depots within Sydney, appeared worthy of consideration.

2.4.2 The following is an extract from the reply from Mr Ken Dobinson, RTA's Director Strategy.

> *"Finally, a ban on B-Doubles in the Sydney metropolitan area could mean that many companies which currently operate into Sydney would cease their B-Double operations in NSW. It is likely to be uneconomic to uncouple B-Doubles on the outskirts of Sydney and take the trailer units in separately. For example, I would not expect the Shell Oil Company to be coupling and uncoupling petrol tankers at, say Casula, for their Hume Highway operations. My officers are seeking further information on the economic consequences of such a ban by consultation with the operators concerned."*

from Dobinson,1989.

2.4.3 STAYSAFE requested and received further advice from Mr Dobinson to the effect that transportation costs of goods presently conveyed by B-Doubles would increase by 20 to 30% if normal articulated trucks were used, that diesel fuel would increase in cost by 0.75 cents

per litre, and that an extra 1.7 million km/year would be required of oil industry vehicles. A 25% increase in transportation costs and an extra 1.7 million km travel by the oil industry fleet were also estimated by an oil company representative (Roberts, 1989).

2.4.4 Mr W. H. Close, Executive Director of Energy Resources for TNT Limited, has described (Close, 1988) how Comet Overnight Express anticipated that it would be worthwhile to run as an articulated truck from the inner Sydney suburb of Alexandria to outer suburb Prospect. A second trailer, pre-loaded at Prospect, was then to be coupled, and the unit was to proceed to Canberra as a B-Double on a suitable route. He has subsequently advised STAYSAFE (letter of 5 February, 1990) that this operation ceased when approval was obtained to bring B-Doubles into the company's Alexandria depot.

2.4.5 Mr Close supplied cost estimates indicating that the economics of the split B-Double operation had been spoiled by a claimed need to also run a separate rigid truck between Alexandria and Prospect (12 trips/week). These extra trips were to *"balance the loads"* in the two-trailers of the B-Double before it travelled to Canberra.

2.4.6 Mr Close drew attention to extra costs associated with shuttle tractors, extra drivers, hitching/unhitching, and the logistics of daily *"meets"*, when B-Doubles are split before progressing into metropolitan areas.

2.4.7 STAYSAFE was unable to discover any independent assessment of the economics of splitting B-Doubles at the edge of cities. It is of concern that industry estimates were relied upon by the RTA, apparently without independent review.

2.5 UNSATISFACTORY TRIAL

2.5.1 STAYSAFE was supplied with a video recording of a B-Double demonstration trial, permitted on the NSW North Coast. The Committee noted the vehicle to have straddled lane lines on some roads, and was amazed that the vehicle could be entertained as potentially suitable for locations such as the Clarence River Bridge, at Grafton.

2.5.2 It is the Committee's view that many highways and main roads, are not suitable for B-Double traffic. (For example, the Pacific Highway, North of Hexham.)

2.5.3 Mr Malcolm Frost, representing the Sydney Western Region of the Roads and Traffic Authority, testified before STAYSAFE as follows *"In any trials that our region has conducted we have always insisted the vehicle be fully laden".*

2.5.4 This claim was contradicted by Mr Harry Close, of the trucking company TNT. Mr Close testified that a trial of an empty B-Double had been permitted by the then DMR (now absorbed into RTA) on the Great Western Highway over the Blue Mountains.

2.5.5 It seemed to the Committee that the B-Double featured in the video recording mentioned in paragraph 2.5.1 accelerated more quickly than other B-Doubles which had been seen. Enquiries revealed that it had, as suspected, not been fully loaded, during the trial.

2.5.6 The object of introducing B-Doubles is to carry more freight/vehicle than is permitted on articulated trucks. STAYSAFE notes that power to weight ratio is of fundamental importance to quick egress from intersections, and to hill climbing. It appears that trials of B-Double routes, with only partially loaded vehicles, are potentially misleading. (Recommendation 5)

2.6 COMPROMISES - A NECESSITY?

2.6.1 **In discussions with RTA officers, it became evident that many within RTA considered the Guidelines to be an ideal which need not apply to a whole B-Double route.**

2.6.2 **Roads with unsuitable characteristics have been approved, where the unsuitable section is a small portion of the overall route, where upgrading is imminent, or where RTA officers perceive special needs for access.**

2.6.3 **The following two paragraphs reveal Mr Wolfe's willingness to set aside guidelines to obtain B-Double access to Port Botany and the Central Industrial Area.**

> *"The comments made concerning adverse evidence given by witnesses about the suitability of the Rockdale routes have been noted. In this regard, I should point out that all of the roads in question are classified roads which already carry substantial volumes of heavy truck traffic to and from Port Botany and the Central Industrial Area".*
>
> *"Although some sections of the routes may not be ideally suited to B-Double use, it is the RTA's considered view that overall the routes are suitable for use by B-Doubles. It also needs to be stressed that access to Port Botany and the Central Industrial Area is limited, and consequently it would be inappropriate to deny the use of these roads to the road transport industry".*
>
> **from Wolfe, 1989.**

2.6.4 **Mr Wolfe's comment highlights the dilemma faced by roads authorities when strong needs for transport are not matched with adequate road corridors.**

2.6.5 The NRMA report (Appended) refers to lane widths of as little as 2.8 m on the section of Parramatta Rd approved for B-Doubles and 2.7 m on Victoria Rd. Given a 3.35 m minimum width recommended by a study team assembled by the US Transportation Research Board (TRB, 1989), and 3.0 m prescribed as a general minimum in Draft Guidelines (RTA, 1989 {a}), such narrow lanes on busy Sydney thoroughfares are cause for great concern. The risk of sideswipe, as 2.5 m wide vehicles up to 23 m in length try to negotiate such narrow lanes, is clear to everyone.

2.6.6 To be fair to those deciding B-Doubles access, there are several options which confront decision makers.

2.6.7 Briefly, the options and their consequences are commonly as follows:

* Allow B-Doubles on the road with substandard lanes at times when traffic flow is low enough to minimise the problems likely to be caused by the narrow lanes. This may occasionally lead to traffic obstruction, or to sideswipe type crashes, and the curfew times may lead to pressures to beat curfews. Productivity may be reduced as drivers are forced to wait until curfews pass.

* Prohibit B-Doubles from the road. This will force extra journeys, using other trucks instead, with extra costs, extra hazards, and degraded competitiveness for NSW producers and exporters. It will discourage industry from areas not served by wide laned roads.

* Remark the road with fewer, wider lanes. This may create enormous extra traffic congestion.

* Resume land to allow the road to be widened enough to carry the full traffic on lanes at least 3.35 m wide. This may be enormously expensive, and disruptive to local communities.

2.6.8 Regional Directors face a real dilemma; which ever option they choose will inevitably aggrieve some parties.

2.6.9 It is necessary to make a detailed examination of the implications of each of the options and any others available at particular locations. STAYSAFE notes that in particular cases, the greatest nett benefits to the industry may derive from allowing B-Doubles on short lengths of substandard roads.

2.7 COMPROMISES - TO BE MINIMISED

2.7.1 The first problem, seen by STAYSAFE, with allowing compromises, such as that advocated by Mr Wolfe, is that they open the door to pressures which cannot always be resisted by bureaucracies. A regulation is obligatory. A guideline is optional, and can and will be argued about. Energetic and skilled (but not necessarily deserving) advocates will often win such arguments.

2.7.2 A second problem, touched on in Chapter 3, is that compromises undermine the principle of excellence which B-Doubles can and should bring into road transport, in NSW. If we are to prevail upon owners to fit road safety accessories, and if we are to require drivers to have exceptional qualifications, why should we allow the roads authorities to slip unsatisfactory roads into these operations?

2.7.3 A third problem with compromises is that they may relieve pressures on the roads authorities to fix inadequacies by allowing usage to proceed, regardless of the inadequacy. They may lengthen the time before some problems are fixed properly, and in the meantime create local traffic problems.

2.7.4 A further problem with compromises, over routes, is that they may open doors to corruption. STAYSAFE has received no report or allegation of any such corruption concerning B-Doubles routes, but is concerned that opportunities not be created.

2.7.5 In the USA, a comparable problem of deciding where their longer trucks should be allowed to travel has recently been addressed by the "*Committee for Truck Access Study*". The Committee's report (TRB, 1989) assembles a large volume of facts pertinent to deciding where extra large trucks should be permitted to travel, but the Committee resiled from recommending nationwide regulations.

2.7.6 The reason given for allowing states to choose their own criteria was that "*local highway and traffic conditions differ from state to state and from route to route; these differences make a national standard for determining access inappropriate.*"

2.7.7 STAYSAFE finds it hard to believe that better decisions will result from localising such decision making, particularly to local government level in NSW. The Committee for Truck Access Study's report includes many firm statements about minimal road facilities which are satisfactory, and it would seem appropriate to make these mandatory.

2.7.8 STAYSAFE sees recently increased authority, delegated to Regional Directors of the RTA, as making them comparable with executives heading transport companies. Neither should have unbridled rights to use the resources entrusted to them as they choose. Just as transport executives are constrained by regulations, so should Regional Directors be firmly constrained, in STAYSAFE's view.

2.7.9 In summary, STAYSAFE sees a need for Regional Directors of RTA to be constrained to approving B-Double routes only where these comply with regulations based on the recommendations in the Guidelines. Where an exception is considered desirable, it should generally only be agreed to if supported by a specialist group.
(Recommendations 1 and 2)

3. SUPERIOR SAFETY

3.1 REQUIREMENTS

3.1.1 Draft Guidelines for the Operation of B-Doubles (RTA, 1989{a}) propose superior safety equipment for B-Double trucks. Vehicle monitors, speed limiters, spray suppression equipment, anti-skid brakes, hill climbing capacity, under-run guards, fifth wheel assemblies and king pins are all dealt with in the guidelines.

3.1.2 The Draft Guidelines also prescribe that B-Double drivers hold a class 5C licence, have held a class 5B licence for at least 2 years, and hold a certificate of competence, issued by the B-Double owner.

3.1.3 The Guidelines generally use the imperatives "*must*" and "*shall*" in "*guiding*" readers about vehicle equipment and driver qualifications, as opposed to the softer "*should*", used when describing road facilities. The conditions in regard to equipment and drivers seem to mostly be less open to debate.

3.1.4 STAYSAFE is keen to see that these requirements are indeed adhered to.

3.2 DRIVING QUALITY

3.2.1 Various witnesses before STAYSAFE, in February 1989, testified as to the inevitable high quality of driving which would be exhibited by those entrusted with driving B-Doubles. It was argued that the high cost of the vehicles would ensure that owners would entrust them only to drivers with the highest credentials.

3.2.2 The Chairman of the STAYSAFE Committee, and the Committee's Technical Adviser, subsequently took up an offer of an overnight trip on a B-Double, in September 1989.

3.2.3 The object of the journey was to assess the B-Double as a vehicle. In the event, performance by both of the drivers who drove the B-Double during the 14 hour journey proved far inferior to that experienced on other heavy vehicle trips, and was considered quite dangerous in respect to lane discipline, traffic signals, tailgating, overtaking, gear changing and fatigue.

3.2.4 This trip may not have been representative of B-Double travel in general. However, the journey certainly demonstrated that B-Doubles were at least sometimes being driven by drivers with mediocre performances.

3.2.5 The STAYSAFE Committee confronted RTA representatives about this experience. Meetings between RTA executives and industry representatives followed, and have led to proposals for a more rigorous selection and accreditation system for drivers. Such a system has been agreed upon by an Industry group, "*The NSW B-Double Road Transport Operators Group*".

3.2.6 STAYSAFE believes that the RTA should accredit and audit any such training program. (Recommendation 4)

3.2.7 In March 1990, STAYSAFE sent two of its Secretariat to check out the adequacy of B-Double routes around Sydney. They followed a B-Double along Liverpool and Woodford Roads, and photographed persistent straddling of lane lines by the B-Double. It twice collided with the kerb, and obstructed other vehicles from passing. Officials and transport company executives responded to advice of these observations with suggestions that they are typical of articulated truck driver behaviour in off-peak traffic.

3.2.8 It appears to STAYSAFE that drivers may feel that lanes are too narrow.

Figure 2: B-Double, reported to STAYSAFE as having straddled a lane line for much of its travel.

3.3 OPERATORS RESPONSIBLE FOR DRIVING STANDARDS

3.3.1 **As was drawn to attention, in STAYSAFE's fifteenth report (STAYSAFE, 1989), it is important that transport operators take increased responsibility for safe and legal driving of their vehicles. This seems especially important with B-Doubles.**

3.3.2 **Operators have complained, to STAYSAFE, that they are unable to legally learn of actions taken by Police against their drivers. They also can only discover action by licensing authorities through physical inspections of licences, and even then they are unable to be certain that the presented licence is valid.**

3.3.3 STAYSAFE was told of privacy obstacles to RTA revealing infringement and licensing information to employers of drivers. The public interest necessitates that employers of heavy vehicle drivers have knowledge of dangerous behaviour as observed by Police. A system, where drivers authorise owners to have access to traffic conviction and licence status records, and where the RTA arranges prompt despatch of pertinent information to owners who supply such an authority, appears to STAYSAFE to be highly desirable. (Recommendation 6).

3.4 BRAKES

3.4.1 Specialists such as Sweatman and Tso (1988) have advocated anti-skid brakes for B-Doubles. Close (1988) also supported anti-skid brakes, but recommended carefully balanced brakes as being even more important, and cautioned against legislating too hastily in regard to anti-skid brakes. He claimed that inferior quality systems could be encouraged, by premature legislation. In their submission, the NRMA pointed out that anti-skid systems were already in voluntary use, and advocated that they be mandatory from January 1990.

3.4.2 Draft guidelines propose anti-skid brakes for prime movers of B-Doubles from 1 January 1990, and for trailers of B-Doubles from 1 January 1992, subject to review of experience. STAYSAFE would need very strong evidence, indeed, before it would agree to this requirement being deferred any longer. Anti-skid braking is an important safeguard against jackknifing whilst braking.

3.5 TRAILER LENGTH, ENGINE POWER

3.5.1 The latest draft of the Guidelines for the operation of B-Doubles provides for exceptions to rules about trailer lengths, and about engine power, for particular routes. STAYSAFE is opposed to such exceptions, considering that uniformity brings simplicity which assists regulation and enforcement, and seeing unconvincing justification and no necessity for the exceptions. (Recommendation 7).

3.6 OTHER MEASURES

3.6.1 STAYSAFE sees a need for the high standard of transport safety, accompanying B-Doubles, to be perpetuated by a widely publicised commitment, by all concerned, to the highest possible standards of safety for B-Doubles.

3.6.2 As a general rule, the burden of proof has fallen on regulation authorities, when the need for greater safety measures is under consideration.

3.6.3 STAYSAFE notes that it is extremely difficult to resolve, definitively, the benefit or otherwise of many safety measures. In the case of B-Doubles, where there is a commitment to greatly enhanced safety, STAYSAFE sees a reversal of this burden of proof being appropriate. That is, safety measures, supported by independent professional experts, should be required unless the industry can prove that they will not be worthwhile. (Recommendation 8).

4. SUPERVISION OF OPERATIONS

4.1 As mentioned in paragraph 1.2.2, the Chairman of STAYSAFE travelled with the Committee's Technical Adviser on a substantial B-Double journey. Of great concern to STAYSAFE was the admission, to its Chairman, by a tired B-Double driver, that he had deliberately falsified his log book.

4.2 The driver was reported as having indicated that he had recorded a brief stop as a half hour break.

4.3 STAYSAFE was concerned to discover why such a deception would be entertained by a driver who had a tachograph in his vehicle. The tachograph would expose the truth, to anyone who cared to look.

4.4 A meeting with RTA officers in September 1989, quickly revealed the answer; absolutely no routine or random checking of tachographs had been arranged, explaining why such drivers did not care.

4.5 March 1990 follow up by STAYSAFE led to assurances that tachograph records are now being inspected, and action to cancel permits has been threatened. From 1 July 1990 it is proposed that tachograph records be held in long distance articulated trucks and that there be detailed inspections of them following field observations of unacceptable behaviour. A tachograph needs to be backed up with a surveillance and audit system which is responsibly administered. STAYSAFE was most disappointed that the RTA would insist on tachographs for B-Doubles and not follow through with a system to make them useful. It also was a disappointing loss of an opportunity to pilot the kind of system now recognised as desirable for all long distance heavy vehicles.

4.6 **A further disappointment to STAYSAFE was the observation, from the Chairman and the Technical Adviser, that there were extremely rare opportunities for the B-Double to safely stop on the rural highway being travelled.**

4.7 **According to Draft Guidelines, B-Doubles are more difficult to reverse into a parking bay, than are ordinary articulated trucks. The Chairman's driver repetitively abandoned attractive roadside places, where toilets and food were available, evidently because he was unsure that the B-Double could enter, park, or exit safely.**

4.8 **STAYSAFE was disappointed at the lack of thought for this aspect of route selection (which has subsequently been dealt with in new draft Guidelines). The failure of RTA representatives, advising STAYSAFE on B-Double policy, to have ever travelled on a B-Double, greatly concerned STAYSAFE. (Recommendation 9)**

4.9 **At least one of those officers has subsequently corrected the omission, having reported a substantial trip in a B-Double.**

4.10 **These experiences shattered the impression, which had been painted, of outstanding responsibility in regard to B-Double operations. (Recommendation 3)**

4.11 **Mr H Close, Executive Director of Energy Resources for TNT Limited, and Chairman of the Australian Road Transport Federation's Technical Advisory Group, testified before STAYSAFE. He was asked if he felt that the industry itself "*had done enough, by self regulation, to make the motorist feel safer on our road system*". Mr Close replied as follows:**

> *"No. Self Regulation is a joke . . . . I don't think it started from us, however, I think it started from probably Federal Government when there was concern, however expressed from different quarters about truck safety and nobody knew what to do so they said pass the ball, let's go into self regulation. What does that mean? . .*

. . If you find out tell me. I drew up a code of safety conduct for ARTF which wasn't accepted because it was too short, it said "obey the law" ".

4.12 STAYSAFE agrees that self regulation, alone, is often not enough to secure appropriate behaviour. There is an obvious need for surveillance, incentives or penalties, and government administered audit, whenever there are large commercial pressures encouraging transport operators to illegally compromise the safety of the public. The operators may be required to gather records (such as tachograph reports), but ultimately there has to be Government audit to ensure that surveillance and remedial action are undertaken properly. (Recommendation 10)

5. PUBLIC AWARENESS

5.1 STAYSAFE members still find that the general public is unaware of or confused about B-Doubles. It seems that many people have not noticed that these 31% longer vehicles have arrived.

5.2 The Traffic Authority published a brochure *"B-Doubles"* which briefly argued their benefits. The RTA has issued sheets listing the advantages which B-Doubles may have over articulated trucks, there have been press articles, and demonstrations to local government officials.

5.3 Local communities, and their elected representatives in Local and State Government, may become concerned at a time when there appears to be specially strong public concern about heavy vehicle safety. How could anyone, ignorant of the benefits of B-Doubles, possibly be happy to see these even longer vehicles on their roads? The concerns of local communities clearly need to be addressed.

5.4 STAYSAFE considers that rigid adherence to all of the conditions recommended in the guidelines would make it much easier to reassure community groups about B-Doubles. While B-Doubles can be allowed anywhere, at the discretion of Regional Directors and Local Councils, fear is to be expected.

5.5 Two prevalent concerns, which need to be addressed with clear and accurate information, are the allegations that B-Doubles damage roads, and that they attract rail freight to road. These concerns have been strongly voiced to STAYSAFE, by community groups, and by a Railways Union Official.

5.6 In answer to the allegations of road damage, advice of 12 April 1989 from the Hon R J Webster MP, Assistant Minister for Transport, was that B-Doubles cause marginally less road damage per tonne of payload than does a six axle articulated truck, when both vehicles are loaded to Ordinance 30 C limits. Again, when both vehicles

are loaded to RoRVL C Permit limits, the B-Double causes marginally less damage per tonne of payload.

5.7 The 12 April 1989 advice quotes NAASRA estimates (a) that there may eventually be a 1% increase in tonnes of freight carried by road, due to B-Doubles attracting the freight from rail, and (b) that B-Doubles are expected to reduce truck travelling by 2% overall, thereby reducing the overall risk of truck accidents. Similar predictions have been made for larger vehicles in the USA (TRB, 1989).

5.8 Clear, accurate, and fully attributable information such as this should be assembled to deal with community concerns about B-Doubles. While explaining the advantages of B-Doubles, such information could usefully mention the implications of the longer length of B-Doubles during overtaking manoeuvres.

6. RECOMMENDATIONS

1. That the Guidelines for the Operation of B-Doubles, improved as recommended in this report, be replaced with regulations, with B-Doubles permitted on routes not complying with the regulations only as individually approved by the N.S.W. Minister for Transport. (Paragraph 2.7.9)

2. That the Roads and Traffic Authority limit the authority of Regional Directors so that they may only approve B-Double routes which totally conform with the regulations referred to in Recommendation 1.
(Paragraph 2.7.9)

3. That individual companies continue to have their drivers, vehicles, and access to their terminals approved before being permitted to operate B-Doubles on approved routes. (Paragraph 4.10)

4. That all drivers of B-Doubles be required to have attended and passed a course approved and audited by the Roads & Traffic Authority.
(Paragraph 3.2.6)

5. That demonstration trials use B-Doubles loaded to their mass limits.
(Paragraph 2.5.6)

6. That the RTA introduce a system to promptly feed back, to employers of heavy vehicle drivers, details of the drivers' serious traffic convictions and licence suspensions or disqualifications.
(Paragraph 3.3.3)

7. That exceptions to substantive specifications, as currently stated in Draft Guidelines for the Operation of B-Doubles in regard to brakes, horsepower, and trailer lengths, be disallowed in future. (Paragraph 3.5.1)

8. That the onus be on the industry to prove that safety measures will not be worthwhile for B-Doubles. Any measure, considered by a majority of independent experts to be worthwhile, should be required unless the industry can prove it to be a waste of resources.
(Paragraph 3.6.3)

9. That the RTA ensure that its senior officers, who are given responsibility for particular kinds of operations, become personally familiar with the operations which they are responsible for fostering or regulating. This would normally include substantial travel on the classes of vehicles being administered.
(Paragraph 4.8)

10. That the RTA ensure that effective and rational surveillance and audit systems are applied to major problems like compliance with speed limits, driving hours, braking capability, and axle loadings. (Paragraph 4.12)

11. That the RTA produce and disseminate clear, accurate, fully attributable, and well presented information, for community groups and the public, dealing with B-Doubles concerns, including the road damage allegation, and the likely effects of B-Doubles on rail.
(Chapter 5)

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APPENDIX A
Urban B-Double Routes

1.0 Introduction

The following information provides a summary of an NRMA study of the approved urban-arterial routes for B-Doubles in NSW. Each of the new routes are discussed in the light of the Traffic Authority's "Interim Guidelines for the Operation of B-Doubles" (June 1988). The study was based on the list of approved routes provided to the NRMA by the Roads and Traffic Authority. The list is given in Attachment 1.

The many short lengths of local council roads were not examined as the main impact of B-Doubles on these roads is likely to be on residential amenity rather than on other traffic. Local Government power to restrict travel on these roads should be exercised, where necessary, to allay any local concerns.

It should be stressed that the Interim Guidelines provide limited criteria for minimum road standards but set no standards for alignment or land use conflicts. Consequently a number of routes, while meeting the standards set out in the guidelines, exhibit deficiencies that, we believe, compromise their suitability for B-Doubles.

2.0 Routes not meeting Guidelines

A number of approved B-Double routes do not meet the Traffic Authority's Guidelines. Two requirements, in particular, give little opportunity for alternative interpretations but have clearly been breached. They are:

* Clause 7.3.1 - Number of Lanes

"In large urban areas, B-Doubles should only be allowed to travel on major roads where a minimum of two through lanes are available in the direction of travel; i.e. where an exclusive right (or left) turn bay is provided at intersections, there shall be two other lanes; or where a kerbside lane with 'No Stopping' is provided, and an additional through lane will be required (e.g.at S-lanes). This constraint will provide at least one through lane for other traffic free of B-Doubles."

* Clause 7.5.5 - Lane Width

"The minimum lane width generally should be 3.0m but in some special circumstances, e.g. where tight turns are to be negotiated, this minimum lane width might need to be greater."

The following urban-arterial B-Double routes fail to meet the Guidelines:

2.1 Canterbury Road

This route supports two lanes of traffic in each direction with on-street parking provided outside peak periods. Right turns are permitted at most of the intersections along this route without the protection of sheltered right turn bays (see fig. 1). Consequently,

this route fails to meet the requirements of Clause 7.3.1. A B-Double travelling this route would be forced to change lanes continually to avoid parked cars and right turning vehicles.

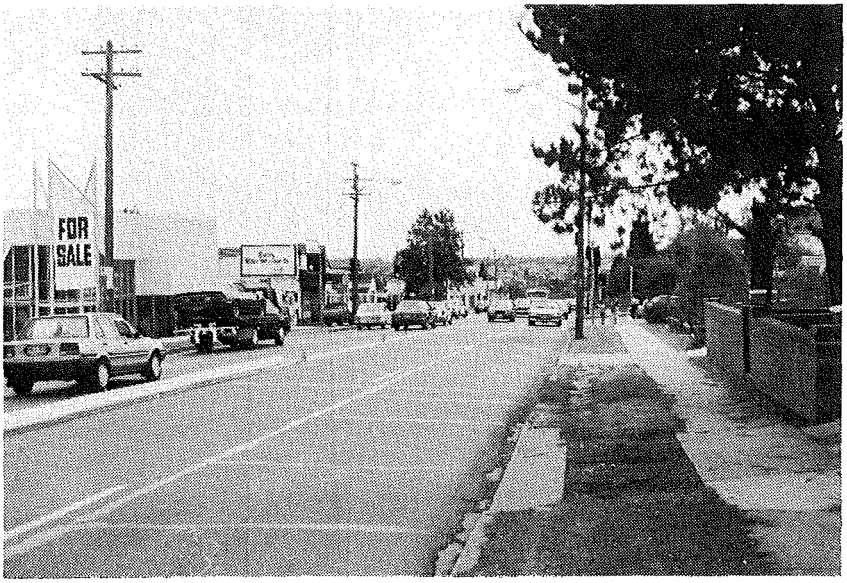

Figure 1: Lack of sheltered right turn bays reduce available through lanes on Canterbury Road, Punchbowl.

2.2 Liverpool Road (Hume Highway)

The description of this route fails to include a specific length. It is therefore assumed that the entire route has been approved for B-Double travel.

The section of Liverpool Road between Frederick Street, Ashfield and Parramatta Road does not meet the requirements of Clause 7.3.1. In addition, this section is congested during the most of the day making B-Double travel unsuitable.

2.3 Milperra Road

The section of Milperra Road between Moorebank Avenue and the Hume Highway provides for two lanes of travel in each direction. A lack of sheltered right turn bays on this section causes right turn queues to reduce the number of through traffic lanes to one. Consequently, this route fails to meet the requirements of Clause 7.3.1. (see fig. 2).

A suitable alternative to this section of the route would be the use of Moorebank Avenue and the South Western Freeway to join the Hume Highway. This alternative route appears to satisfy the requirements of the Guidelines.

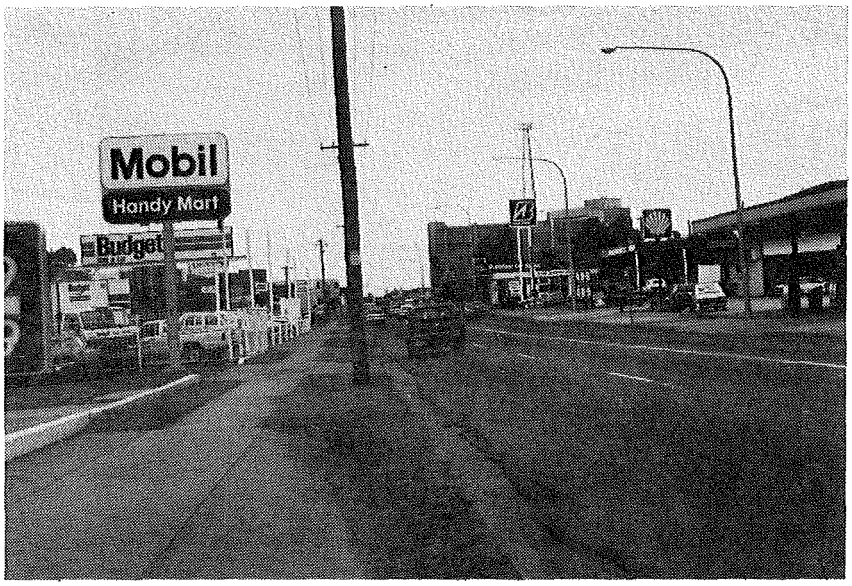

Figure 2: Lack of sheltered right turn bays on Milperra Road in Liverpool.

2.4 Newbridge Road

On-street parking on this route reduces the number of through lanes from three to two, outside peak periods. On this basis, the maximum allowed traffic volume of 800 vph per lane is exceeded between 10am and 3pm. This breaches clause 7.3.3 which states:

> " B-Doubles should not be permitted to operate on roads during periods when the traffic volumes exceed 800 vehicles per hour (vph) per lane. This criterion may be used in determining appropriate time restrictions for operation on particular urban or rural routes."

Owing to the fact that B-Doubles are excluded from using Metropolitan routes during peak periods, the result of this additional volume restriction should be to exclude B-Double travel between the hours of 6am and 7pm on this route.

2.5 Pacific Highway

The length of the Highway through Hornsby does not meet the requirements of Clause 7.3.1. In addition, the running of B-Doubles along this section is highly undesirable due to high pedestrian activity (see fig. 3).

Figure 3: High pedestrian activity on the Pacific Highway at Hornsby.

The alternative route along George Street is considered unsuitable for B-Doubles due to sharp turns at Bridge Road and Jersey Street (see fig. 4).

Figure 4: Alternative route to Pacific Highway through Hornsby is unsuitable due to tight turns at Bridge Road.

The opening of the Wahroonga to Berowra section of the Sydney to Newcastle Freeway will provide an adequate route for this section. Approval should have been deferred pending the availability of this high-standard alternative.

The description of this route omits the section from Pymble to Hornsby yet approval has been given for travel on Ryde Road from Victoria Road to the Pacific Highway. It is therefore assumed that travel is permitted between Pymble and Hornsby. This length of the highway is constructed on a winding and hilly alignment, considered unsuitable for B-Double travel (see fig. 5)

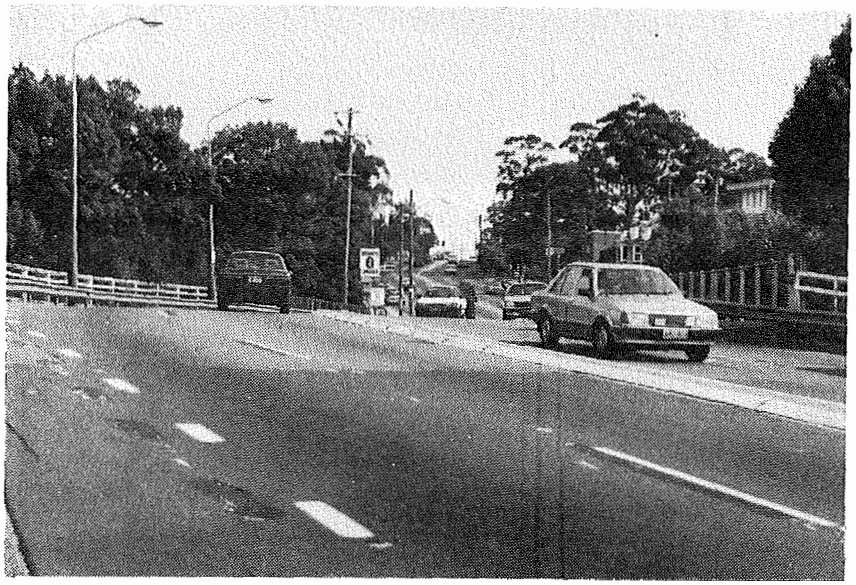

Figure 5: The twisting alignment of the Pacific Highway between Pymble and Hornsby makes this section unsuitable for B-Doubles.

2.6 Pacific Highway from Doyalson to Hexham via Newcastle

The section of this route between Glebe and Mayfield is wide enough to permit parking without causing an obstruction to the two traffic lanes for each direction of travel. The lack of sheltered right turn bays, however, means that this route fails to meet the requirements of Clause 7.3.1.

This route also highlights a land use conflict as it travels through the Charlestown shopping region and the west end of the Newcastle CBD.

2.7 Parramatta Road

The lane widths for the section from Silverwater Road to Birnie Avenue varied from 2.8m to 3.1m. Consequently, this route has lane widths below the minimum width of 3m as defined in the Guidelines (see figure 6).

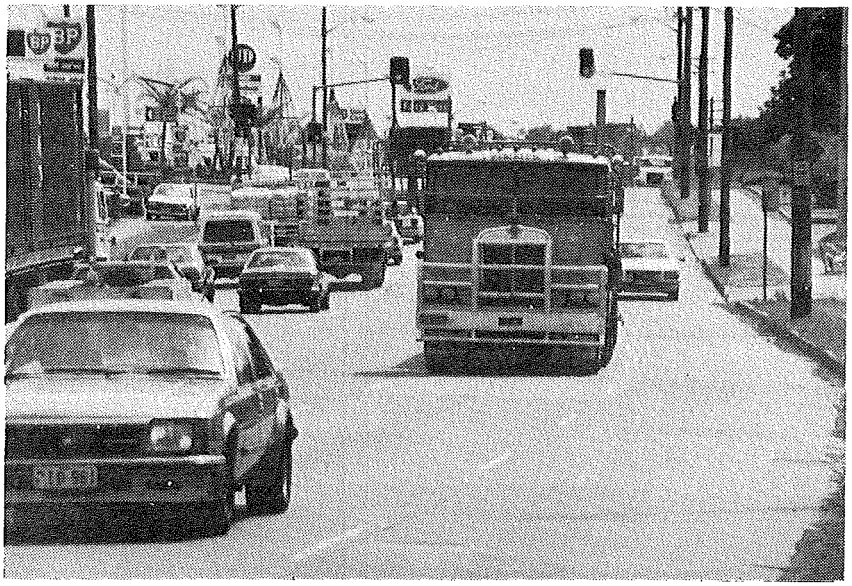

Figure 6: The narrow lanes of Parramatta Road make this route unsuitable for B-Doubles.

2.8 Windsor Road

The section of Windsor Road, north of Kellyville, is narrow with an uneven pavement and damaged shoulders making it unsuitable for large vehicles (see figure 7).

In addition, a lack of sheltered right turn bays and incidence of on-street parking means that the section from James Ruse Drive to Kellyville does not meet the requirements of Clause 7.3.1.

2.9 Victoria Road

The lane widths for the section between Devlin Street and Chatham Road varied from 2.7m to 2.9m. Consequently, this section does not meet the requirements of Clause 7.5.5. This section is also constructed on a winding alignment further accentuating the problem of narrow lanes (see figure 8)

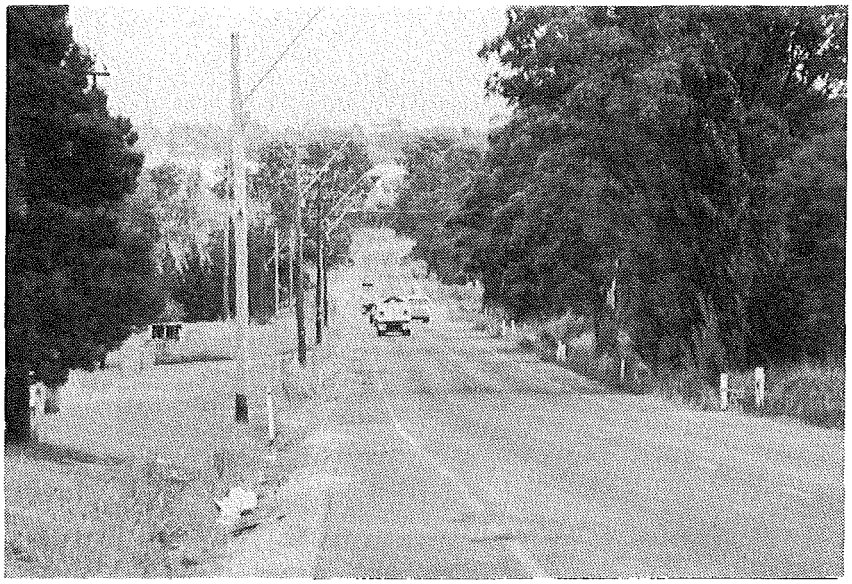

Figure 7: Uneven pavement and damaged shoulders on Windsor Road.

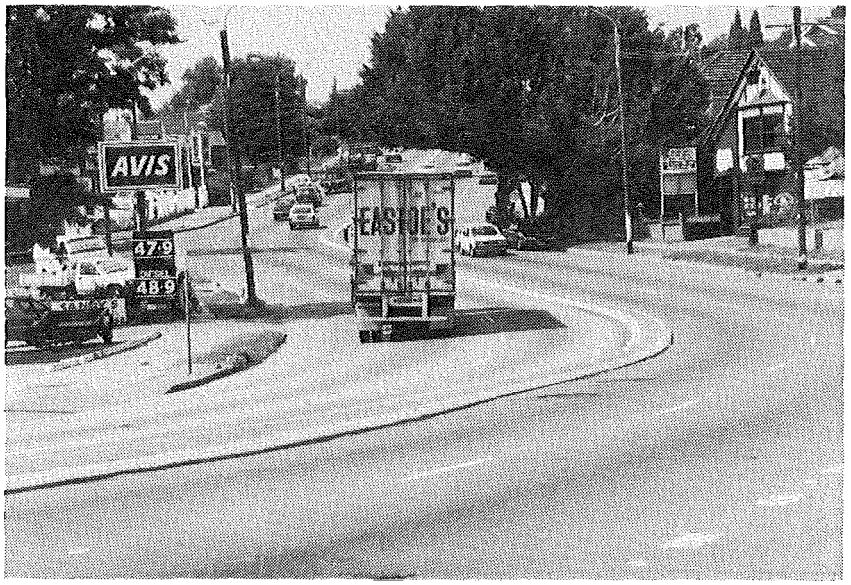

Figure 8: A winding alignment and lane widths below the acceptable minimum width make Victoria Road unsuitable for B-Double travel.

2.10 Freemans Waterhole to Cardiff via Toronto

This route is not listed in the Roads and Traffic Authority list in the attachment. However, the route was studied due to a recent article in the Newcastle Herald (also included in Attachment 1).

The above route fails to meet the requirements defined by Clauses 7.3.1 and 7.5.5. of the Guidelines.

A number of tight curves were noted along the route with some signs advising speeds as low as 45 kph. Narrow bridges were observed and the pavement width was highly variable.

The section of the route passing through the urban areas of Boolaroo, Argenton and Glendale has only one lane provided for each direction of travel, in places. A number of pedestrian crossing are also encountered.

3.0 Unsuitable B-Double Routes

The following routes meet the minimum requirements of the Guidelines, but are considered unsuitable due to parameters not defined in the Guidelines.

3.1 King Georges Road

The length of King Georges Road between Beverly Hills and South Hurstville is constructed on a hilly alignment with a series of short, steep sections (see figure 9). The lack of visibility inherent along this section has been a cause of concern for some time and prompted the treatment of the intersection of Hillcrest Avenue/King Georges Road with a red light advance warning system.

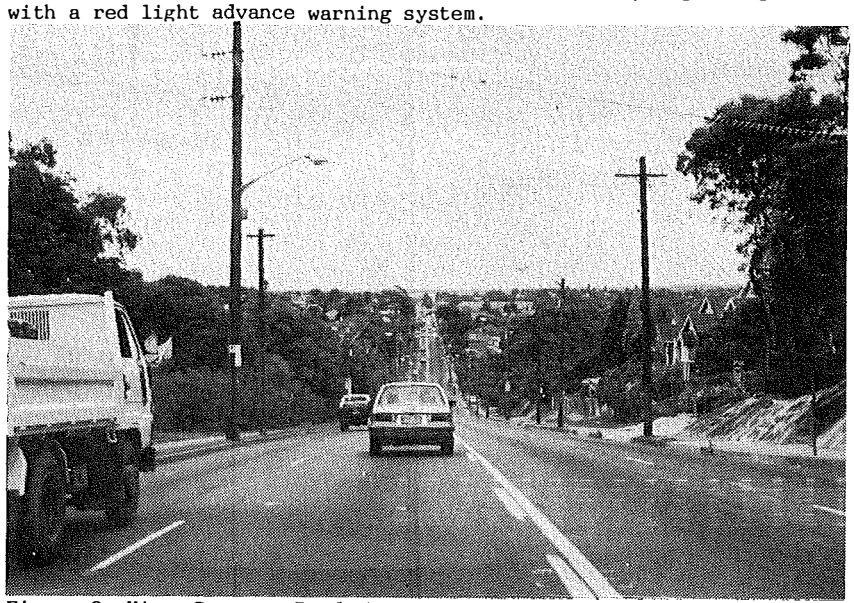

Figure 9: King Georges Road is constructed over a series of short, steep sections thereby reducing visibility.

3.2 Pacific Highway between F3 and Newcastle

A 4 kilometre section of the Highway between Swansea and the Caves Beach turn-off is notorious for crashes involving heavy vehicles and is constructed on an alignment considered unsuitable for B-Doubles. The poor alignment is typified by a steep grade and a series of tight curves with advisory speeds posted as low as 45kph.

In addition, the section of the route linking the F3 and Doyalson travels through the Swansea shopping centre. The route has only one lane available for each direction of travel and is subject to high pedestrian activity and on-street parking. The route also travels over the narrow deck of the Swansea Bridge.

4.0 Conclusion

In all, a total of 23 routes were examined. The study was conducted on the basis of each route meeting the Traffic Authority's "Interim Guidelines for the Operation of B-Doubles". These guidelines provide only limited criteria for minimum road standards and therefore an assessment that a route meets the Guidelines, should not be taken to imply that the route is unequivocally suitable for B-Doubles.

The study reveals that 12 of the 23 routes examined give rise to serious concern regarding their ability to support B-Doubles safely. Indeed, 10 of these routes do not even meet the requirements of the Traffic Authority's Guidelines. The result is that B-Doubles travelling on these routes could pose a significant hazard to vehicle and pedestrian traffic.

Although this study concentrated on approved Metropolitan routes only, close attention should also be paid to the geometric standards and traffic conditions on rural routes. In particular, poor standard rural routes such as the Pacific Highway accentuate the dangers involved when overtaking all heavy vehicles but particulalry B-Doubles.

5.0 Recommendations

1. That the approval for the routes detailed in Section 2 of this report be withdrawn for those sections not meeting the current Interim Guidelines, unless it can be demonstrated objectively that safety and efficiency for other road users will not be compromised.

2. That the approval of all future B-Double routes be governed by a stringent application of the Traffic Authority's Guidelines with caution being exercised on those matters not quantitatively specified in the guidelines. This caution should recognise the amount of experience gained with B-Doubles in similar conditions.

3. That the Traffic Authority's Guidelines for B-Doubles be reviewed to include a more comprehensive list of minimum road standard criteria, particularly alignment - based on thorough analysis of experience gained so far. All existing approved routes should be re-evaluated against these revised guidelines.

4. The Pacific Highway between Hexham and the Queensland Border should be included in the list of prohibited routes in the Guidelines.

LIST OF WITNESSES

Organisation or individuals who gave evidence before the Committee (Listed In the order of their appearance)	Date of Appearance
Roads and Traffic Authority	
Peter Graeme Croft, Engineer	8 February 1989
Michael Phillip Paine, Engineer	"
Phillip Charles Hyde, Engineer	"
New South Wales Police Department	
Mervyn Lyle Lane, Superintendent of Police	8 February 1989
George Spencer Dungar, Inspector of Police	"
Colin Gordon Craig, Sergeant of Police	"
NRMA	
Bruce Owen Searles, Chief Traffic Engineer	8 February 1989
James Edward Holgate, Engineer	"
Consumers Transport Council	
Dr Phillip Glencoe Laird, Vice President	8 February 1989
Australian Railways Union	
Peter John Ferris, Research Publicity Officer	8 February 1989
Roads and Traffic Authority	
Roger Frederick Wilson, General Manager-Asset Strategy	19 March 1990
Michael Phillip Paine, Inspection's Strategy Engineer	"
Malcolm Raleigh Frost, Manager-Asset Condition	"
TNT	
William Harry Close, Executive Director, Energy Resources	19 March 1990