# Australian Domestic Air Transport : Some Economic Issues

## Occasional Paper

The importance of an efficient transport system for Australia is self-evident. Not surprisingly, both public investment and government legislation have been employed to develop transport networks over time. Domestic air transport is a most important component of the Australian transport sector. Any inquiry into the status and future of domestic air transport policies is clearly an important study, and the current Department of Transport Review of Domestic Air Transport Policy has particularly wide implications. This Paper was originally prepared by the BTE in response to a general request by the Department of Transport for submissions on domestic air transport policies in Australia. Only minor revisions have been made.

BUREAU OF TRANSPORT ECONOMICS

# AUSTRALIAN DOMESTIC AIR TRANSPORT
# - SOME ECONOMIC ISSUES

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## FOREWORD

On 3 July 1977, the Minister for Transport (the Honourable P.J. Nixon, M.P.) announced that the Government was undertaking a review of Australia's domestic air transport policy. The BTE was invited to contribute to specific parts of this review, and the results of that contribution are the subject of a separate BTE publication.

The Review Committee also issued a call for submissions from interested parties. Through its involvement with earlier studies of various aspects of air transport in Australia, the BTE has developed considerable experience in this topic. Therefore, it was felt that it would be appropriate for the BTE to prepare a general submission to the Committee. The general content of the submission is contained in this Occasional Paper. Only minor revisions to the original submission have been made.

The BTE submission was not formally tied to the Review Committee's terms of reference or task definitions. Rather, it ranged over several major economic questions confronting air transport planners and policy-makers.

Preparation of the submission was directed by a BTE Steering Committee formed specifically for this project. Members of this Steering Committee were:

- Mr W.P. Egan (Assistant Director, Transport Resources Investigation)
- Dr M.D. Fitzpatrick (formerly Acting Assistant Director, Economic Evaluation - member until September 1977)
- Mr T.M. Hogg (Assistant Director, Finance Branch - member from September 1977)

. Dr H.G. Quinlan (Acting Assistant Director, Transport Costs and Information)

The actual submission was prepared by a Working Group of BTE officers from three Branches. Members of the Working Group were:

. Ms J.I. Coat (Transport Costs and Information Branch)

. Dr R.R. Noakes (Transport Resources Investigation Branch)

. Mr A.J. Shaw (formerly of Economic Evaluation Branch - member until October 1977)

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January 1978

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The importance of an efficient transport system for Australia is self-evident. Not surprisingly, both public investment and government legislation have been employed to develop transport networks over time. Domestic air transport is a most important component of the Australian transport sector. Any inquiry into the status and future of domestic air transport policies is clearly an important study, and the current Department of Transport Review of Domestic Air Transport Policy has particularly wide implications.

This Paper was originally prepared by the BTE in response to a general request by the Department of Transport for submissions on domestic air transport policies in Australia. Only minor revisions have been made to the original BTE submission in preparing this Paper.

The major thrust of the BTE approach is an assessment of the economic performance of the two major airlines, TAA and AAA. Because the bulk of the domestic air transport task is performed by these two airlines, any changes to the legislative environment in which they operate should be aimed at unambiguous improvements in consumer welfare.

Within this limited framework, the BTE has developed a formal approach to evaluating the performance of both airlines in relation to the existing Government legislation. In this Paper, the effects of the existing regulatory environment as it applies to the major elements of domestic air transport are examined. Major emphasis is on economic issues which arise from the form and application of existing policies. Some of the results of this assessment are summarised below.

The origins and development of domestic air transport policy and legislation are examined in some detail. One aspect of the legislation which is clear is the consistent objective of developing an air transport operating industry rather than the air transport system. It can be shown that there are serious economic problems associated with the continued application of such an objective, although its initial value in establishing a viable air transport industry is recognised. One particular aspect which appears to go against principles of economic efficiency is the mechanism for artificial and strict control of available capacity. There are two features of this. The first is that capacity control inherently acts against economic efficiency. The second feature is that the mechanism itself may force the two airlines to co-operate (albeit tacitly) rather more closely than might otherwise be desired. This could result in a degree of cartelisation in other areas, with consequent further degradation of efficiency. Some evidence of these effects is cited in the Paper.

The economic analysis of the performance of both airlines relies heavily on an assessment of the levels of consumer welfare which currently results from their activities. The view put forward is that whilst the domestic airlines and government have to date been concerned with the development of a viable industry, emphasis in the future should be more specifically directed towards the needs of the consumer of air transport services. Encouragement of increased price and non-price competition is considered to be most important, in order to ensure that levels of consumer satisfaction are increased.

A major finding is that introduction of a non-scheduled third operator onto specific major routes should be considered in order to stimulate levels of competition among the existing major airlines. One option which has been suggested and which could have a similar overall effect would be to introduce a system of competitive tendering for exclusive route licences. However, that option would not appear to be feasible, given both the provisions

of Section 92 of the Constitution and the existing capacity of the two airlines. In effect, it would not be possible to exclude an airline from operating on a given route. On the other hand, contraction to a 'one-airline' situation is not regarded as desirable in a national sense, although it is admitted that there are strong administrative arguments for allowing a regulated monopoly situation to develop. It would be rather easier to regulate a monopoly in the direction of improved consumer welfare than it is to regulate the existing duopoly in the same direction. Nevertheless, there is little doubt that the most effective solution is one in which this is done by market forces.

The major findings relating to changes to existing regulations deal with relaxation of the capacity restrictions applying to both airlines. In order to allow for the introduction of alternative fare structures and alternative forms of air travel (such as charter operations by TAA and AAA), higher capacity levels are required. There is no suggestion that the system of normal scheduled services should be abandoned. Indeed, the view is strongly advanced in this Paper that alternative air services, supplementing rather than replacing the existing services, should be introduced. The importance of the growth in travel for leisure (rather than for business purposes) should be recognised. In particular, there is a strong need to look to research aimed at identifying the size of the existing and potential market for discretionary air transport in Australia.

The view is also put that there is no evidence that these changes are potentially detrimental to the existing airlines. Certainly, the variations would require a change in management philosophy, but this would be in the direction of actively seeking out new markets. There is some evidence that there is considerable scope for this, and that it is likely to be profitable. Finally, it would probably result in better services to non-metropolitan centres, which appear to be particularly disadvantaged by the present system.

## CHAPTER 1 - INTRODUCTION

### OBJECTIVES OF THE PAPER

In the general study of public policy as it influences transport, it is necessary to consider the nature of particular political, market and technological environments within which the specific activity takes place. Air transport in Australia, as elsewhere, has been subject over a number of years to unexpected fluctuations in these influences. The pattern of regulation and competition which is apparent today in domestic air transport is the result of the interaction of these factors over a considerable period of time.

The purpose of this Occasional Paper is to describe and review the nature of the major influences (particularly market forces) which have shaped the regulatory and economic framework of domestic air transport in Australia. The Paper follows very closely the form of a submission prepared by the BTE in response to the general request from the Department of Transport Committee reviewing Domestic Air Transport Policy for submissions from interested parties.

This Paper does not cover all aspects of domestic air transport policy, nor does it provide clear-cut recommendations as to the future direction for air transport policy. Rather, the intention has been to provide a guide to the performance from a national viewpoint of current air transport operations as performed by Australia's two major domestic airlines, Trans-Australia Airlines (TAA) and Ansett Airlines of Australia (AAA). A further intention is to identify specific areas where national welfare could be increased through changes to existing legislation and regulations.

The arguments which are presented subsequently to suggest variations to the economic organisation of the air transport industry or for alterations to existing policies are based on the expected direction and magnitude of gains or losses to both the major airlines

and to consumers. The criterion applied is that any change in policy or any reorganisation of the domestic air transport industry which will result in an unambigious net increase in benefits to producers and to consumers will represent an increase in national welfare.

Since the inception of Australia's Two-Airline Policy in its present form, successive Australian governments have exerted various levels of control over individual airline operations, over industry activities and over the entry of new operators. Although the objectives and conduct of government have been discussed openly, little has been written on the effects of existing regulations on the performance of the major airlines.

Time has not permitted the BTE to perform and report on detailed quantitative analyses of particular aspects of domestic air transport operations. Nevertheless, the data which are presented, and the conclusions which have been reached, represent progress towards a more detailed appreciation of the economic status of the Australia's domestic air transport industry.

Concern and criticism as to the role of government in domestic air transport in Australia, as elsewhere, is not new. In the USA, there have been significant moves over the years to amend the nature and degree of government involvement with domestic air transport. At present, in the USA, the Cannon-Kennedy Bill[1] is receiving detailed attention by Congress. It is thus timely that a review of Australia's domestic air transport policy should now take place.

SCOPE

There have been a number of economic studies of the regulation of domestic air transport in countries such as the USA in recent

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(1) The Economist, 12-18 March 1977, p. 45.

years[1]. On the other hand, literature on the economic aspects of Australia's domestic air transport regulations is scarce[2], the work by Hocking being the only real attempt to examine in some detail particular aspects of domestic airline operations from an economic viewpoint. It is apparent that considerable benefits may be gained from detailed studies in this area. The early work by Hocking and Haddon-Cave (1951), Goodrich (1960), Corbett (1965) and Brogden (1968) presents interesting historic accounts of the developments of the domestic air transport industry and of regulatory control.

The terms of reference for the review of Domestic Air Transport Policy in Australia as originally outlined by the Minister for Transport are necessarily broad, in order to cover the many facets of domestic air transport. However, this Paper is concerned with a narrower sub-set of issues affecting domestic air transport in Australia. It has only been possible to present a preliminary assessment of current domestic air transport operations within Australia as performed by TAA and AAA and to identify some specific areas where there may be scope to improve efficiency. Hence this Paper is concerned with the following:

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(1) See for example George W. Douglas and James C. Miller Economic Regulation of Domestic Air Transport: Theory and Practice (Washington: The Brookings Institution, 1974); John R. Baldwin, The Regulatory Agency and the Public Corporation: The Canadian Air Transport Industry (Cambridge, Mass: Ballinger Publishing Company, 1975); and William A. Jordan, Airline Regulation in America: Effects and Imperfections (Baltimore: Johns Hopkins 1970).

(2) The recent literature consists of R. Hocking, Some Aspects of Australia's Two Airline Policy (Committee for Economic Development of Australia, Report No. 35, M. Series, September, 1972); D.G. Davies, The Efficiency of Public versus Private Firms, the Case of Australia's Two Airlines, Journal of Law and Economics, April, 1971; and J. Niall, The General Aviation Industry in Australia, (Institute of Applied Economic and Social Research, University of Melbourne, 1974).

- A description of the historical development of legislation affecting the operation of domestic air services provided between major Australian cities[1] as currently performed by the two major airlines, TAA and AAA. This embraces a review of current regulations as they directly affect the operations of TAA and AAA;

- An economic examination of the market performance of TAA and AAA. This involves a description of the operations of both airlines, an outline of general market influences as anticipated from a general understanding of oligopoly theory and a review of industry performance in relation to specific economic criteria.

- A synthesis of the findings regarding the above two areas to determine particular aspects of the existing regulations which could be amended or which could be administered in different fashion. This synthesis encompasses the rationale for change, particularly in relation to the implications of a more competitive environment on air services for non-metropolitan population centres.

PROCEDURES ADOPTED

The Paper is divided into five chapters. Chapter 2 contains an account of the historic development of legislation affecting the major airlines on the more significant domestic routes. This discussion relies upon various documented summaries, upon the legislation itself, and upon Department of Transport and BTE source material.

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(1) The use of the word 'trunk' is avoided in this Report because of its special meaning in the context of Australian air transport regulations. The Department of Transport definition of 'trunk' covers routes on which TAA and AAA compete, regardless of the actual importance of the routes involved.

In Chapter 3, both descriptive and quantitative material is presented in an economic appraisal of the general performance of Australia's two major domestic airlines. The data for the analyses have been obtained from industry reports, from the Department of Transport, and from a variety of published material. In Chapter 4, various aspects of the effects of legislation are discussed in detail. Chapter 5 presents a summary of legislative changes which may be usefully considered by Government. It also contains a discussion of avenues for research which may be usefully pursued.

## BACKGROUND RESEARCH

In 1971, Davies[1] published an interesting article concerning the legal and economic consequences of Australia's Two-Airline Policy. His analysis has been updated and is presented in the discussion relating to the economic performance of both major airlines. Economic efficiency is defined in terms of various output levels per airline employee.[2]

In order to determine if plausible variations to existing scheduled fare levels could be conceived, it was considered necessary to establish costs in relation to services operated on the major trunk routes. Details of the various analyses are presented in Chapter 3. The essential data, relating to the costs of operating DC9-30, B727-100 and B727-200 aircraft on a block time basis have been derived from industry sources and from the Department of Transport. The trip costs are used as estimates of theoretically unregulated fares. These estimates are then compared to scheduled fares on the various routes.

A major problem which arose in developing an analytic framework to review the efficiency of the existing legislation was that of

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(1) See Davies, D.G.
(2) There are of course a number of ways by which economic efficiency can be defined.

specifying the objectives of general policy as it related to domestic air transport in Australia. In the general conduct of regulated industries, the major government objective should be to maximise social welfare[1], i.e. the sum of both consumer surplus and producer surplus. The approach which has been adopted in Chapter 4, where aspects of regulatory reform are discussed, has been to consider consumer welfare in detail. It is argued that since World War II, economic and technological progress has basically altered the political and market environment for air transport in Australia, as in other developed economies. In the 1930's and 1940's a young and inexperienced domestic airline industry needed to be encouraged. Today, however, the industry appears to have reached a stage of maturity characterised by a reduced rate of traffic growth in particular market segments, by an increased concentration of network services and by an Australia-wide reduction in the number of airports serviced by the major operators. Hence, the argument which is advanced in this Paper is that the needs and aspirations of the consumer should be considered, rather more closely than those of the major producers of domestic airline services.

In order to provide some insights into the need for the introduction of changes to existing legislation (and in some instances for a more positive enforcement of legislation), an appreciation of the historical development and content of existing legislation is presented in the following chapter.

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(1) Consumer surplus and producer surplus represent expressions of market operations. Consumers' surplus from the purchase of a service is the difference in dollars between the amount which the consumer pays and the maximum amount which the individual would be prepared to pay. Producers' surplus refers to the difference between the costs of production and the price which will be acceptable to the producer.

## CHAPTER 2 - HISTORIC DEVELOPMENT OF GOVERNMENT REGULATIONS

### DEVELOPMENT OF LEGISLATION

Government policies represent only one of a number of factors which influence the current and the likely future provision and operation of air transport services within Australia. While it is these policies which are under specific scrutiny in this review, they need to be kept in perspective.

In any discussion of the rationale for Commonwealth Government involvement with domestic air transport in Australia it is useful to ask initially :

- What has been its purpose?
- What has government intended to achieve?
- Has there been too much or too little government intervention in the past with consequent adverse effects on the development of airline services in a particular direction?

The general belief is that regulation is intended in part to protect the public interest. That is, regulation of the market by government is warranted when competition within the transport system is (or is believed to be) an inadequate regulator for various reasons. In this context, it is interesting to review the steps in the development of domestic air transport regulation in Australia. The historic development of the current legislation relating to the major airlines operating within Australia is well documented. For transport historians, it represents a most interesting phase in the development of Australian transport.

The first steps in government involvement in interstate air transport operations were taken in 1919, when certain controls were introduced by the Commonwealth Government over air safety. The time period 1919-1939 represents a period of development during the 1920s and economic crisis during the 1930s. An important stage in the development of the industry was the formation of

the Australian National Airlines Commission (TAA) in 1945, following the passing of the Australian National Airlines Act in 1945.

The first major step by government in establishing the system of domestic air transport which currently exists was taken by Prime Minister Menzies, in 1952. In a published letter to ANA on 28 March 1952, he made the following statement:

> 'I should perhaps add that we have discussed the future of the airlines in terms of two major operators, because while we recognise and value the place of the smaller airlines we believe that all experience indicates that in our present state of development there is no room for more than two major national operators if the necessary standards of efficiency are to be maintained.'

On 30 October 1952, the first Civil Aviation Agreement Act was passed. The Act was expressly concerned with the continued existence of both ANA and TAA as competitive operators, each providing for the carriage of passengers (including government business), freight and mail. The general objectives which were expressed in the Act were to encourage interstate trade and commerce. The economic objectives were couched in broad phrases such as 'efficient and economical operation of air services' (preamble to the 1952 Act), avoidance of 'unnecessary overlapping of services and wasteful competition' and provision of the 'most effective and economical services with due regard to the interests of the public and to bring earnings into a proper relation to overall costs.'

It may be inferred that greater emphasis appeared to have been placed on maintaining a satisfactory financial status for the

two operators rather than on protecting or improving consumer interests[1].

The passing of the 1952 Act represented the first attempt by Government to establish a stable system of two-operator competition on the major domestic air transport routes. The Act was specifically directed towards a rationalisation of the industry, in terms of the services operated by both TAA and ANA. The activities of the smaller airlines, such as Ansett Airways, East-West Airlines and Butler Air Transport were not directly affected by the provisions of this legislation. An important item in the initial Act was the provision of funds for the re-equipment of the private airline (ANA) which was unable on its own to match the financial strength of the Government-financed Airlines Commission (TAA).

The Act facilitated the re-equipment of ANA and gave the company the opportunity to compete on a more equal basis with TAA. The fact that it failed to do this successfully was no fault of the Act. The financial difficulties of ANA remained. This finally led to the situation in 1957, when Ansett Transport Industries gained financial control of ANA.

The 1952 Act further recognised that in order for the rationalised competition between TAA and ANA to work effectively, it was considered necessary that both competitors should have comparable equipment and offer equally attractive frequencies of service.

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(1) The 1952 Act also made provision that the Commission (TAA) and the Company (ANA) must keep under review air routes, timetables, fares, freights and other related matters (clause 7). This was intended to rationalise the services provided by the two operators. Disputes were to be settled by a decision given by an independent arbitrator. In addition, aircraft operated by the Company and the Commission which were the subject of financial assistance were to be 'comparable in type and price' and subject to approval by the Chairman of the committee set up to ensure rationalisation. Approvals were to be given so that 'available aircraft ...(were) ....equally divided' between the two operators.

Again, from an examination of this Act, the dominant elements of the domestic air transport industry which exist today can be recognised. This also serves to highlight the weight of historic precedent which lies behind the current agreement affecting both TAA and AAA.

It was recognised in 1952, that although competition between TAA and ANA was to be permitted only on certain interstate routes, the activities of the additional airlines involved with other routes should not be restricted. However, under the powers of the Constitution, the Commonwealth was unable to refuse the issue of a licence on an interstate route to any operator who was able to fulfil all safety requirements. In 1957, following the failure of the 1952 Act to achieve a successful financial rationalisation of the activities of ANA and TAA, a second Civil Aviation Agreement Act was enacted. In September 1957 Senator Shane Paltridge, the Minister for Civil Aviation stated:

> 'To eliminate the recurrent crises in the aviation industry and to establish a framework for long-term development the government considers it is a matter of national importance to eliminate these causes of instability. The policy which we have adopted is basically the same in concept as that embodied in the 1952 Civil Aviation Agreement Act - that of providing fair and equal conditions of competition for two major operators.'

On October 1957, a agreement for the sale of ANA Pty Ltd to Ansett Transport Industries Ltd was signed. A new management structure was immediately introduced to the newly-owned ANA airline. It is of interest to note that one of the conditions of the sale of ANA to ATI was the sale also (as a separate transaction) of the ANA Board Members' holdings in Bungana Investments (which held a majority of shares in Butler Air Transport). It is possible to identify from this move the first evidence of the determination of the new owners of ANA to ensure a limit to the number of private-enterprise airlines operating interstate air services in Australia.

The Civil Aviation Agreement Act 1957 strengthened the rationalisation machinery available to industry. It did not overcome the problems of the disparity between aircraft types and capacity operated by TAA and the new ANA. A major issue was that the private airline was still able to import any technically satisfactory aircraft. The various Government guarantees, provided for under the 1952 Act, were considered by ATI as insufficient for the private operator to undertake the extensive re-equipment program which was considered necessary to match the fleet which was operated by TAA. In 1958, the first of the Airlines Equipment Acts was enacted. Detailed provisions for rationalisation of available capacity and for financial assistance for fleet requirements were contained in this Act. These provisions reinforce the assertion that, historically, Australian Governments have been concerned primarily with maintaining financially viable operating conditions for two major airlines operating services between major population centres. It is interesting to note that the essential elements of the 1952 Act, which were subsequently continued in the 1957 Act, did not initially apply to ATI. However, since 1957 ATI has received the benefits of successive government agreements derived from the earlier agreements which were originally designed to cover the operations of TAA and ANA.

The wording of the clauses contained in the 1961 Agreement between TAA, ATI and the Commonwealth Government related primarily to both airline operators introducing similar services between the same centres on the same day. The agreement also limited the extent to which the Commonwealth could impose higher air navigation charges[1] and fuel taxes. Again this emphasises the Government's desire to maintain the financial viability of both major operators.

(1) The later 1972 and 1973 Agreements included provisions by which the Company and the Commission recognised the right of the Commonwealth to recoup costs properly attributable to the provision of facilities for civil air transport, with a target of 80 per cent set in 1973 to be reached progressively. However, the Minister was also committed to approve increases in tariffs if the cost recovery policy caused loss or loss of profit by either TAA or Ansett Transport Industries (Operations) Pty Ltd (Airlines Agreement Act 1952-73, schedule 4, clause 7).

The 1972 Agreement in many respects continued the nature of the arrangements contained in the 1952-1961 Acts. There were, however, three aspects of this agreement which in principle made some real concessions to the interests of the consumer. The three areas where opportunities were opened up for the development of new or increased markets for air transport services were :

- The provisions for promotional fares;
- The encouragement of air freight shipments;
- The encouragement of operators other than TAA and AAA on certain non-trunk routes.

The first two of these remained subject to the review provisions of Government which placed limitations on the actual competition which might be involved between the two operators and on the extent to which innovative ideas could be introduced. The encouragement of additional operators related to regular and charter operations on non-trunk routes and specialist freight and passenger services including lower cost tourist services. In all cases, the introduction of new services involved the condition that the Federal Minister for Transport was of the opinion that the services were not already being adequately provided by TAA or AAA. Therefore, the real contributions which these changes made to the interests of consumers were heavily dependent on the discretion of the Minister. This was reinforced by the fact that the conditions also included prior approval for the importation of suitable aircraft.

The major objective of the two-airline policy since 1952, namely to maintain two major airlines operating profitably on the major trunk routes, may be considered to have been satisfactorily achieved. However, only limited formal regulatory or administrative weight has been given to the other stated objective of having 'due regard to the interests of the public'. Throughout the life of the various Civil Aviation Agreements, consumer interests have not been expressly represented at discussions, nor are specific measures for protection of these interests embodied

in the various relevant items of legislation, except in matters of safety. Furthermore, since the agreements reached by the two operators and by Government under this legislation do not appear to be examinable under the Trade Practices Act 1974 (section 51(1)), the effects of airline operations on consumer welfare are excluded from any effective form of public scrutiny.

A major conclusion which can be drawn from this historic account of the development of legislation concerns the considerable weight of historic precedent which may serve to support the continued existence of the Two-Airline Policy in its present form. It is important to appreciate that the concept of a system of two major domestic airlines was first outlined by Prime Minister Menzies in 1952. Furthermore, it is interesting to recall that the years of 1952-1957 represented a period of considerable instability and development for the industry. In contrast, the years 1957-1978 may well be regarded as representing a period of comparative stability and strong growth for the industry. An important question when discussing changes to the system is whether stability itself should remain the prime objective, to the exclusion of the possible disability effects of increased competition.

## SUMMARY OF CURRENT REGULATIONS

The current Government regulations which have the most direct effect on the provision and operations of domestic air transport services in Australia relate to licensing, safety, fares, capacity and cost recovery. Each is discussed briefly in the following paragraphs.

### Licensing

All commercial operators (including intrastate operations) of air transport services in Australia, including those providing regular

public transport services and charter services[1], must be licensed under the Air Navigation Act 1920-73 and Air Navigation Regulations.

In the states of New South Wales, Queensland, Western Australia and Tasmania, intrastate operators must also hold a State licence under various forms of State legislation. These State licencing arrangements are outlined below.

In New South Wales, intrastate air services involving carriage of goods or passengers for reward are also prohibited except under licence granted by the Commissioner of Motor Transport under the Air Transport Act 1964. Under this Act, the aircraft to be used, the pilot and the specific routes on which the services are provided must be licensed. In granting or refusing a licence or imposing conditions on the granting of a licence, the Commissioner is to have due regard to the needs of New South Wales as a whole or those of any area or district. He is also to consider existing services by air, existing or likely services by other modes and the effect on them of the proposed service. Routes may be allocated so as to foster the operation of more than one airline in NSW. Fees and conditions may be prescribed for licences.

The Queensland State Transport Acts 1960 to 1965 prohibit the carriage of passengers or goods intrastate except under a State licence (Section 58). Licences for air transport services relate to specified routes (Section 59). Licence fees are set at the

(1) A charter licence does not give the operator authority to operate a charter service more than once every four weeks on routes where regular public transport services are operating, except where specially authorised to do so by the Director-General of Civil Aviation. It is also noteworthy that since 10 October 1964, in determining whether a licence shall be granted for charters on regular airline routes, or in determining conditions of a licence, the Director-General is permitted only to take into account such matters as safety, regularity and efficiency of air navigation. The economic welfare of consumers appears not to have been a major issue for concern.

discretion of the Commissioner (Section 61) and may be a fixed amount, a fixed amount per aircraft used, or a percentage of gross revenue from the service. In each case the licence fee can range up to a maximum of 20 per cent of the gross revenue from the licensed service.

Intrastate air services in Western Australia must be licensed under the Road and Air Transport Commission Act 1966. Routes and areas to which the licence applies are specified, and the Commissioner may attach (or change) conditions of the licence regarding routes, areas, timetables, fares, freight rates, statistics and records to be kept. Before the grant of a licence the Minister may take account of the necessity for the service and the convenience which it provides to the public, the adequacy of existing services and the effect on them of the proposed service.

The Tasmanian Transport Act 1938 empowered the Transport Commission to control air transport as well as other modes and to make regulations for that purpose. Intrastate public air transport services are required to be licensed and in granting the licence the Commission may impose conditions and restrictions. Statistical returns must be made and a percentage of all fares and freight revenue received must be paid to the State Commissioner for Transport.

In this respect, the situation is similar to that which applies in Victoria and in South Australia where statistics must be provided and revenues paid to the State Departments. In the Commonwealth Territories (NT and ACT), the relevant Commonwealth Departments are responsible for all forms of public transport services.

Safety

Safety aspects of all air transport operations are subject to Commonwealth control under the Air Navigation Act 1920-1973 and

Air Navigation Regulations. Public safety and efficiency of the service at both the Commonwealth and the State level must be ensured.

Fares

Under the authority of the Air Navigation Regulations, Part XIII Division 6, the owners of aircraft engaged in public transport services which use aerodromes, air routes and facilities maintained and operated by the Commonwealth must obtain approval of fares and freight rates (and variations) from the Minister. The Federal Minister for Transport has the power to direct that fares and freight rates are charged on a basis which he regards as fair and reasonable.

The rationalisation provisions of the Airlines Agreement Act 1952-1973 also require that fares and freight rates on scheduled services operated by TAA and AAA should be subject to review and agreement. On the other hand, tariffs on intrastate services must be specifically approved under the relevant State legislation in Western Australia and Tasmania. In New South Wales and Queensland such tariffs may be regulated under the general provisions by which the controlling authority may impose conditions on the licence.

Capacity

On services operated by TAA and AAA under the Airlines Agreement Act 1952-1973, timetables, frequencies, stopping places, types and capacities of aircraft used and passenger and freight load factors necessary to permit both TAA and AAA to operate profitably are subject to review and agreement under the rationalisation provisions. In New South Wales, Queensland, Western Australia and Tasmania the licences issued for intrastate air services are usually for specific routes and services. The type of aircraft which will be used must be specified in New South Wales, Tasmania and Western Australia, before the licence is granted.

The Airlines Equipment Act 1958-1973 enables the Commonwealth to control fleet size and operating capacity of TAA and AAA, the Federal Minister for Transport being required to give written approval for the acquisition by these two operators of aircraft with an all-up weight of 20,000 pounds[1] or more.

In general, the control which may be exercised by the Commonwealth over the importation of all aircraft means that the ultimate control over fleet capacities is firmly held by the Commonwealth.

Cost Recovery

Charges are payable by the airlines to the Commonwealth for the use of aerodromes, air route and airway facilities, meteorological services and search-and-rescue services maintained, operated or provided by the Commonwealth. These charges are levied by authority of the Air Navigation (Charges) Act 1952-1973 and subsequent Amendments to 1976.

TAA and AAA are also bound by the Airlines Agreement Act 1952-1973, in respect of the services which they provide, to negotiate with the Commonwealth to ensure that the Commonwealth objective of 80 per cent recovery of the annual cost of civil air transport facilities is met (Schedule 4, Clause 8). Results of current BTE research indicate that the 80 per cent recovery target is not being met by either of the major domestic airlines.

Commonwealth Government cost recovery from intrastate scheduled airline operations appears to be around 20 per cent. Commuter services currently pay an even smaller proportion of their attributable costs. An overall estimate of 7 per cent has been made, and this means that full recovery would involve a very large relative increase in costs. There is no estimate of elasticity

(1) No metric conversion has been introduced.

available, but it seems likely that a large negative impact on demand would follow from full cost recovery in this sector. A similar situation would probably apply for other (general) aviation operations.

DIRECT EFFECTS OF LEGISLATION

The Commonwealth Government since 1945 has exercised what may be described as mainly negative powers over the operations of the domestic air transport industry. These include:

- The Government Airline itself (TAA);
- The Government's import licensing power concerning the introduction of aircraft and support equipment from overseas;
- Control over fuel excise;
- The imposition of air navigation charges;
- Its air safety regulation enforcement procedures;
- Its ability to provide guarantees for loans raised by the various private enterprise airlines including AAA.

The powers of the Commonwealth Government as developed through successive legislation (starting in 1952 with the first Civil Aviation Agreement Act) still remain. Yet, under the powers of the Commonwealth Constitution, the Commonwealth remains unable to refuse the issue of a licence on an interstate route to any operator who is able to comply with the Department of Transport's safety requirements. Thus any potential operator could in theory choose to ignore any Government ruling against additional competition on a particular route. However, under the powers of the Customs (Prohibitive Imports) Act, the importation of aircraft over a particular weight requires the permission of the Department of Transport. This acts as a potent and practical deterrent to entry of additional operators.

The actual determination of capacity operated by TAA and AAA is performed separately for competitive and non-competitive routes and by mixed configuration and all-cargo aircraft types. The key

variables in this determination for each airline are the traffic variation factor, the revenue weight factor, the optimum revenue load factor and aircraft productivity standards. Appendix I presents a detailed account of these factors and of the procedures involved.

There are several apparent problems with this procedure. The existing manner in which the determination procedure is administered by the Department of Transport encourages a high degree of co-operation between the two operators when agreed values for the relevant variables are submitted finally to the Minister for Transport. This application of the procedure no doubt reduces the administrative costs which might otherwise be involved. On the other hand, it does introduce a very high degree of co-operation on a crucial feature between two ostensibly competitive organisations. Also, the practice of forecasting traffic in any six-month period on the basis of figures produced for the corresponding period in the preceding year does not appear to generate accurate estimates.

In cases where agreement cannot be reached by the operators on a variable such as productivity levels relating to aircraft utilisation, the situation may be resolved by the Minister selecting a particular level. However, this application of the regulations may introduce undesirable side-effects. If, for example, traffic is tending to favour one operator, the other may propose productivity standards[1] high enough to limit the extent to which preferences of consumers can be accommodated by the first operator. The effect of this can be to re-allocate traffic away from the operator preferred by the consumer of the service to the less preferred operator. Whilst the profitability of both airlines may be safeguarded in this process, the preferences of consumers may well be overlooked.[2]

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(1) Productivity standards are measured in terms of available capacity (in tonne-kilometres) for a particular aircraft type. See Appendix I.

(2) The major purpose of the capacity determination procedures is to ensure effective control over the available aircraft capacity in the provision of services.

The revenue weight factor and the optimum revenue load factor appear to be set on a basis for which the objective is not immediately apparent. The revenue weight factors for the several traffic categories on mixed-configuration and all-cargo aircraft respectively are each based on the principal traffic carried. There appears to be no strong motive for continuing to make divisions of capacity for particular purposes. If capacity determination calculations were made in terms of tonne-kilometres with no revenue weight factor adjustment, increased flexibility would be available to each operator. Each airline could utilise that capacity and maximise return according to the configuration of aircraft and the desire for specialist business. This could be more in line with the long-term objectives of each airline.

Separate capacity determination for non-competitive routes appears to limit introduction of new services or additional services on existing routes rather than promote competition between operators for additional traffic. The reason for this is that there is usually only one carrier on any of these routes. The regulations thus tend to reinforce the monopolistic characteristics of non-competitive routes.

It does appear evident that the determination of capacity for competitive and non-competitive routes tends to serve the interests of airline profitability to a greater extent than it serves consumer preferences relating to the quality and selection of services.

## FUTURE CONSIDERATIONS

Regardless of the long-term future of the existing Two-Airline Policy, it is considered important that greater attention should be given to the issue of capacity determination. The level of available capacity is considered to be a crucial factor in determining the future operation of services of a different nature to those currently provided for under a wholly-scheduled

system. Any experimentation with charter programs or with the introduction of lower-cost services not in competition with normal scheduled services would require that capacity limitations be overcome. The capacity estimation procedure appears sufficiently troublesome to warrant amendment. Two possible options which are considered worthy of further research and evaluation are outlined below.

The first option is that the capacity determination should be abolished for both competitive and non-competitive routes. However, it is also envisaged that active control would be exercised by the Minister for Transport over fare and freight rate schedules and any variations to these factors. It is suggested that applications by the operators for increases in fares and freight rates should not be subject to prior agreement before an approach is made to the Minister. In fact, such agreement might actually be prohibited. However, supporting data on costs and profitability should accompany any such application. It seems feasible for the Department of Transport to obtain up-to-date information for the purposes of comparing cost levels of other airline operators in Australia and overseas.(1)

The second option is to retain the capacity determination in a modified form for competitive routes only. Fare and freight schedules for competitive and non-competitive routes would also be subject to Ministerial control. Suggested modifications to the capacity determination procedure for competitive routes which could be considered are as follows:

. The traffic forecast for the six-month period under consideration should be based on as recent information as possible. Traffic statistics for the corresponding period in the previous year could be progressively up-dated by figures for each following four-week period whilst the new capacity estimate is being developed;

(1) In fact, the BTE has already performed some work in this area. See K.R. Mackay, Performance Assessments of Australian and Overseas Airlines, (BTE Occasional Paper No. 13, Canberra: A.G.P.S., 1978 (forthcoming)).

- The revenue weight factor could be abolished;

- Aircraft productivity standards could be proposed separately by each of the airline operators, and each proposal should only apply to the operator making it. Different productivity standards could apply to each airline, consistent with their applications. However, each proposal should be supported by material on achieved productivity in operations together with forecast downtime arising from such events as major overhauls;

- The concept of an optimal traffic load factor could be substituted for the existing optimal revenue load factor concept. It would be desirable for the reasons underlying the choice of the optimal traffic load factor to be made public from time to time;

- Even when a 'required' capacity has been derived by these procedures, there is no apparent reason why the figure should be identical to the figure actually allowed. For example, if each airline was allowed, say, 55 per cent (in the case of a two-airline system) of the required capacity, a useful level of real competition might be achieved without undue risk of generally excessive capacity overall.

Provided that effective price controls exist, it is not readily apparent that complete abolition of the capacity determination procedure would create any deleterious effects. Additional non-price competition would be encouraged and a more rigorous examination of fare levels and freight rates than that which is currently practised by Government would be required. It is unlikely that this would be any more cumbersome or prone to undesirable side-effects than the current scheme. Provided that fare levels are regulated to an optimal level in relation to costs, the levels of service supplied by the airlines would eventually adjust to satisfactory values.

## CHAPTER 3 - ECONOMIC ASSESSMENT OF AUSTRALIA'S MAJOR DOMESTIC AIRLINES

### STRUCTURE OF THE DOMESTIC AIRLINE INDUSTRY

#### Spatial Organisation

The Australian domestic airline industry is characterised by the dominance of the two major airlines, TAA and AAA. TAA represents a direct Commonwealth Government involvement in the industry, whilst AAA is privately owned and operated. The significance of TAA and AAA in relation to the total domestic air transport task can be recognised from Table 3.1. Approximately 95 per cent of the total scheduled tonne-kilometres flown in 1975-76 were completed by TAA and AAA.

TABLE 3.1 - STRUCTURE OF SCHEDULED DOMESTIC AIR TRANSPORT SERVICES 1972-73 AND 1975-76

| | 1972-73 '000 Tonne-km Performed | Per Cent of Total | 1975-76 '000 Tonne-km Performed | Per Cent of Total |
|---|---|---|---|---|
| Scheduled Services under Capacity Determination | | | | |
| Competitive routes operated by two major carriers | 577,741 | 87.8 | 700,619 | 86.8 |
| Non-competitive routes[a] | 59,432 | 9.1 | 66,542 | 8.3 |
| Total traffic subject to Capacity Determination | 637,173 | 96.9 | 767,161 | 95.1 |
| Commuters[b] | 3,387 | 0.5 | 8,695 | 1.1 |
| Other Scheduled Carriers[c] | 17,194 | 2.6 | 30,756 | 3.8 |
| TOTAL | 657,754 | 100.0 | 806,612 | 100.0 |

(a) Includes all ATI subsidiary services.
(b) Charter operators exempted under Air Navigation Regulation 203 from the need to have a Regular Public Transport licence before operating scheduled services.
(c) EWA and Connair services.

The growth in the domestic air transport passenger services performed by the major airlines for the period 1971-72 to 1975-76 is reflected in Table 3.2. The estimates are in terms of revenue passengers embarked.

In contrast to the major scheduled operators, the passenger capacity of the charter services (including commuter airlines) increased from 16 million seat kilometres at 30 June 1968 to 124 million seat kilometres at 30 June 1976. The role of the charter-commuter airline was originally to provide feeder services to the scheduled airlines and to provide services in remote areas of Australia. However, the commuter airline has emerged also as an important factor in inter-city air transport. On the Sydney-Newcastle route, two commuter airlines are currently in active competition with a scheduled airline.

An important aspect of the development of the domestic air transport industry in recent years has been the consolidation of service networks and a reduction in the number of airports served by scheduled and non-scheduled airlines throughout Australia. This consolidation may serve to indicate that the industry has reached a certain maturity in its 'life cycle'. Table 3.3 indicates the reduction in the number of airports served since 1965. The Australia-wide shrinkage from 413 to 158 airports served has not been uniformly distributed. It has been most significant in Queensland and Western Australia.

Ownership and Control

As discussed in the previous Chapter, the structure of the Australian domestic airline industry is the direct result of the Commonwealth Government's intervention in domestic air transport since the establishment of TAA in 1945 and the introduction of the 1952 Civil Aviation Agreement Act. Trans-Australia Airlines (TAA) is owned by the Commonwealth Government of Australia, and is operated as a Statutory Authority (the Australian National

TABLE 3.2 - SCHEDULED DOMESTIC AIR SERVICES (REVENUE PASSENGERS EMBARKED)

| Airline | 1971-72 | 1972-73 | 1973-74 | 1974-75 | 1975-76 |
|---|---|---|---|---|---|
| Trans-Australian Airlines | 2,909,500 | 3,296,375 | 3,856,530 | 4,131,839 | 4,055,660 |
| Ansett Airlines of Australia | 2,766,900 | 3,134,907 | 3,801,392 | 3,920,424 | 3,949,271 |
| Ansett Airlines of NSW | 271,500 | 306,776 | 335,647 | 382,382 | 370,886 |
| Ansett Airlines of SA | 158,838 | 164,634 | 192,157 | 202,659 | 215,098 |
| MacRobertson Miller Airlines | 288,002 | 261,379 | 312,934 | 322,511 | 304,082 |
| East-West Airlines | 327,280 | 385,413 | 435,255 | 479,246 | 444,631 |
| Connair | 23,117 | 26,650 | 39,504 | 47,241 | 53,961 |
| All Domestic Services (a) | 6,769,792 | 7,603,895 | 9,003,674 | 9,508,798 | 9,415,747 |

(a) Includes scheduled commuter services.
Source: Department of Transport 1975-76, A.G.P.S., Canberra, 1976.

TABLE 3.3 - AUSTRALIAN REGULAR PUBLIC TRANSPORT SERVICES - NUMBER OF AIRPORTS SERVED[a]

| State | At January - | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1965 | 1970 | 1973 | 1974 | 1975 | 1976 | 1977 |
| N.S.W. | 52 | 40 | 36 | 35 | 35 | 34 | 31 |
| Vic. | 12 | 6 | 3 | 3 | 3 | 3 | 3 |
| Qld. | 109 | 95 | 83 | 42 | 41 | 38 | 37 |
| S.A. | 22 | 16 | 16 | 10 | 11 | 11 | 10 |
| W.A. | 90 | 42 | 40 | 39 | 37 | 35 | 20 |
| Tas. | 9 | 7 | 6 | 6 | 5 | 5 | 5 |
| N.T. | 118 | 98 | 92 | 81 | 72 | 69 | 51 |
| A.C.T. | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| AUSTRALIA | 413 | 305 | 277 | 217 | 205 | 196 | 158 |

(a) Excludes airports served by commuter operators. Commuter services are now scheduled to many, but by no means all, of the centres which have lost RPT services since January 1965.

Source: Quinlan, H.G., Timetables as a Source of Statistical Data, (BTE Occasional Paper No. 9, Canberra: A.G.P.S., 1977.

Airlines Commission). The other major airline (AAA) is privately owned and operated by Ansett Transport Industries (ATI). ATI also owns and operates scheduled airlines in New South Wales, South Australia and Western Australia. In addition to the TAA and ATI airlines, there are two other scheduled airlines, Connair Pty Ltd and East-West Airlines. Both are privately owned and operated. Connair currently receives an Australian Government subsidy to provide services on particular remote-area routes. In 1975-76 the amount of subsidy was $608,000.

In addition, Bush Pilot Airways receives a subsidy from the Commonwealth Government for the operation of specific services in Northern Australia. In 1975-76 the level of subsidy was $100,000.

Whilst AAA is wholly owned by ATI, it has received loans capital under guarantee by the Commonwealth Government. These payments have been authorised by various Equipment Acts passed by Government. At 30 June, 1976, a total of $49.42 million remained outstanding. In order to re-equip, TAA is able to arrange loan finance through the Treasury. In 1976, TAA borrowed $7.54 million as part payment for its re-equipment program.

One of the most important aspects of the domestic air transport industry in recent years has been the growth in the number of commuter airlines and in the services provided by these airlines. All charter airlines are privately owned, and as at 30 June 1976 32 firms were operating various types of services. Many of these airlines operate as supplemental carriers to the larger scheduled airlines and share terminal and other ground facilities at the major airports.

Finally, there are the air services of an ancillary nature. The ownership of aircraft is diffuse and services are provided to remote properties, to mining companies, to inland missions and for medical purposes in remote areas. There are also numerous private operators as well as organisations engaged in aerial agriculture and pilot training activities.

## CONDUCT OF THE DOMESTIC AIRLINE INDUSTRY

### Characteristics of Monopoly and Duopoly Firms

In order to assess the effects of current regulations, it is considered necessary to be able to identify the performance which might be expected of both domestic airlines in the absence of any government regulations. It is also considered necessary to ascertain if the current regulations result in airline performance being more socially desirable than that which would have occurred under different regulations.

Although there is a large number of airlines involved with domestic aviation in Australia, there is only a limited degree of competition on the major intercity routes. The dominant market structure is that of a duopoly, comprising TAA and AAA. However, in specific geographic regions, the smaller scheduled and charter airlines operate as monopoly firms. The major airlines also operate in monopoly situations on non-competitive routes. The existence of both duopoly and monopoly firm structures reflects direct government policy in most cases. However, a number of naturally-occuring monopoly structures may be recognised on various non-scheduled routes. EWA and Airlines of New South Wales, for example, operate monopoly[1] services between many population centres. However, the presence of regulations other than those controlling the entry of additional operators onto the various routes may affect the way in which the existing airlines behave under monopoly and duopoly market conditions. Market behaviour by TAA and AAA involving particular routes may also be affected by factors external to those routes. Such factors could include industrial or aircraft scheduling problems. On the other

(1) In some cases, these services had their origins in regulated monopolies generated by particular licensing arrangements. More recently, some airlines have not had opposition in seeking licences for particular routes. Hence, they appear to have developed natural monopoly conditions.

hand, market behaviour involving monopoly routes could conceivably be influenced by the threat of an additional or a larger operator gaining a licence on the route in the event that the particular route is developed adequately. In order to understand the effects of existing Government legislation on the way in which air transport services are provided, it is necessary to examine expected price and output behaviour in a pure monopoly situation and in situations involving various types of duopolies. These situations are outlined in detail in Appendix II and are summarised below.

The pure theory of monopoly suggests that the particular firm involved will behave in such a way as to set its price and output levels so that output will be restricted and super-normal profits will be earned at the expense of consumers. In these circumstances, a plausible case could be developed for government intervention to force the monopolist to extend his output to where price is equal to marginal cost, thus eliminating excess profits.

A similar situation arises in a generalised duopoly situation in which both firms have identical costs. In the absence of other influences, the price and output levels would be set at the same level that a monopolist would set if he were in complete control of the two producing facilities. In practice, however, the costs of production for individual firms are likely to differ. This, coupled with the inevitable difference in interests of the firms comprising the industry, will lead to compromise and will prevent industry profits reaching the levels attained in an equivalent monopoly situation. However, due to a number of difficulties (such as variation in costs and inferior substitutes) pricing and output behaviour is likely to be uncertain. The general tendency will be to restrict output and to generate super-normal profits at the expense of the consumer. As with the expected behaviour of a monopolist, a duopoly also warrants a case for government intervention to attempt to bring the behaviour of the two firms more into line with a pricing and output policy which is efficient and at the same time socially desirable.

As a final point in this brief treatment of monopoly and duopoly situations, it should be emphasised that government intervention is warranted to regulate price and output to socially desirable levels. No economic theory exists to suggest that social welfare will be increased by intervention aimed solely at preserving the monopoly or duopoly itself. Welfare improvements in such cases can only come about by intervention on behalf of the consumer.

## Conduct and Behaviour within the Regulatory Framework

Current government involvement in the regulation of domestic air transport services in Australia has been briefly described earlier. An important question which remains is whether or not these various regulations are the appropriate ones to ensure that there is acceptable airline performance, in terms of Commonwealth Government objectives.

The objective of maximum economic efficiency, as related to the domestic air transport industry, is difficult to define broadly[1]. In general terms, the concept of economic efficiency may be defined simply as the optimum balance between productive output and resource input. Maximum efficiency is characterised by a situation in which it is impossible to further increase the output of a particular commodity without decreasing the output of another commodity[2]. If externalities[3] are assumed to be absent from the production process, then under conditions of maximum economic efficiency, the resource inputs are so allocated to the various commodities that it will not be possible to improve the welfare of any particular consumer without decreasing the immediate welfare of consumers of alternative commodities.

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(1) In the Two-Airline Policy, only indirect mention is made of economic efficiency (in the preamble to the 1952 Act). However, concepts of 'financial return' and 'due regard to consumers' may be interpreted as elements of economic policy.
(2) This assumes a full employment of resources.
(3) The types of externalities or extra-market effects in relation to the domestic air transport industry include aircraft noise, air safety and air pollution.

Relating theoretical conditions for economic efficiency to the actual operations of TAA and AAA, an important issue is whether or not additional or alternative air services could be provided, given the existing private and government commitment of resources. Another way of stating this issue is that it may well be that alterations to the existing regulatory environment could result in a decreased commitment of resources while still providing a similar level of capacity and overall service to that which is currently provided by TAA and AAA.

One of the necessary conditions for economic efficiency is technological efficiency(1). Economic efficiency also requires certain conditions for pricing. These are that price equals marginal cost and that price also equals average cost, except in the case where the marginal cost associated with a particular undertaking is below the average cost over the relevant range of demand. In theory, it may be demonstrated that if price exceeds or is less than marginal cost then output will be less than or greater than optimal respectively. Equally, industry investment will be at an optimal level, when price equals average cost.

However, economic efficiency is only one of a number of objectives which governments may pursue. They may also be interested in industry employment, airline safety, regional development and national defence. These objectives can be consistent with the objective of economic efficiency or they may conflict with such an objective. However, decision-makers should always be fully aware of the costs of pursuing non-economic goals.

It is common in economic analyses of specific industries to take as a benchmark the conditions for economic efficiency outlined above. However, in actual practice it is extremely difficult to apply these conditions to a particular situation with any degree of

(1) Technological efficiency is defined here to include technical, operational and managerial efficiency, measured in terms of output per unit of input, or units of input required to achieve a given output when either output or input units are measured in physical terms.

accuracy. The provision of domestic air transport services in Australia is no exception. Nevertheless, economic theory as it relates to the conditions of economic efficiency does provide some guidelines for explaining and predicting industry behaviour in the real world. It is considered important that particular industry characteristics which are unlikely to lead to a socially satisfactory performance should be identified.

In any consideration of social welfare, it is industry performance in the market-place which is important. Bain[1] has identified five principal aspects or dimensions of market performance. These are:

- The level of price relative to the average cost of production, and thus the size of profits;

- The relative efficiency of production so far as this is influenced by the scale or size of plants and firms (relative to the most efficient) and the extent, if any, of excess capacity;

- The size of sales promotion costs relative to the costs of production;

- The character of the product, including choice of design, level of quality and variety of product within any market;

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(1) According to J.S. Bain (Industrial Organisation, 1955), market structure may be defined for practical purposes to mean those characteristics of the organisation of a market which seem to exert a strategic influence on the nature of competition and pricing within the market. Market conduct refers to the pattern of behaviour which enterprises follow in adapting or adjusting to the markets in which they sell (or buy). Market performance refers to the composite of end results in the dimensions of price, output, production cost, selling cost, and so forth which enterprises arrive at in any market as the consequence of pursuing whatever lines of conduct they espouse.

- The rate of progressiveness of the firm and industry in developing both products and techniques of production, relative to attainable rates and also relative to the costs of such progress.

Government legislation may be introduced to regulate performance directly through measures such as the determination of fares and/or output. It may also be introduced to establish market structures and patterns of market conduct which will lead to satisfactory performance. It may be argued that government regulation of market structure and conduct will generally be a more satisfactory method of achieving appropriate industry performance than the direct regulation of market performance. Both the information which is available currently and the nature of observed market behaviour indicate that there is scope to increase national welfare through changes in the current regulatory environment.

Certain issues have been identified as areas in which significant changes could be introduced. A distinction must be drawn between two aspects of potential changes to the current regulatory environment. The first aspect involves those areas which require a re-orientation of aspects of the philosophy guiding the management of both airlines and the involvement by government. The second aspect covers those areas which require amendments to the existing legislation before changes can be introduced either by the airlines or by government. Most of the issues which are to be described in the following paragraphs involve an examination of the necessity for capacity limitations. The areas in which significant changes could be introduced include:

- Determination of fare levels and levels of aircraft capacity;

- Relationships between co-operative agreements and innovation in the industry;

- Government licensing and the concept of charter services;

- The level of technological efficiency (as defined above) within TAA and AAA;

- The role of the consumer and of consumer advocacy.

There appears to be adequate scope within the current legislation for the Government to regulate air fares and scheduled services in line with its objective through the capacity determination procedure, through the licensing system and through direct control of the importation of aircraft. However, it is difficult to determine if Government is in a position to assess with any order of accuracy what fare and service levels would be theoretically optimal. Consequently, it is equally difficult to determine whether or not the actual fares and capacity levels are likely to approach an optimal level.

It may be a relatively simple task for Government to ensure that any proposed increases in fares are justified as the result of increases in various cost categories, and that cost increases can be substantiated by the individual airlines in accordance with the guidelines set down by the Minister for Transport. Yet, a major difficulty exists in determining the nature of the relationship between the actual fares charged for particular services and the total fixed and variable costs associated with providing those services. It is freely admitted that this is a complex and time-consuming process, but it is nevertheless one which is justified by the importance of this facet of market performance. There is no evidence to indicate that this exercise has been carried out for Australian air transport in any detail in recent years.

Concern is also expressed with regard to the current fare-setting arrangements of a constant flag-fall and rate per kilometre. This type of structure may well be preferable to the previous ad hoc historically-based rate structure. However, it does not

allow for any flexibility in setting fares on a particular route in relation to the costs associated with air transport services or the potential demand on that route. It also permits and even encourages cross-subsidisation between routes. The vexed question of how closely fares should be related to production costs is considered to be unresolved at this stage. It represents an avenue worthy of future research.

Level of Competition

The artificial restriction on the level of available aircraft capacity which can be operated by both airlines at any point of time is recognised as creating a number of problems. Two basic issues are recognised. Firstly, there is the question of the desirable level of total capacity which is committed by both airlines, to serve the Australian market. Secondly, there is the issue of the operations of either of the airlines with respect to gaining advantages in terms of extra capacity. The restrictions involved appear to be aimed primarily at limiting the amount of capacity which both airlines have available, so that neither TAA nor AAA is in a position to attempt to gain additional traffic through more intensive scheduling of aircraft on particular routes. This aim in itself needs to be examined in detail in relation to the interests of both the producers (TAA and AAA) and the consumers (the air travellers). Whilst both airlines currently favour this aspect of domestic air transport policy, it effectively precludes the introduction of additional air services of types not currently available in Australia. It also prevents the introduction of an increased number of normal scheduled services which could be marketed at a lower price or which could involve other improvements to the service provided. At the lower end of the fare scale, it precludes serious consideration of stand-by or shuttle services between the major cities. At the other extremity, the introduction of services offering extensive meal/drink facilities, inflight movies and a greater variety of ground services may be restrained by the limitations on capacity.

In a situation where prices are either externally controlled or jointly agreed by producers, the only form of competition which may be expected and which may be observed is non-price competition through differences in the quality of the service provided. The capacity determination procedure has the effect of discouraging individual airlines from being innovative in terms of services alternative or additional to those normally provided. Through the capacity determination procedure, TAA and AAA are effectively forced to co-operate on the capacity levels to be provided on various routes. However, this could well result in an appropriate environment for additional joint action (contrary to the spirit of regulation) to effectively limit both price and non-price competition which might otherwise take place. This is a 'thin-end-of-the-wedge' situation, described earlier, in which regulations actually reinforce an undesirable characteristic of a duopoly arrangement. Yet another symptom of this problem is that it tends to weaken the matching of technical, operational and marketing objectives within each airline. This leads to a 'technical sub-optimisation' process which may be contrary to a full optimisation of production and market factors.

The relative influence of the Government and the airlines in collectively deciding upon the need for additional capacity is unclear. In the absence of detailed forecasts of demand, network effects and other factors, it is extremely difficult for the Government to advise on the need for a change in future available capacity without relying upon the estimates and the rationale of the airlines. Since the airlines are forced to match capacity, it is to be expected that their approach to capacity requirements will be an extremely conservative one. Both airlines would naturally seek to minimise risk levels as part of their commercial objectives. Again, this may not be in the consumer's interests as there is always likely to be a lag between the amount of airline capacity which is available and the revealed preferences of consumers of additional or alternative services.

In the existing artifically-created market structure, it is likely that both airlines would seek to restrict service below the level which would normally be encountered in a competitive environment in order to maximise sales and/or revenue. There is no evidence to suggest that in practice the current regulations relating to capacity restrictions inhibit the airlines from behaving in the manner described. In fact, the current regulations tend to reinforce this situation.

It is not clear if the requirement that the Minister for Transport's approval is necessary for fare variations by the airlines has had any real practical impact on the behaviour of the airlines. In the same way, the impact of the capacity determination required under the Airline Equipment Act is unclear. In general, enforced co-operation of this sort could be considered likely to reduce the desire of both TAA and AAA to be particularly innovative, since their individual expected gains are likely to be small. In particular, their gains relative to each other (which is the main basis for market competition) are likely to be zero. The existing regulations operate to prevent either airline gaining a significantly greater share of the total market. One of the social costs of government-induced industry stability is always reduced likelihood of innovation and market penetration by firms. It should be noted that stability in itself is not necessarily a particularly desirable characteristic. Generally, competition relies upon instability; the firms within an industry which produce at excessive cost levels are forced out to allow more efficient firms to enter. Stability created by government regulation can have the generalised effect of reducing the incentive of a firm to be innovative with respect to the market. It can also reduce the incentive of a firm to conduct its operations in a technically efficient manner(1).

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(1) This is important particularly if the firm(s) opt for competition by product differentiation (i.e. quality of service, advertising, and so on).

Although the Government is not in a legal position to refuse to issue a licence to operate scheduled services on a particular route (provided that the proposed service meets with the requirements for safety and regularity), there is effective control over the amount of capacity available to operate such services. Therefore, issue of licences for scheduled services has little practical significance except to ensure that safety and other requirements are met.

Restricted availability of aircraft, coupled with the limited incentives on the part of the two major airlines to innovate, has resulted in only limited use being made of charter operations within Australia. The nominal requirements are that a charter licence does not give an operator the authority to operate a charter service more than once every four weeks on routes where regular public transport services are operating. However, services outside this constraint may be specially authorised by the Government. It would be expected that sufficient demand exists to sustain more low-cost charter operations within Australia than current experience would suggest. The limited use of charter operations can be directly attributed to the joint desire of TAA and AAA to restrict this type of service (despite their possible individual preferences towards charter operations). It also follows that there is extremely limited scope for other operators to introduce such services, because of their inability to import aircraft. Again, it would appear that the real problem is to frame regulations in such a way that they ensure that the interests of the air traveller (or potential traveller) are adequately considered.

## PERFORMANCE OF THE DOMESTIC AIRLINE INDUSTRY

### Financial Performance

The financial performance of both TAA and ATI (the AAA parent company) since 1957 may be regarded as being rather subdued. Due to the nature of the operations of ATI, it has been difficult to

gain estimates of the actual profitability of AAA as distinct from ATI. However ATI has been consistently profitable since 1957. Similarly, TAA has enjoyed a modest degree of financial success. Table 3.4 presents the net profit levels for TAA and ATI since 1971-72. Table 3.5 contains a comparison of TAA and ATI operations, in terms of significant economic indicators. It is interesting to note that ATI (in total) is the larger of the two airline operations in terms of total gross revenue, passengers carried, freight and mail carried, and employees involved. Yet TAA has consistently recorded higher passenger load factors in recent years. Whilst TAA is wholly owned by the Commonwealth Government, it is required to submit dividend payments to the Government.

One reason for the consistent profitability of both TAA and (presumably) AAA over time could be the rapid growth which has occurred in the demand for air transport. Since 1960-61 the growth rate has averaged 9.3 percent per annum, increasing from 2.8 million passengers carried in 1960-61 to 9.3 million passengers in 1975-76. Expectations are that growth in demand will continue, albeit at a slower rate of growth[1]. The slower growth rate will be attributable to a slowing down of the historical increase in the propensity to travel and a reduced rate of population growth.

## Pricing Policies

Concern and criticism as to the role of government in air transport in Australia, as elsewhere, is not new. In the USA, in recent years, there have been significant moves to reduce the amount and nature of government involvement with domestic air transport, to allow for more of the decisions to be made in the market-place. Three basic proposals can be identified in most of the recommendations which have been made for reform. These concern:

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(1) Forecasts prepared for the current study of Major Airport Needs of Sydney indicate that an average annual rate of growth in the order of 7 to 8 percent can be expected in the immediate future.

- Changes to the determination of fares, to include changes in scheduling procedures;

- Changes to the quality of services provided;

- Changes in entry and exit regulations to allow for a prospective carrier to enter into a particular route or route network, or to allow for existing operators to abandon services.

The major problem with the standardised approach which is adopted currently for fare-setting in Australia is that it causes severe rigidity in the pricing system, and this is contrary to the interests of the consumer. The concept of a flag-fall and set rate per kilometre as used in Australia is undoubtedly preferable to the previous fare-setting arrangements based on prorate increases of longer established schedules. On the other hand, it is apparent that on routes where fixed facilities are more heavily utilised a relatively low flag-fall would be justified. It is also apparent that the fixed rate per kilometre results in certain city pairs being disadvantaged as the airlines move towards equipment with higher passenger capacity, whilst unit variable costs decline with the distance involved.

As mentioned above, the standardised fare structure appears to be a force against the possibility of being more innovative about the type of service offered. The traffic densities on some routes such as Sydney-Melbourne and Sydney-Canberra could possibly support the introduction of lower-cost shuttle service which would eliminate much of the trip-end cost associated with terminal services.

In order to determine the approximate relativity of the air fares of TAA and AAA to those for equivalent stage lengths operated by overseas airlines, a comparison has been made[1] of the fare in

(1) This comparison has been the subject of a separate BTE analysis. The full details of this study have been forwarded separately to the Domestic Air Transport Policy Review Committee. See K.R. Mackay, op. cit.

TABLE 3.4 - NET PROFIT LEVELS OF TAA AND ATI (1971/72 - 1975/76)

| Year | TAA ($'000) | ATI[(a)] ($'000) |
|---|---|---|
| 1971/72 | 1,575 | 5,304 |
| 1972/73 | 1,966 | 6,310 |
| 1973/74 | 805 | 6,838 |
| 1974/75 | 2,218 | 8,219 |
| 1975/76 | 2,361 | 14,411 |

Source: Industry Annual Reports 1975/76

(a) Due to the nature of the accounts made available by ATI, the net profit (or loss) earned by AAA is not available separately.

TABLE 3.5 - INDUSTRY COMPARISON - TAA AND ATI (1975-76)

| Indicator | TAA | ATI[(a)] |
|---|---|---|
| Total Gross Revenue (before tax) | $212,866,810 | $228,078,000 |
| Revenue Passengers Carried (excluding charters) | 4,072,000 | 4,801,814 |
| Passenger Load Factor (per cent) | 64.3 | 59.4 |
| Total Freight and Mail (tonnes) | 46,218 | 70,084 |
| Total Employees | 7,916 | 9,165 |

(a) Includes subsidiary air operations.

United States cents per kilometre for an arbitrary selection of airlines and routes for stage lengths of approximately 700, 1400, 2100 and 3300 kilometres. Results of this comparison are presented in Appendix III. The substantially lower rates which have been recorded consistently by the United States domestic carriers indicate that there is scope for cost reductions on Australian routes. Although there are many differences in the actual costs of services in Australia and the United States, this conclusion tends to reinforce the analysis discussed earlier.

Quality and Innovation of Service

Under existing domestic air transport legislation, the historic emphasis has been on the provision of wholly-scheduled services. However, the market-place should have a chance to reflect in the future some of the more significant economic and social changes which have occurred in the past. These are primarily:

- Trend in business and non-business travel;
- Introduction of large aircraft (the movement from DC9's to 727-200's);
- The willingness of consumers to demand lower fare/lower service travel;
- Pressures of travel agents on airlines to provide lower fares for package tour developments;
- The growth in commuter air travel;
- Development of alternative concepts such as advanced purchase and inclusive tour travel.

The future expected growth in the vacation or personal travel market is considered likely to lead to an increased demand for charter-type operations. There is a need, therefore, to ensure that the air transport industry as a whole is responsive to such demands and that the regulations encourage the development of services involving appropriate levels of price and quality of output. It is quite likely that such appropriate levels would be quite different to those at which current legislation is aimed.

The existing domestic air transport legislation was developed during a period in which air transport primarily served business purposes. As an encouragement to national and regional economic development, it was considered necessary to develop a viable transport system throughout Australia and air transport was regarded as an important component of the transport sector. Travel for leisure purposes is now increasing at a greater rate than that for business purposes[1]. In these circumstances, the arguments in favour of the protection of scheduled services are less persuasive as travel for non-business purposes is invariably more cost-oriented than service-oriented. It is interesting to note that whilst fares paid with respect to leisure travel represent discretionary income spending, much of the business travel is paid by either firms or governments. Hence demand is more price sensitive in the leisure market. Many non-business travellers are prepared to accept high load factors and some inconvenience in departure and arrival times in exchange for lower fares. However, this type of traveller should not necessarily be expected to contribute to the cost of regular and high frequency services designed for other markets.

Extent of Service

At the mature stage of the generalised industry life cycle, which is considered to be the stage reached by TAA and AAA in 1977, commodities and prices can be (and should be) differentiated according to the needs of consumers and the production potential available to the airlines. In these circumstances, the appropriate course to follow is one which stimulates competition. It is not desirable to restrain differentiation between services and

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(1) It should be noted that new and cheaper ways of communication, (for example, the vastly improved STD telephone and telex services) continue to reduce the need for air travel for business purposes. In fact, certain classes of business travel may well be considerably reduced as a result of substitution by advanced communications technology.

between fares. The current legislation relating to capacity limitations is considered to restrain such differentiation, and hence has an economically undesirable effect.

Liberalisation of the licensing of additional services and of the entry by additional airlines into the transport industry is related to increased pricing flexibility. As discussed in the previous section, the existing legislative and operational procedures have discouraged the carriers from engaging in vigorous price competition and from introducing innovative travel concepts. With a more liberalised entry and pricing system, carriers could be subjected to competitive pressures to provide services desired by the public at price levels which would more closely reflect the actual costs of production. The threat of potential competition should provide additional incentives for carriers to ensure that fare levels are set in appropriate relationship to costs, so that any serious challenge by potential competitors would be forestalled. The importance of potential competition (as opposed to actual competition) as a policing device within the market does not appear to have been fully recognised and exploited in the past. The threat of entry by additional airlines such as the commuters has had at best an attenuated effect upon major carrier behaviour. Potential competition is considered to be a most important force in producing desirable market results, particularly in assuring that TAA and AAA are more diligent in providing socially desirable levels of service which involve acceptable price/quality options. Given the oligopolistic character of the industry and the monopolistic characteristics of many regional services, the future relaxation of entry conditions (primarily through amendment to the regulations affecting importation of aircraft) is considered to be most desirable.

A reliable method of estimating the extent to which TAA and AAA provide the types of services for which they have the support of government is to compare the level of scheduled services to actual services performed. The extent to which scheduled services match actual services may be interpreted as an indicator of

industry reliability in the market-place. It may also serve to indicate the nature of the operating conditions of both airlines with respect to providing less capacity and performing less kilometres than previously agreed to. Cancellation of services by both TAA and AAA may be due to a number of factors, many of which may be outside the immediate control of the airlines. Whilst cancellations of services due to low demand are the responsibility of airline managements, technical failures, industrial stoppages and meteorological disturbances are clearly outside the initial direction of airline management. On the other hand, airline overbooking represents a practice of which little is known and which the legislation appears not to consider. However, in the USA, the Civil Aeronautics Board (CAB) has (as a specific management objective) legislative powers to penalise airlines involved in this type of practice.

Perceived Performance

Elsewhere in this Paper it has been suggested that the domestic airline industry tends to be production- rather than market-oriented. Earlier in this section the nature of economic efficiency has been discussed. The economic concept of 'making an individual better off, without making someone else worse off', presupposes that consumers are fully aware of their preferences for particular commodities (or services). It also assumes that the perceived performance of a particular firm, such as TAA or AAA, has not been seriously distorted by the actual views of the individual.

Despite the significance of their aggregate economic stake in the domestic air transport industry, Australian consumers appear to be unable to organise an effective interest or lobby group. It appears doubtful if consumers will ever have the ability to fully determine the appropriate level and type of service which may be supplied by either TAA or AAA. There appears to be no valid theoretical reason why the minimum tolerated level of service should be less than the maximum possible level of service,

given existing resource commitments by the airlines and by government. A service gap is considered to exist with many of the scheduled services, as under the existing legislation there is no specific definition of standards of service. Exclusion of any detailed consideration of standards of service from the legislation is thought to be a reflection of the inarticulate and diffuse interests of consumers.

A number of options appear to be available to improve the level of consumer representation. Professor J.E. Richardson, in a recent paper[1] has proposed that the existing Rationalisation Committee which deals with the operations of the legislation should include consumer representatives. An alternative, as proposed in Canada, would be for government to finance an office of consumer advocacy. It has been argued that in terms of social welfare, the most effective form of consumer advocacy would be that which is publicly financed, but which is operated privately.

Both major airlines are actively involved in various forms of non-price competition. They provide services to travellers which appear to the consumers to be free. It is doubtful if the same quantity or quality of such services would be purchased if airlines charged for them directly. With price competition inhibited as a result of the current market structure, competition between TAA and AAA tends to take various non-price forms. Both airlines compete for patronage through terminal facilities and cuisine, drinks, attractive stewardesses, multi-coloured aircraft interiors, various ground services and through numerous forms of advertising.

As a result of the emphasis which is placed on service competition, additional costs are incurred by the airlines. These additional costs are in turn passed on to consumers in the form of higher

(1) Richardson, J.E., 'The Law as Arbitrator' in Resolving Conflicts in Transport, (Canberra: Chartered Institute of Transport, 1977).

fares than would otherwise be the case if price competition existed. However, it is vital to note that not all such costs are (or even could be) passed on. In general, prices to consumers will rise by an amount rather less than that of the actual cost increase, while producers will suffer a loss of production. Therefore, this practice operates to the detriment of the airlines as well as the consumers. Such policy gives no option to the consumer.

A consumer who wants to fly is forced to buy not only his seat but also a set of other services which he might not purchase if given the option of a less extravagant flight at a lower price. It is not suggested that passengers would want to buy a meal which is otherwise free or that they would not enjoy the comfort of a partially empty aircraft, the privilege of the most convenient departure time, or the pleasure of being served by attractive cabin personnel. However, many consumers do prefer lower cost flights with fewer amenities, flights which may be less conveniently scheduled, or aircraft which are more completely filled. Yet the extra benefits relating to high travel quality are costly. The airlines consume resources which are at least partly paid for finally by the consumer, and which may be more valuable to society in alternative uses.

An interesting aspect of the operations of the domestic air transport industry as perceived by many consumers relates to the parallel scheduling of services. Many consumers firmly believe that duplication of services (which occurs mostly at peak demand periods) is a direct result of government legislation. This is not actually the case. Under the existing regulations, both airlines are responsible for their own scheduling arrangements. Indeed, there are specific provisions for treating complaints about parallel scheduling. The appearance of collusion in the scheduling services is the result of the duopolistic nature of the industry, rather than the consequence of any government directive.

Nevertheless, this is a prime example of the way in which public perceptions may be incorrectly aligned with the actual situation.

Pursuit of New Markets

In considering new forms of air services, it is considered essential that there should be an adequate understanding of consumer behaviour and marketing opportunities. There should also be sufficient knowledge to anticipate industry reactions to new concepts. It is not considered sufficient for current aviation regulation to be based primarily on the philosophy of development of the airline industry rather than on improving the welfare of consumers. The characteristics and desires of the market-place should be given a chance to manifest themselves in rule-making procedures and in regulatory bodies especially where legal definitions of new products such as charter services are involved. It is argued that there is considerable scope for at least controlled experimentation with new and more liberal forms of licensing, particuarly in relation to the introduction of charter services.

Introduction of additional forms of price/service competition through provision of routine charter services or through entry of a third carrier on major routes touches on some of the key principles involved in the existing domestic air transport legislation.

The type of innovation which is considered desirable is in line with that which has already been introduced on a limited scale by East-West Airlines. EWA has been instrumental in introducing a number of innovative fare structures and tour charter concepts in recent years. Examples are the 'Club 25' concept (discount travel to persons under 25 years old) and tourist-oriented services from Sydney to Alice Springs, Sydney to Hobart and Sydney to Maroochydore. EWA has relied on the North American concept of Inclusive Tour Charters (ITC's). According to a Civil Aeronautics Board (CAB) statement in 1973, the ITC represented considerable promise both domestically and inter-nationally as the instrument

most likely to accomplish significant expansion of pleasure air travel. Introduction of a number of different ITC programs in Australia has only involved EWA. Yet, in relation to the limited fare innovations which have been introduced by TAA and AAA, the efforts made by EWA highlight the lack of use by the major airlines of many of the forms of discount air travel which exist in the USA. Again, the onus rests with the airlines, rather than with government, to introduce such concepts as affinity charters, ITC, travel group charters (TGC), forms of Advance Purchase Excursion Fares (APEX) or Advanced Booking Charters (ABC's).

Current regulations regarding charter operations allow the Department of Transport to specifically authorise the holder of a licence to engage in charter operations on a particular route at a frequency greater than once in four weeks. It appears, therefore, that increased charter operations could be encouraged and would be legally allowable if they were specifically authorised. Therefore, a legal framework appears to exist for at least experimental innovative services. In the longer term, however, it would be desirable for the regulation to be changed to permit introduction of price/quality modifications to existing scheduled services.

## CHAPTER 4 - ASPECTS OF REGULATORY REFORM

### RATIONALE FOR CHANGE

As indicated earlier, dissatisfaction with the operations of domestic air transport is not confined to Australia. In the United States, considerable research and discussion has taken place as to the appropriate role of government in domestic aviation. It is useful to review briefly the general arguments for and against regulation of air transport in general and domestic air transport in particular. This may serve to highlight the issues involved in much of the debate which concerns the future of regulatory reform in Australia.

The likely general effects or consequences of changing the existing regulatory environment include the following:

- Effects on levels of service and fare rates;
- Effects on intermodal competition;
- The fact that some routes may be affected more seriously than others;
- Effects on price and service discrimination;
- Effects on managerial incentive;
- Effects on technical efficiency, particularly the impact on equipment utilisation and replacement.

Pro-regulation supporters or supporters of the status quo could argue that the price/quality tradeoffs are already considered under the existing legislation. They would argue that it is possible to recognise some price and quality differences among and between the carriers, given that many of the regulations are in reality not followed in practice or are not subjected to effective

external scrutiny. Further, it could be suggested that if the existing legislation has resulted in higher cost and higher levels of service, many users may prefer this to what they perceive to be the alternative under deregulation (namely, the possibility of lower fares and reduced levels of service). On the other hand, supporters of deregulation have argued for greater competition between Australia's principal domestic carriers in order to stimulate introduction of more price/quality-of-service options.

In summary, the major arguments in support of maintaining the existing system are as follows:

- Under the present Two-Airline system there is stability in the industry. Passengers can rely on carriers for the most part to meet their schedules. Tickets may be purchased at specific prices at known outlets. Passengers can expect to receive the type of service which is advertised;

- With Government intervention, the continued availability and implementation of aviation technology (which is largely developed and adapted from overseas) can be anticipated. However, in a situation of free entry and exit provisions, firm orders for engines and aircraft spares, maintenance facilities and labour technology may not necessarily always be available to ensure an adequate support industry;

- With Government intervention, services on some routes can be maintained despite their unprofitable nature, albeit often at the expense of travellers on the more profitable routes;

- With government control, a high safety record has been maintained. Few would want to see this impaired.

Governments have been criticised, in Australia, in Canada and in the United States for alleged insensitivity to the interests of consumers, who are actively and potentially reliant on air transport. The basis for regulatory reforms remains as the need to deal

explicitly with consumer welfare. It is interesting to note that it is only very recently in Australia that suggestions have been made for the need for a consumer advocate to be established to present the views of the consumers to the airlines and to government.

When determining those aspects of policy where a change is warranted, a balance needs to be struck between the changes which theory would suggest as being appropriate and those which are practical in political, economic and technical terms. Whatever the regulatory changes need to be, they should be instituted on a gradual basis. Limited experimentation with reformed legislation should be given serious consideration before final decisions are made on either changes to the existing legislation or greater enforcement of existing legislation.

It is worthwhile mentioning that a 'one-airline' situation has been disregarded in this analysis. It is considered unlikely that the interests of the nation would be more appropriately served by having all air transport services provided by the one organisation. The advantages from such a market structure would essentially be derived from major economies of scale which might come about from the provision of terminal facilities and the operation of larger aircraft. A major disadvantage would be that it would tend to further reduce levels of innovation. Additional work which is currently being carried out within the BTE may determine the nature of the economies of scale existing within the air transport industry. Evidence at this stage suggests that very few economies of scale actually do exist over the relevant range of output. It may be argued that some of the apparent economies may be obtained through introduction of an increased range of services involving different price/quality options. It may also be simpler to regulate a monopoly than it is to regulate the existing duopoly, from an administrative point of view.

However, deliberate contraction to a monopoly situation is regarded as unlikely in most circumstances (at least in the short term) and the BTE has not seriously considered the option at this stage.

## CHANGING AIRLINE MARKETS

During the past two decades there has been a rise in the levels of real disposable income of most Australians, a greater availability of leisure time, and an increase in the propensity to travel domestically and overseas. Cost-saving opportunities relating to aviation technology have been available to the major airlines. Consequently, a general trend has emerged in which passengers travelling for non-business purposes are growing at a greater rate and currently outnumber those travelling for business purposes. A similar situation may be found in most developed Western economies. Such a switch in markets, towards recreational travel, for vacations and sightseeing, and for personal travel to visit friends and relations has led to what the CAB has recently called 'the irresistible and understandable public demand for low-cost air transport, much of it on charter services'[1]. However, under the existing Australian domestic legislation, introduction of charter services on regular routes is possible only every four weeks on a routine basis. Hence, without altering the existing legislation, the options are clearly for the airlines to introduce price/quality modifications to normal scheduled services to meet the changing demand.

With regard to the relationship between recreation and tourism activities and airline services, it is important to appreciate the nature of the transport function involved. In the tourism industry, it is the destination which is marketed by both airlines

(1) Hearings of the Subcommittee on Aviation of the Senate Commission on Commerce, 94th Congress, 1st Session 48(1975), cited in Reamey, G.S. 'Charter Air Travel: Paper Airplanes in a Dogfight' in The Journal of Air Law and Commerce, Vol. 42, Spring 1976.

and by the travel agents. The nature of the destination, combined with hotel/motel accommodation, car rental and other services determines the cost and value to the consumer of package-tours. With this concept, air transport fulfills only an indirect psychological and economic role. Yet it does appear that the airlines remain aloof from accommodating tour packages set up by other organisations. This is evident most strongly in the position which both major carriers have adopted with regard to the subject of tour-based fares. Neither of the major airlines is prepared to make seats available to travel agents at a reduced fare, except through existing limited charter arrangements. Hence travel agents are required to develop 'package holidays' and group excursion travel concepts based on normal scheduled fares. The onus rests with the travel agent to gain competitive rates for the remaining package components (namely accommodation and ground travel). However, the airlines themselves continue to reserve the right to discount fares in the construction of their own holiday or tourist package concepts. In fact, this 'vertical integration' of airline activities acts to stifle competition in the whole tourist industry, not only in the airline industry itself.

## POTENTIAL ROLE OF A THIRD AIRLINE

Whilst there appears to be definite need for more competition within the domestic air transport industry, it is doubtful at this stage if the national interest would be best served by allowing a third scheduled operator to provide normal scheduled services on the major inter-city routes in competition with TAA and AAA. The reasons for this doubt are tenous at this stage. Oligopoly theory would suggest that a third operator would behave in such a way as to schedule services in parallel to the existing ones. A third scheduled airline would not necessarily result in lower fares on major routes, as this would depend on the ability of the additional airline to achieve economies of scale. The relative size of the additional airline would also be an influencing factor (see Appendix II). However, it is likely that the

presence of an additional major airline which offered charter-type services or operated lower-price shuttle services on the major inter-city routes would be acceptable on social grounds.

As discussed earlier, an alternative type of service such as an inter-city shuttle facility may be appropriate for some of the shorter major routes with the highest traffic densities. While preliminary estimates indicate that such services would be financially viable at fare levels substantially below those currently prevailing, it remains to be determined what their actual effect would be on generated and diverted traffic. This is the familar issue of the 'dilution' of existing markets. Future legislation could usefully make provision for introduction of these types of services by either TAA or AAA or both, or by another airline.

It has been suggested that there is a potential to utilise available capacity in international aircraft over domestic legs such as between Perth and Melbourne. Such a practice could result in some cost savings both to the traveller and to the international airlines. Whilst the concept may not have a particularly wide scope because of the variability of supply, it should not be discounted completely because savings could be achieved. Again the issue of 'dilution' of existing services is involved. It has also been suggested that the use of extra international aircraft capacity could be sold on an 'as-available' basis to travel agents, with the excess capacity being sold by a broker to TAA and AAA.

Before any major steps can be contemplated with regard to the encouragement of a third major airline operating on the major routes, the likely nature of dilution of existing traffic patterns needs to be established. This is likely to involve a detailed research program.

NETWORK CONSIDERATIONS AND RURAL SERVICES

The major arguments against introduction of services by additional airlines on major routes and against additional forms of price competition (such as revised forms of fares) have been expressed in terms of:

- Predatory pricing, destructive competition, and monopoly development;

- Destruction of existing air service networks coupled with reduced services to rural communities;

- Reduced safety standards;

- Greater financing difficulties.

Provided that additional or alternative services are allowed to develop rationally under the prevailing market structure, there appears to be no major historical or theoretical reason for believing that a limited increase in the level of competition (particularly in terms of alternative fare structures) would lead to predatory pricing, destructive competition or the risk of one carrier taking over from the other. More research, however, needs to be undertaken to substantiate this conclusion.

Concern has been expressed as to the nature of the effects which alteration of current industry practices would have on rural communities and on the patterns of service networks which currently exist. It has frequently been claimed that fares on the major routes must be set at a sufficient level to cover the costs of the less popular services to rural areas. Yet, as has been indicated earlier, few detailed studies have ever been completed to verify the extent of the cross-subsidisation of routes. It may be argued that a more competitive airline system might lead the major carriers to seek to discontinue service over routes which account for only a small percentage of revenue-passengers

flown. As an alternative, services over these routes could be supplied by the various commuter carriers. Even if direct subsidies were to be required on the remote network legs (such as those currently operated by Connair), the savings may be greater than the revenues derived from continuing with the existing system. It is apparent that there is need for additional research to examine the alternatives available. A social benefit-cost approach would appear to be appropriate.

It is perhaps worth noting that the present structure of the industry may well work directly against the interests of rural communities. Because of the nature of the regulations, TAA and AAA concentrate heavily on major routes, and are probably not in a position to apply similar management skills (advertising, marketing and so on) to rural routes. Conversely, potentially quite efficient operators of third-level services may be inhibited because of the power of TAA and AAA to take over a particular route at any time (especially after it has been established). Obviously, this inhibits satisfactory service to rural communities from both sides.

## ADDITIONAL ASPECTS OF CHANGE

It has been argued that increased competition may lead to fares which prevent the major airlines from meeting all their financial commitments, forcing them to replace fewer aircraft and eventually to reduce service networks. An examination of this claim has revealed that a reduction in fares may not necessarily result in a less profitable situation. The current fare elasticity of demand for the overall interstate market has been estimated by the BTE at -1.9. This means that a decrease in fares of 2% would increase passenger demand by approximately 4%. This would imply that expanded services would lead to increased profitability with little risk. Also, it is most unlikely that the major airlines would allow a situation to be developed where they did not cover costs. Both new competitors and the existing airlines realise

(as in all competitive industries) that failure to cover overheads means eventual failure. Although TAA is a Government instrumentality, it is required to provide dividend payments to Government, and hence must abide by essentially commercial practices.

It is most unlikely that increased competition would adversely affect airline safety. Safety is the primary responsibility of the Department of Transport. The Department of Transport is likely to continue to apply its rigid safety standards. The safety records of both the scheduled carriers and the commuter carriers are excellent. As no changes in safety regulations are to be proposed, these records should remain excellent. Certainly, there is scope for conjecture as to whether existing safety standards may be too rigid in an economic sense (and it could be that they may be counter-productive in some instances). However, both these aspects are felt to be the province of a separate study. Equally, the argument that airlines require a high degree of financial protection in order to meet satisfactory safety standards is a dubious one.

If the present legislation which guarantees financing of new aircraft continues, an increase in competitive conditions would not have an impact on such financing. Any increase in the nature of the competitive environment may increase the level of business risk of the individual airlines, when compared with the existing environment. However, the impact is considered to be modest.

STIMULUS TO A MORE COMPETITIVE ENVIRONMENT

Any detailed examination of the problems relating to the introduction of additional forms of price/service competition into the domestic air transport industry is likely to be a somewhat hazardous task. The concepts of more frequent charter services and introduction of a third (charter) carrier on major routes challenge many of the basic underlying principles of Australia's domestic transport legislation and operations.

The present system of blockaded entry almost certainly limits the incentive of existing carriers to engage in vigorous price and service competition. This in turn could be expected to contribute to problems of high fares and operating costs. With the number of competitors essentially fixed, maximum fare and minimum quality of service regulations are also fixed. However, with a more liberalised entry and pricing environment, the airlines would be under competitive pressure to provide a range of services desired by air travellers at prices which more closely reflect the actual cost of producing the services. As stated earlier, there is no direct evidence that this would be contrary to the interests of the airlines themselves.

The potential threat of competition is considered to be an effective market policing device. However, under the existing structure of the industry the threat of new entry has had at best an attenuated effect on carrier behaviour. Given the duopolistic nature of the operations of TAA and AAA and the monopolistic characteristics of many regional markets, relaxation of entry provisions is considered essential to introduce pricing flexibility. It is emphasised that the threat of more competition may be almost as effective as the competition itself, in these circumstances. Threatened competition could give a real stimulus to innovation without any of the admitted risks of actual competition.

Another variation which could result in an improvement in competition within the industry is the concept of route licensing. This would take the form of competitive tendering for sole rights to operate a particular route. If the route were considered basically unprofitable, negative tenders would be allowed. This system operates in various parts of the world (for example, it is carried out by the Civil Aviation Authority in the United Kingdom). While this would obviously not lead to direct competition on specific routes, it would provide a generally more competitive environment within the industry as a whole. It should be noted

that tenders would be sought on a widespread basis, and it could well be that they would be submitted by agents acting effectively as brokers for capacity held by traditional airline operators.

International studies which have been concerned with the values which passengers place on fare types, travel time, and on the conditions under which they are prepared to travel suggest that most travellers, if given the choice, would prefer lower fares even if this involved flying in aircraft fuller than the current Australian industry average. Yet, the load factor requirement and the system of capacity determination which affects the quantity of capacity available for use by both airlines, as it presently operates, is considered to inhibit the extent to which potential markets may be opened up and alternative fare structures may be introduced. This is primarily as a result of the lack of aircraft capacity available outside normal network requirements.

The present system of price control, which forces the airlines to charge equal fares for equal distances, effectively prevents selective price-cutting and market penetration. In industries with only a few firms, the fear of immediate retaliation makes general across-the-board price-cutting rare; price floors are eroded only as firms each begin to make a few selective price cuts in limited areas. The current system of 'equal fares for equal distances' makes it impossible for a carrier to cut prices on some routes without cutting prices on all of its routes and being matched by its competitor. It thus discourages any price-cutting at all. The existing regulations also do not actually produce 'cost-related' fares, (except perhaps on an overall network basis) as routes of equal distances often have very different costs.

The concepts involved in fare determination appear to warrant further detailed investigation, assuming that a fare determination mechanism is to be preserved at all. Although the existing procedures have been changed in the past, it is considered necessary that further research be directed toward this aspect of air transport operations.

It can be argued that under the existing system of industry operations, there has been a lessening (or at least a reorientation) of managerial activity. Rather than seeking to attract consumers by offering combinations of services and prices which more appropriately meet consumer needs and preferences, the managements of both airlines inevitably have sought to provide a level of services which is optimised within the regulatory climate. This has certainly affected the structures of the individual firms and has diverted management's activities and attention from other channels. Under normal competitive circumstances, undue emphasis on service level factors might well be viewed as being non-productive.

In summary, the future requirements are for a less rigid pricing system, removal of (or at least substantial changes to) capacity determination procedures and more scope for airlines to offer alternative scheduled and non-scheduled services. It is only through increased competition within the air transport market that consumer interests will be protected effectively.

## PRACTICAL CONSIDERATIONS

A number of political, economic and technical considerations need to be considered, prior to implementation of changes to the existing legislation and to the way the industry currently operates.

Political considerations inevitably make it difficult to implement changes to existing legislation quickly. It appears that regardless of what regulatory changes might be made, they should be instituted on a gradual basis. Serious consideration should be given to limited experimentation with reformed legislation before final decisions are made on changes to the existing legislation or a greater enforcement of existing legislation.

An understanding of oligopoly theory has suggested that a third scheduled carrier should not be allowed to operate normal services on the major routes. It is unlikely that truly competitive fares

and services would continue to be maintained after an initial 'settling-in' period. Any reorganisation and liberalisation of the capacity determination procedures may not necessarily be effective if the existing airlines fail to take advantage of the increased available capacity. TAA and AAA may not be prepared to purchase additional aircraft or reschedule existing equipment. Hence it is considered necessary that improvements to the existing degree of competition will need to be achieved.

In the general context of regulated industries, enlargement of consumer choice is effected by continuous consideration of the opportunities to introduce more competitive market conditions. On this basis, the future conditions of the airline industry should be balanced somewhere between 'regulated monopoly/duopoly' and 'regulated competition'. Regulated monopoly or duopoly is defined as occuring when the public interest is better served if an additional operator is not permitted to enter a route whilst the existing service is adequate. On the other hand, 'regulated competition' normally permits market entry if demand is sufficient to warrant the presence of an additional carrier. It is considered necessary that future involvement of the Department of Transport in the domestic aviation industry should shift from an emphasis on a 'regulated monopoly/duopoly' situation to at least an emphasis on a situation of 'regulated competition'.

However, the most significant practical limitation to an immediate introduction of major changes to the existing system, concerns the five-year expiry clause which was inserted in the 1972 Airlines Agreement Act. Under this clause, if either AAA or the Commonwealth Government[1] wished to terminate the current agreement, this could not take effect until at least five years had elapsed from the date that notice of termination was given.

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(1) It is worth noting that TAA is not explicitly able to enter into the termination argument, despite the fact that it is specifically mentioned as a party to the Agreement.

## CHAPTER 5 - CONCLUDING REMARKS

### SUMMARY OF LEGISLATIVE EFFECTS

As has been indicated earlier, historical development of the current legislation relating to the operations of the major domestic airlines is well documented. It has been necessary to refer to the legislation which was introduced in 1952 to understand the initial formation of the present industry structure. The years between 1952 and 1957 represented the development years for the domestic air transport industry. During this period, the concept of Australia supporting only two major carriers was introduced and carried forward up to the 1957 Agreement Act. It was during this period that ANA and Butler Air Transport were purchased by Ansett Transport Industries. The 1957 Act was an important watershed in development of civil aviation in this country. It continued the concept of two major airlines, together with other provisions of the 1952 Act. However, it was ATI which became the second major airline, replacing ANA. Since 1952, additional Acts have covered additional aspects of the operations of the industry which were considered to be deficient by TAA and ATI.

It can be argued that the major explicit objective of the Two-Airline Policy since 1952, namely to maintain two major airlines to operate profitably on the major routes, has been achieved successfully. Whilst the period 1952-1972 may have served usefully to develop a satisfactory domestic airline industry, the basic theme of this report is that emphasis should now be changing toward aiding the welfare of the consumers, rather than that of the producers.

### POSSIBILITIES FOR THE FUTURE

In presenting possibilities for future action which could be taken by the Commonwealth Government, a major distinction needs to be made between the various issues. A clear distinction is drawn

between those aspects of the existing regulatory environment which require a reappraisal of aspects of the philosophy guiding the management of TAA and AAA and the involvement by the Commonwealth Government, and those which require amendments to the existing legislation.

It is considered that the air traveller in Australia is currently presented with a deceptively broad choice of airline fares and service options to consider. From factual information which is available and from observations which have been made of airline behaviour, it is suggested that there is considerable scope to improve the nature and the effects of the current regulatory environment. The changes which are considered to be appropriate should aim to create an environment which is more competitive and innovative in terms of fares and in the frequency and quality of services. It is also suggested that there is a need for a less rigid pricing system and for removal of the existing capacity determination procedures (or at least major modifications to these procedures). There should also be greater scope for additional airlines to operate scheduled and non-scheduled services on both competitive and non-competitive routes. This would require considerable relaxation of the administration of regulations governing importation of aircraft. It is concluded that only through an increased level of competition within the domestic air transport industry is an increase in the existing levels of consumer satisfaction likely to be achieved. No real evidence is available to suggest that this would be substantially harmful to the existing airlines, unless their standards of efficiency are unusually low, in which case the desirability of more competition would be reinforced rather than downgraded.

Complete deregulation of the airline industry is regarded as clearly impractical and undesirable. However, it is strongly suggested that the time is appropriate for a shift from a regulatory stance emphasising airline industry development and protection to one emphasising air transport development. The two are quite different things. If air transport is to develop

to its full potential, artificial constraints must be relaxed to the greatest degree commensurate with social objectives. One cogent reason for this is that the present system of regulation in favour of industry has considerable deleterious effects elsewhere. It inhibits Australia's potential development in a tourist sense, and it may well result in excessive or premature investment in other forms of transport. Obviously, the long-term economic and social implications of this situation are immense.

## FUTURE RESEARCH TASKS

So that the Commonwealth Government can remain effectively and efficiently involved in the domestic air transport industry, accurate and current information is required. Detailed research is necessary to obtain data from the airlines and from other industry sources. It is also essential to examine the requirements of consumers and potential consumers (as is being done in the BTE's National Travel Survey and by marketers of airline services, particularly travel agents). An indication of the current lack of data is given by the BTE's inability to present in this paper reliable market share data relating to TAA and AAA passenger and freight movements throughout Australia.

The following items represent a list of the more important research tasks which should be considered:

- Development of an appropriate continuing data base to contain domestic air transport statistics particularly origin/destination movements of air travellers and production cost estimates relating to provision of scheduled and non-scheduled services;

- An examination of the nature of the economies of scale which may be experienced currently by TAA and AAA under the existing industry structure and those which might occur under different structures;

- An examination of the extent to which traffic dilution from scheduled services on specific routes may occur if markedly lower fares were introduced, with or without shuttle or charter-type services;

- A detailed examination of the extent to which cross-subsidisation of routes exists throughout the entire domestic air transport industry (including all airlines) and of the economic impact which reduced fares might have on lesser routes. This could also include an economic examination of the current practices of subsidising air services in remote areas;

- Continuing monitoring of basic economic parameters such as elasticities of demand, so that future examinations of potential changes of regulations or their administration can be carried out in a more informed manner.

## APPENDIX I - COMMENTS ON CAPACITY DETERMINATION PROCEDURES

In the body of this Paper, many comments have been made on the effects of the capacity determination procedures which are administered by the Department of Transport. In this Appendix, the capacity determination procedures are examined in detail, and various comments on their effects on air transport in Australia are consolidated. Earlier in this Paper, detailed comment has been made that if alternative fare service types are to be introduced, greater capacity would need to be made available through a relaxation of the capacity limits. It is in this context that the elements and procedures involved in the capacity determination exercise are discussed below.

The basic variables in the capacity determination procedures are traffic variation factors, revenue weight factors, revenue load factors and aircraft productivity standards. It is useful to outline the broad meaning of each of these.

- The traffic variation factor is the estimate of the growth in passenger and freight traffic in the forthcoming six month period, compared to actual traffic in the same period, one year earlier;

- The revenue weight factors are factors which are applied to forecast passenger, freight and mail movements to reflect the respective earning potential of the various categories of traffic covered by the capacity determination procedures;

- The revenue load factor is a factor set by the Minister for Transport. It summarises the relationship between total forecast traffic and capacity required by the airlines to carry that traffic (as set by the capacity determination);

- Aircraft productivity standards are set for both airlines. They are expressed as the number of tonne-kilometres of capacity which can be provided by a particular aircraft type in a given time period.

All of these variables are subject to consultation between the two airlines. Essentially, the appropriate values for these parameters are determined by the airlines themselves. The Department of Transport appears to accept the figures submitted by the airlines, provided that agreement has been reached by the latter. This seems to encourage (and, indeed, institutionalise) excessive co-operation, the results of which are not subject to detailed Government examination. This may be the result of a lack of information available to Government.

Aircraft productivity standards have currently not been agreed upon by the airlines. The effective payload and utilisation estimates proposed by AAA are higher than those proposed by TAA. However, TAA has argued that the standards of AAA cannot be achieved. It is worthwhile examining this situation to determine the basic reasons for AAA's insistence on acceptance of higher productivity standards. As indicated in Table I.1, TAA has fairly consistently handled a greater share of total traffic on competitive routes in terms of passengers, freight and mail. This highlights a major problem which exists with current procedures to determine capacity levels. If AAA is able to limit TAA's capacity by seeking to have the higher productivity standards built into the capacity determination, then AAA gains the spillover traffic which TAA cannot carry. The Department of Transport appears to be aware of this problem. As the productivity standards of AAA have been adopted, this really cannot be interpreted as equal treatment as stipulated under the current Airlines Agreement Act. The practical effect will be to limit TAA's ability to compete, as AAA is the more productive airline, in terms of output levels per employee.

Table I.2 gives an indication of the labour productivity levels of both airlines. In terms of passengers carried per employee, it is interesting to observe the increases in productivity since 1958-59.

TABLE I.1 - COMPARATIVE PERFORMANCE[a] OF BOTH AIRLINES (1972-76)

| Period | Aggregate Tonne-km (m) | | | Per Cent of Total Traffic | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | TAA | | | AAA | | |
| Period | Pass | Freight | Mail | Pass | Freight | Mail | Pass | Freight | Mail |
| July-Dec 72 | 237.0 | 29.6 | 4.3 | 51.1 | 54.9 | 51.2 | 48.9 | 45.1 | 48.8 |
| Jan-June 73 | 242.0 | 27.2 | 3.6 | 51.0 | 50.0 | 50.0 | 49.0 | 50.0 | 50.0 |
| July-Dec 73 | 268.1 | 32.4 | 4.1 | 48.6 | 48.1 | 51.2 | 51.4 | 51.9 | 48.8 |
| Jan-June 74 | 285.0 | 33.0 | 3.4 | 50.8 | 47.0 | 50.0 | 49.2 | 52.7 | 50.0 |
| July-Dec 74 | 299.8 | 34.3 | 4.1 | 49.0 | 49.0 | 46.3 | 51.0 | 51.0 | 51.2 |
| Jan-June 75 | 311.3 | 32.7 | 3.5 | 51.1 | 50.8 | 51.4 | 48.0 | 49.2 | 48.6 |
| July-Dec 75 | 309.3 | 34.6 | 4.0 | 49.7 | 51.5 | 52.5 | 50.3 | 48.8 | 47.5 |
| Jan-June 76 | 293.4 | 31.6 | 3.7 | 50.3 | 49.4 | 51.4 | 49.7 | 50.6 | 48.6 |
| July-Dec 76 | 296.9 | 33.7 | 3.9 | 50.4 | 51.9 | 48.7 | 49.6 | 48.1 | 51.3 |

(a) Six-month average estimates.

TABLE I.2 - LABOUR PRODUCTIVITY COMPARISON

| Year | Tonnes of Freight and Mail Carried per Employee | | Passengers Carried per Employee | | Revenue Earned per Employee ($) | |
|---|---|---|---|---|---|---|
| | TAA | AAA | TAA | AAA | TAA | AAA |
| 1958-59 | 4.42 | 10.69 | 217 | 282 | 6,104 | 7,172 |
| 1959-60 | 4.57 | 10.77 | 259 | 309 | 7,106 | 7,758 |
| 1960-61 | 4.52 | 10.96 | 228 | 337 | 7,052 | 8,679 |
| 1961-62 | 4.64 | 10.84 | 246 | 331 | 7,367 | 8,425 |
| 1962-63 | 4.69 | 11.09 | 255 | 316 | 7,726 | 8,510 |
| 1963-64 | 4.83 | 11.06 | 274 | 324 | 8,093 | 9,071 |
| 1964-65 | 5.02 | 12.14 | 287 | 352 | 8,553 | 9,705 |
| 1965-66 | 4.88 | 11.08 | 294 | 354 | 9,072 | 10,479 |
| 1966-67 | 5.11 | 10.34 | 316 | 348 | 9,954 | 10,829 |
| 1967-68 | 5.41 | 9.57 | 337 | 363 | 11,033 | 12,080 |
| 1968-69 | 5.34 | 9.54 | 356 | 392 | 11,734 | 13,185 |
| 1969-70 | 5.89 | 8.40 | 390 | 414 | 13,146 | 14,118 |
| 1970-71 | 5.79 | 7.94 | 399 | 417 | 14,522 | 15,558 |
| 1971-72 | 5.72 | 7.99 | 414 | 437 | 15,645 | 17,280 |
| 1972-73 | 5.71 | 8.22 | 449 | 468 | 16,541 | 17,829 |
| 1973-74 | 6.32 | 9.08 | 509 | 532 | 19,667 | 21,461 |
| 1974-75 | 5.95 | 7.78 | 534 | 526 | 24,440 | 24,764 |
| 1975-76 | 5.82 | 7.65 | 514 | 524 | 26,891 | 24,896 |

Source: Relies upon Davies' work (1971) which has been updated since 1970-71 from industry reports. See Davies, D.G., 'The Efficiency of Public versus Private Firms, the Case of Australia's Two Airlines', Journal of Law and Economics, 1971, pp. 149-165.

If the standards proposed by each airline do not actually reflect their individual operational results or financial targets, the proposals could be regarded as simply representing tactical manoeuvres. The net result is likely to be a situation yielding improved financial results for AAA. It is worthwhile emphasising that the possibility for this to occur is enshrined in the legislation. There could be a good case for legislation to be framed in alternative fashions which place the tactical initiative with the Government rather than the airlines. This could probably be done without destroying the spirit of the existing legislation, if this was a requirement.

All freight aircraft and mixed-configuration aircraft determination are made separately. The weight traffic figure in tonne-kilometres for each airline does not reflect the same composite unit. The reason is that the revenue weighting factors in each determination are related to the principal type of traffic which is carried. It is questionable whether the capacity determinations for all-cargo aircraft and mixed configuration aircraft can be interpreted similarly.

The determinations of capacity are also made separately for both competitive and non-competitive routes[1]. Limitation of the available capacity which is committed to non-competitive routes is intended to discourage unfair competition. However, the practical effect is considered to be to restrict levels of innovation rather than discourage unfair competition, since by definition there is only one of the airlines on any of these routes.

An individual airline's decision to operate on a new route or to provide a new service on an existing route will involve changes in utilisation of its existing fleet. It is considered appropriate

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(1) 'Trunk' and 'non-trunk' routes in terms of formal Department of Transport definitions.

that the airline itself should decide whether the new service warrants addition of aircraft to that fleet. Intervention by government may well be unnecessary. It is to be concluded that limitation of capacity on competitive routes tends to safeguard airline profitability at the expense of consumer preferences and to the detriment of the potential options of consumers. The safeguards to profitability may be unnecessary or illusory. Irrespective of this, consumer choice is considered to be an aspect of social welfare which appears to have been particularly disadvantaged by the form and application of the existing capacity determination procedures.

## APPENDIX II - DETERMINATION OF THE LEVEL OF OUTPUT AND MARKET PRICE IN MONOPOLY AND SEVERAL CASES OF OLIGOPOLY

This Appendix sets out in general terms the way in which micro-economic theory suggests that market prices and the levels of output are determined in the case of a single producer of a commodity or service (that is, in the case of a monopoly). In addition, determination of price and output is set out for particular oligopolistic markets. These are the case of duopoly with market-sharing (and where firms have similar and dissimilar cost conditions) and the case of price leadership. The nature of the relationships between and among TAA and AAA, the smaller scheduled airlines and the commuter airlines may be more fully understood from an appreciation of the general theory of these particular market structures.

### MONOPOLY

A monopoly situation is characterised by the fact that there is only one producer supplying the market for a particular good or service. This is the position of the major Australian airlines on non-competitive routes. It is also the situation of the commuter airlines on many routes.

The presence of a sole producer may be due to barriers to entry into the market imposed by legislation restricting the number of producers. However, it can also occur through factors such as patent rights, limited market size or one firm's control of a key productive resource. The analysis is simplified if it is assumed that the objective of the monopolist is to maximise profits and that short-run marginal costs of production tend to rise at high levels of output.

Due to there being one producer in the market rather than many, the monopolist will face a downward sloping demand curve. This

curve is represented by DD' in Figure II.1. Also shown in that diagram are the marginal revenue curve MR, a representative average total cost curve AC and the associated marginal cost curve MC.

In order to maximise profits in this market, the monopolist will produce to the point (X in Figure II.1) where the extra revenue received from the last unit sold just covers the additional cost of producing that unit. In other words, output will be limited to the level at which marginal revenue equals marginal cost. This occurs at the level of output $Q_X$ for which the corresponding market price is $P_X$. The level of output $Q_X$ is less in the short run than the lowest-cost output Q* (that is, where short-run average costs are at a minimum).

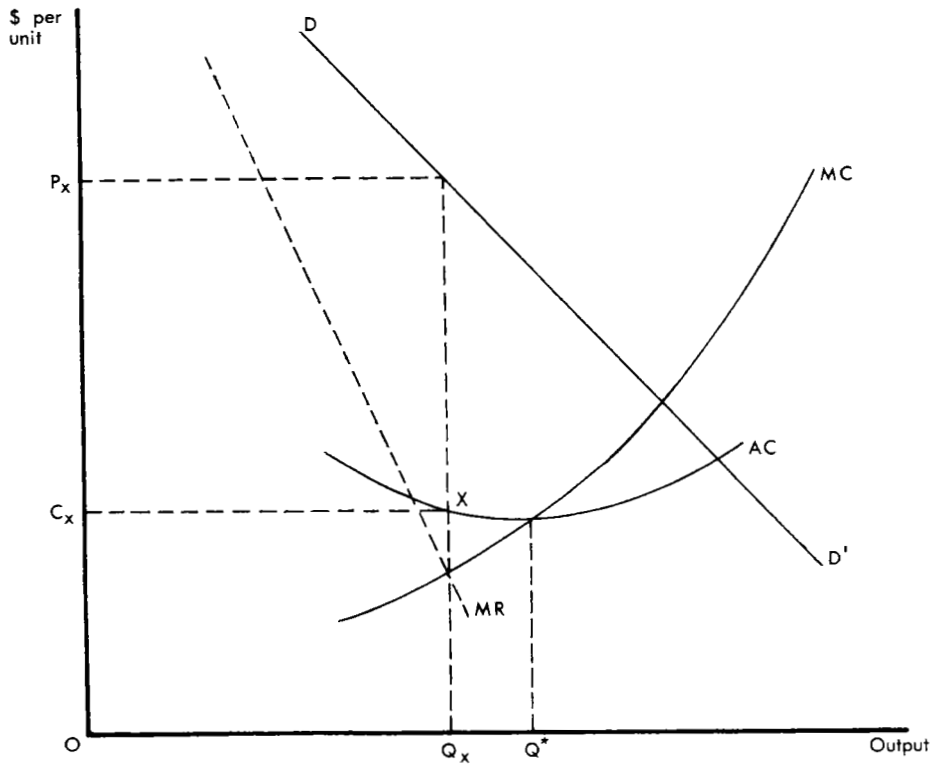
At output $Q_X$ the average cost of production (including a normal return to capital) is $C_X$. Since market price is $P_X$, the value $Q_X$ $(P_X-C_X)$ represents profits in excess of the normal rate of return.

It should be noted that the existence of a single producer in the market for a good or service need not always imply excess profits or even normal profits. If the AC curve is situated to the right of the demand curve DD' and at no point intersects or touches DD' not even normal profits will be made. If demand does not increase or if costs cannot be reduced, the firm must cease production in the long run.

OLIGOPOLY

The general characteristics of an oligopolistic market structure (such as that involving TAA and AAA) are briefly as follows:

. A small number of firms;




LEGEND

| | | | |
|---|---|---|---|
| DD' | Demand | $Q_x$ | Profit-maximising Output |
| MR | Marginal Revenue | Q* | Minimum Average Cost Output |
| MC | Marginal Cost | $P_x$ | Price Obtained for $Q_x$ |
| AC | Average Cost | $C_x$ | Average Unit Cost for $Q_x$ |

FIGURE II.1

MONOPOLY MARKET SITUATION

- Much interdependence of firms, both actual and as perceived by the firms themselves. The extent of interdependence may give rise to collusive behaviour, but this is not always the case;

- There are barriers to entry to the market. For example, where the total market size may be small relative to the optimum firm size, a large-scale production unit may be required in order to gain entry to the market. Other circumstances which can also bring this situation about include legal restraints such as licensing, limited access to resources and limit pricing by firms already in the industry;

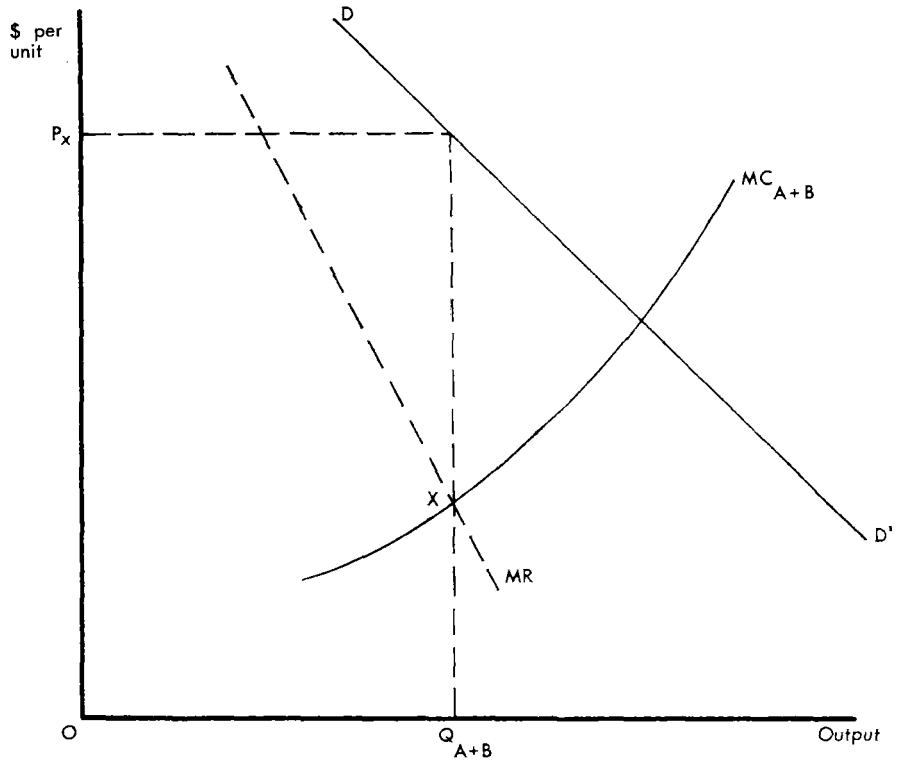
- The possibility of economies of scale;

- A tendency towards non-price competition, for example through advertising and product differentiation.

Within this range of market situations, there are several particular cases which are of interest in relation to air transport in Australia. These cases are examined in the following paragraphs.

The Case of Two Producers Without Predetermined Market Shares

This is the situation experienced by smaller scheduled airlines such as EWA, MMA and Airlines of NSW in competition with commuter services. In this case, it is assumed that there are two producers (duopoly) in a cartel-type situation and that there are barriers to entry, at least in the short run. It is further assumed that the two producers (A and B) attempt to maximise the profits of the industry which they jointly comprise. It is also assumed that they co-operate to establish a common pricing policy. The cost curves of both firms are assumed to be identical. The market situation is represented in Figure II.2 by the demand (DD'), marginal revenue (MR) and the sum of the firms' marginal cost curves ($MC_{A+B}$).




LEGEND

| | | | |
|---|---|---|---|
| DD' | Demand | $Q_{A+B}$ | Industry Output |
| MR | Marginal Revenue | $P_x$ | Industry Price |
| $MC_{A+B}$ | Combined Marginal Cost | | |
| X | Profit-maximisation Point | | |

FIGURE II.2

OLIGOPOLY MARKET SITUATION
(TWO PRODUCERS WITHOUT PREDETERMINED MARKET SHARES)

Profits for the industry as a whole will be maximised where marginal revenue from sales by both firms equals the sum of their marginal costs. The resulting equilibrium output $Q_{A+B}$ and the agreed price $P_X$ represent a situation equivalent to the monopoly case described above where the profit-maximising output is smaller than the least-cost output. This result is achieved because, although there are two producers, the result of their joint actions is the same as for a single producer. As in the monopoly case, above-normal profits are being made in the situation shown in Figure II.2.

Since the cost curves of firms A and B have been assumed to be the same, their individual profit positions are maximised and they share total industry output equally.

The Case of Two Producers with Legalised Market Sharing

This is the situation experienced by TAA and AAA, at least in regard to their activities on 'competitive' routes[1].

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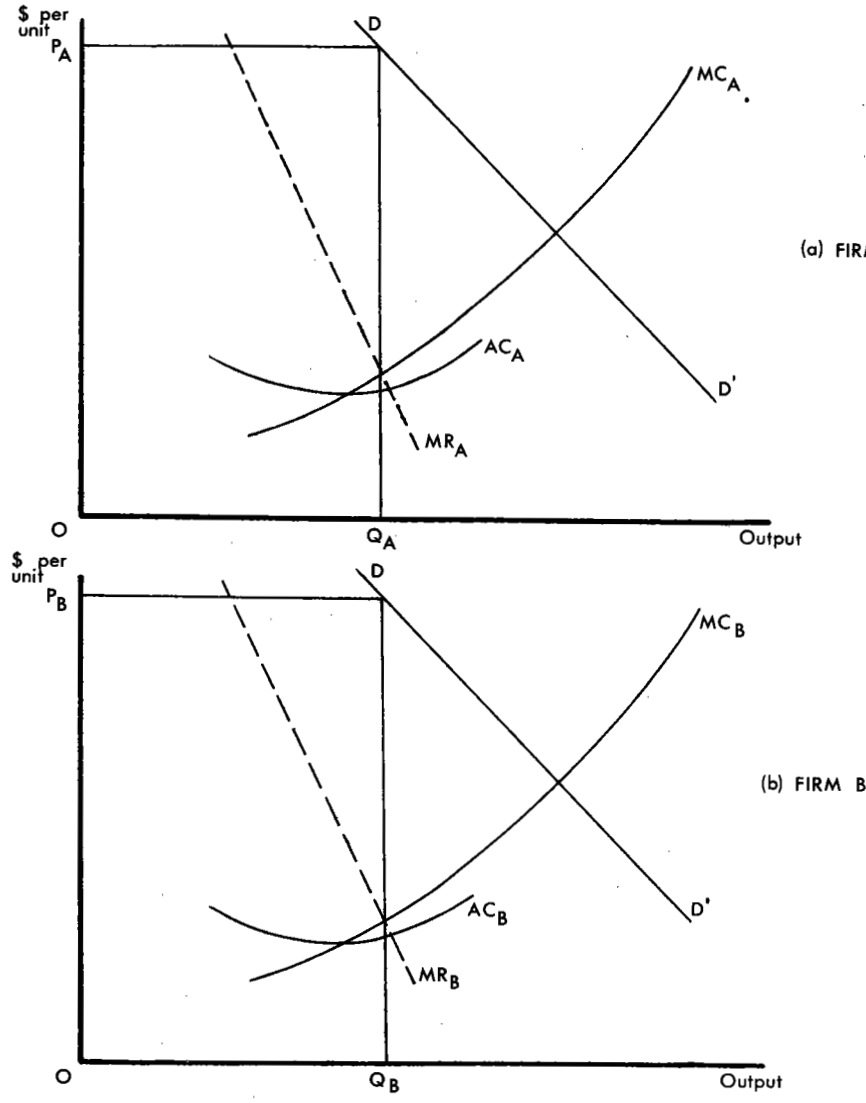
(1) The market for regular inter-city air transport services in Australia is characterised at present by there being two producers by specific government policy. By law, their joint agreement fixes tariffs and variations in tariffs, timetables, frequencies, stopping places, aircraft types and capacity, profitable load factors and other matters related to operations. The market on competitive routes is in effect divided between the two firms. Capacity determinations by the Commonwealth Government (but based on information supplied by the airlines) set capacity to be available for use by each competitor. Competition for traffic is thus limited so that actual market shares cannot vary substantially from 50:50. However, the two competitors can attempt to move their demand curves to the right (and those of the opposition to the left) by advertising, which shifts both companies' AC and MC curves upwards. While overall demand is not much affected by this activity, total costs are increased to levels higher than might otherwise occur.

In this case, a model can be postulated of two producers (A and B) operating in a market with effective barriers to entry. For any service offered, differentiation by the firms is minor, so that for most consumers the good or service offered by each would be regarded as similar. A common agreed pricing policy is assumed (and is likely to occur in practice). Because of capacity constraints each producer (operator) would, in effect, be facing an individual demand curve representing approximately half the total market demand at any particular price. This market situation is shown in Figures II.3(a) and II.3(b) under the assumption of similar costs for the two firms, and in Figures II.4(a) and II.4(b) where dissimilar costs are assumed.

In the situation where the firms have similar costs (Figures II.3(a) and II.3(b)), the profit-maximising position for each firm is defined by output $Q_A$ and price $P_A$ for firm A and output $Q_B$ and price $P_B$ for firm B, where $MC_A$ equals $MR_A$ and $MC_B$ equals $MR_B$. This situation will result in $P_A$ being equal to $P_B$ and the industry output will be divided equally between the firms in relation to their respective costs. The result is the same as in Figure II.2. The aggregate result is as shown in Figure II.1.

Where the two producers experience different cost conditions (as depicted in Figures II.4(a) and II.4(b)), their individual profit-maximising positions prior to agreement on a common pricing policy would be defined by output $Q_A$ and price $P_A$ for firm A and output $Q_B$ and price $P_B$ for firm B respectively. However, in this case, $P_A$ will be less than $P_B$ and $Q_B$ will be less than $Q_A$. Above-normal profits are greater in firm A than in firm B.

It may be that these two producers, because of legislation, must agree upon a common pricing policy. One logical outcome of their consultations could be that the high-cost firm B would propose an industry price of $P_B$ (for example). Any price between $P_A$ and $P_B$ (including $P_B$) which is accepted by firm A, will imply a smaller level of output for that firm than its profit-maximising output. Both firms will be making excess profits but to a

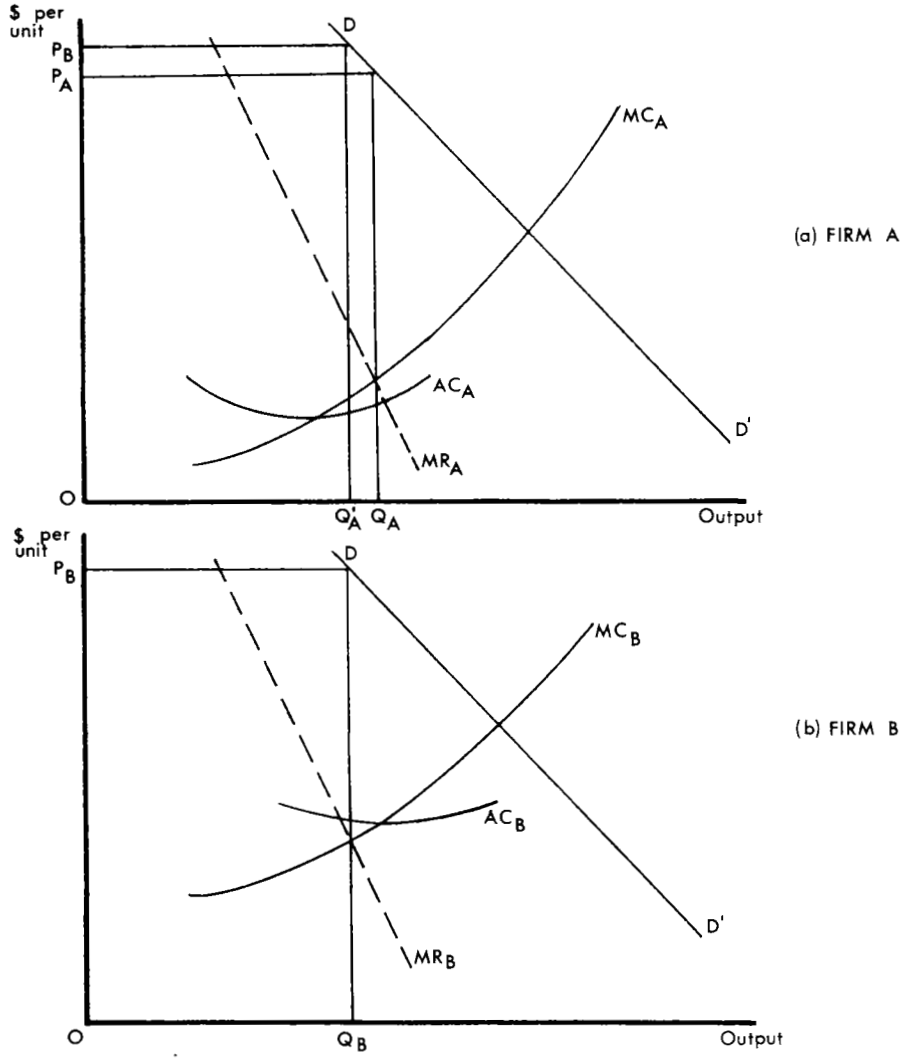



LEGEND

| | | | |
|---|---|---|---|
| DD' | Firm Demand Curve | $MR_A$ | Marginal Revenue Curve of Firm A |
| $AC_A$ | Average Cost Curve of Firm A | $MR_B$ | Marginal Revenue Curve of Firm B |
| $AC_B$ | Average Cost Curve of Firm B | $Q_A$ | Output of Firm A |
| $MC_A$ | Marginal Cost Curve of Firm A | $Q_B$ | Output of Firm B |
| $MC_B$ | Marginal Cost Curve of Firm B | $P_A$ | Price Obtained for $Q_A$ |
| | | $P_B$ | Price Obtained for $Q_B$ |

FIGURE II.3

OLIGOPOLY MARKET SITUATION (TWO PRODUCERS WITH LEGALISED MARKET SHARING AND EQUAL COSTS)




LEGEND

| | | | |
|---|---|---|---|
| DD' | Firm Demand Curve | $MR_A$ | Marginal Revenue Curve of Firm A |
| $AC_A$ | Average Cost Curve of Firm A | $MR_B$ | Marginal Revenue Curve of Firm B |
| $AC_B$ | Average Cost Curve of Firm B | $Q_A$ | Output of Firm A |
| $MC_A$ | Marginal Cost Curve of Firm A | $Q_A'$ | Output of Firm A |
| $MC_B$ | Marginal Cost Curve of Firm B | $Q_B$ | Output of Firm B |
| | | $P_A$ | Price Obtained for $Q_A$ |
| | | $P_B$ | Price Obtained for $Q_B$ and $Q_A'$ |

FIGURE II.4

OLIGOPOLY MARKET SITUATION (TWO PRODUCERS WITH LEGALISED MARKET SHARING BUT UNEQUAL COSTS)

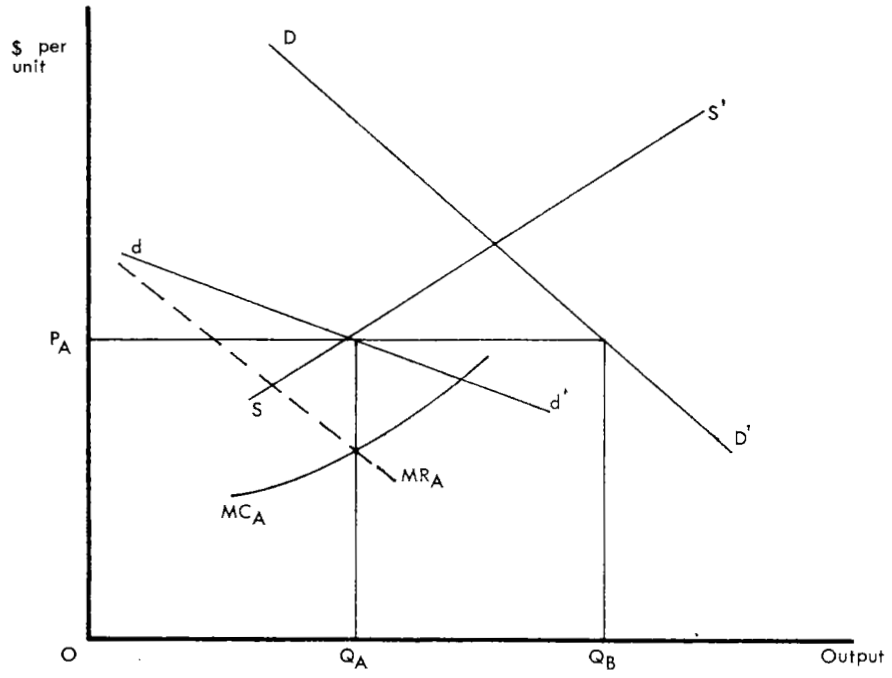
different extent. At the output $Q'_A$ (which would be firm A's output at a common industry price of $P_B$) firm A will be making smaller excess profits than at its 'normal' output $Q_A$. However, the consumers of the service will be faced with higher prices and a smaller aggregate output from the two firms than in the preceding case. The extent of the difference in price and output will increase with the disparity in the costs experienced by the two firms.

The Case of Several Producers with Price Leadership

This situation is experienced by EWA or Airlines of NSW facing competition from NSW commuter airlines. In this example, a market structure is assumed where there is one dominant firm A and a number of smaller firms which tend to accept the price set for the service by the dominant firm. It is further assumed that firm A accepts the volume of sales made by the various small producers and then supplies the rest of the demand in the market.

Figure II.5 shows the aggregate supply curve (SS') for all the small producers; the industry demand curve is DD'. The demand curve dd' for the dominant firm is derived by plotting the horizontal difference between DD' and SS' at each price level. This difference represents that part of total demand at any price which is not satisfied by the smaller firms.

The marginal cost curve of the dominant firm is $MC_A$. Assuming that firm A maximises profits, equilibrium output $Q_A$ is determined at the intersection of $MC_A$ and firm A's marginal revenue curve $MR_A$. The price determined is $P_A$ which is accepted by the smaller firms. Total industry output is $Q_B$ of which $Q_A$ is supplied by firm A and $(Q_B-Q_A)$ is supplied in aggregate by the smaller firms.




LEGEND

| | | | |
|---|---|---|---|
| DD' | Industry Demand Curve | $Q_A$ | Output of Dominant Firm |
| dd' | Dominant Firm Demand Curve | $(Q_B-Q_A)$ | Output of Smaller Firms |
| SS' | Aggregate Supply Curve | $P_A$ | Price Obtained for Outputs $Q_A$ and $Q_B$ |
| $MC_A$ | Marginal Cost Curve of Dominant Firm | | |
| $MR_A$ | Marginal Revenue Curve of Dominant Firm | | |

FIGURE II.5

OLIGOPOLY MARKET SITUATION
(SEVERAL PRODUCERS WITH ONE PRICE LEADER)

## APPENDIX III - COMPARISON OF AUSTRALIAN DOMESTIC AIRLINE FARES WITH AIRLINE FARES IN OTHER COUNTRIES

An important question in examining the economic performance of the major domestic airlines relates to the relative level of fares. The issue which has been raised is that of the levels of Australian domestic air fares (cents per kilometre) compared with fares for airlines operating in or from overseas countries. Whilst detailed comment has been made as to the operations of both TAA and AAA, the relative position of fares has not received any detailed scrutiny in terms of the types of air services operated in other countries.

In order to investigate this issue, a separate and detailed study has been completed by the BTE. The results of this research will be presented to the Committee concerned with the Domestic Air Transport Policy Review, and will also be the subject of a separate BTE publication.

In summary, this Appendix presents some of the results of the analyses. The relative positions of TAA and AAA may be determined from Tables III.1 to III.4, which show fares charged by a number of airlines for trips of different stage lengths. It is interesting to note that at no point were the Australian fares better than 10th lowest, in relation to the 24 airlines compared. It is also interesting to note that in all the analyses, TAA/AAA fares were cheaper than those of QANTAS Airways.

TABLE III.1 - COMPARISON OF ECONOMY SINGLE AIR FARES[a] FOR VARIOUS AIRLINES OVER A STAGE LENGTH OF APPROXIMATELY 700 KILOMETRES

| Airline | Fare (cents per km) | Route | Distance (km) |
|---|---|---|---|
| Saudi Arabian Airlines | 4.2 | Jeddah - Gassim | 721 |
| Philippine Air Lines | 4.6 | Manila - Cagayan D'Oro | 782 |
| Indian Airlines | 4.9 | Calcutta - Jorhat | 737 |
| Mexicana de Aviacion | 6.7 | Mexico City - Monterrey | 713 |
| United Air Lines | 7.4 | Chicago - Buffalo | 762 |
| Delta Air Lines | 7.6 | Atlanta - Baton Rouge | 723 |
| Braniff International | 7.6 | Dallas - New Orleans | 720 |
| Allegheny Airlines | 7.9 | Washington - Montreal | 771 |
| South African Airways | 8.0 | Johannesburg - East London | 771 |
| TAA and AAA | 8.2 | Sydney - Melbourne | 721 |
| Garuda Indonesian Airways | 8.2 | Jakarta - Pontianak | 726 |
| New Zealand National Airways | 8.3 | Auckland - Christchurch | 747 |
| Canadian Pacific Air | 8.4 | Calgary - Vancouver | 687 |
| Air Canada | 8.4 | Calgary - Vancouver | 687 |
| Iran Air | 9.0 | Abadah - Tehran | 658 |
| Air France | 12.2 | Paris - Nice | 686 |
| Lufthansa | 13.2 | Munich - Rome | 708 |
| KLM | 13.9 | Amsterdam - Glasgow | 715 |
| QANTAS Airways | 14.4 | London - Frankfurt | 644 |
| Swissair | 15.0 | Geneva - London | 736 |
| British Caledonian | 15.9 | London - Bordeaux | 723 |
| British Airways | 15.9 | London - Bordeaux | 723 |
| Scandinavian Airlines | 20.5 | Stockholm - Leningrad | 696 |

(a) At November 1976. Fares are expressed in US cents per kilometre.

TABLE III.2 - COMPARISON OF ECONOMY SINGLE AIR FARES[a] FOR VARIOUS AIRLINES OVER A STAGE LENGTH OF APPROXIMATELY 1400 KILOMETRES

| Airline | Fare (cents per km) | Route | Distance (km) |
|---|---|---|---|
| Indian Airlines | 5.2 | Calcutta - Madras | 1385 |
| Eastern Airlines | 5.6 | Miami - Baltimore | 1526 |
| National Airlines | 5.6 | Miami - Baltimore | 1526 |
| Garuda Indonesian Airways | 5.7 | Jakarta - Ujung Pandang | 1412 |
| Delta Airlines | 5.8 | Atlanta - Boston | 1523 |
| American Airlines | 5.9 | New York - St Louis | 1420 |
| United Air Lines | 5.9 | Chicago - Denver | 1447 |
| Mexicana de Aviacion | 6.1 | Mexico City - Dallas | 1507 |
| Air Canada | 6.8 | Winnipeg - London (Can.) | 1446 |
| TAA and AAA | 7.6 | Melbourne - Brisbane | 1443 |
| Canadian Pacific Air | 8.1 | Vancouver - Winnipeg | 1388 |
| South African Airways | 8.9 | Johannesburg - Blantyre | 1357 |
| Iran Air | 9.0 | Cairo - Kuwait | 1605 |
| Air France | 9.4 | Paris - Tunis | 1478 |
| Philippine Air Lines | 9.7 | Manila - Taipei | 1177 |
| QANTAS Airways | 10.1 | Singapore - Bangkok | 1444 |
| Swissair | 10.3 | Geneva - Malaga | 1380 |
| Saudi Arabian Airlines | 10.5 | Jeddah - Baghdad | 1397 |
| KLM | 11.2 | Amsterdam - Belgrade | 1409 |
| Lufthansa | 11.3 | Munich - Dublin | 1389 |
| Japan Air Lines | 13.4 | London - Rome | 1436 |
| British Airways | 13.4 | London - Rome | 1436 |
| British Caledonian | 13.4 | London - Rome | 1436 |
| Scandinavian Airlines | 15.6 | Stockholm - London | 1462 |

(a) At November 1976. Fares are expressed in US cents per kilometre.

TABLE III.3 - COMPARISON OF ECONOMY SINGLE AIR FARES[a] FOR VARIOUS AIRLINES OVER A STAGE LENGTH OF APPROXIMATELY 2100 KILOMETRES

| Airline | Fare (cents per km) | Route | Distance (km) |
|---|---|---|---|
| Mexicana de Aviacion | 4.8 | Mexico City - Mexicali | 2189 |
| Canadian Pacific Air | 5.1 | Calgary - Los Angeles | 2101 |
| Trans World Airlines | 5.2 | Los Angeles - Kansas City | 2190 |
| United Airlines | 5.2 | Chicago - Boise | 2309 |
| Pan American World Airways | 5.3 | New York - Dallas | 2222 |
| Braniff International | 5.3 | New York - Dallas | 2222 |
| American Airlines | 5.3 | New York - Oklahoma City | 2149 |
| National Airlines | 5.4 | Miami - Providence | 1950 |
| Eastern Airlines | 5.6 | Miami - Ottawa | 2215 |
| Air Canada | 5.9 | Toronto - St Johns | 2125 |
| TAA and AAA | 7.0 | Adelaide - Perth | 2216 |
| QANTAS Airways | 7.7 | Sydney - Auckland | 2162 |
| British Caledonian | 8.7 | London - Malta | 2085 |
| British Airways | 8.7 | London - Malta | 2085 |
| Iran Air | 9.7 | Abadan - Athens | 2399 |
| Swissair | 10.0 | Geneva - Ankara | 2273 |
| Philippine Air Lines | 10.2 | Manila - Bangkok | 2202 |
| Saudi Arabian Airlines | 10.6 | Riyadh - Karachi | 2064 |
| Garuda Indonesian Airways | 10.7 | Jakarta - Bangkok | 2336 |
| KLM | 11.1 | Amsterdam - Athens | 2174 |
| Air France | 11.1 | Paris - Athens | 2099 |
| Japan Air Lines | 11.7 | Tokyo - Peking | 2091 |

(a) At November 1976. Fares are expressed in US cents per kilometre.

TABLE III.4 - COMPARISON OF ECONOMY SINGLE AIR FARES[a] FOR VARIOUS AIRLINES OVER A STAGE LENGTH OF APPROXIMATELY 3300 KILOMETRES

| Airline | Fare (cents per km) | Route | Distance (km) |
|---|---|---|---|
| United Airlines | 4.4 | Chicago - San Juan | 3341 |
| Trans World Airlines | 4.8 | Los Angeles - Pittsburgh | 3433 |
| American Airlines | 4.8 | Los Angeles - Pittsburgh | 3433 |
| National Airlines | 4.8 | Atlanta - San Francisco | 3437 |
| Delta Airlines | 4.8 | Atlanta - San Francisco | 3437 |
| Aeromexico | 5.2 | Mexico City - New York | 3358 |
| Air Canada | 6.8 | Gander - Glasgow | 3407 |
| TAA and AAA | 7.1 | Sydney - Perth | 3315 |
| Pan American World Airways | 7.3 | New York - Guatemala City | 3323 |
| QANTAS Airways | 7.9 | Sydney - Nadi | 3173 |
| South African Airways | 8.1 | Johannesburg - Mauritius | 3067 |
| Braniff International | 8.3 | Sao Paulo - Lima | 3426 |
| Philippine Air Lines | 8.8 | Manila - Tokyo | 2998 |
| KLM | 9.2 | Amsterdam - Tel Aviv | 3315 |
| British Airways | 9.3 | London - Cairo | 3518 |
| Air France | 9.3 | Paris - Tel Aviv | 3291 |
| Saudi Arabian Airlines | 9.7 | Jeddah - Rome | 3371 |
| Japan Air Lines | 10.0 | Jakarta - Hong Kong | 3268 |
| Garuda Indonesian Airways | 10.0 | Jakarta - Hong Kong | 3268 |
| Swissair | 10.3 | Geneva - Baghdad | 3526 |
| Lufthansa | 11.5 | Munich - Tehran | 3513 |

(a) At November 1976. Fares are expressed in US cents per kilometre.

NOTATION AND ABBREVIATIONS

TAA - Trans-Australia Airlines

ATI - Ansett Transport Industries (Operations) Pty Ltd, a subsidiary of Ansett Transport Industries Limited

AAA - Ansett Airlines of Australia, a division of Ansett Transport Industries (Operations) Pty Ltd

ANA - Australian National Airways Pty Ltd (Private Airline formed in 1936, subsequently taken over by ATI in 1959)

EWA - East-West Airlines Pty Ltd

MMA - MacRobertson-Miller Airline Services, a division of Ansett Transport Industries (Operations) Pty Ltd