ENVIRONMENT B·O·P

Bay of Plenty Regional Council

Bay of Plenty
Regional Airports Requirements

Final Report

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Summary

The Bay of Plenty accounts for about 5% of total New Zealand domestic air transport movements and about 4% of domestic passengers. This is one percent less than 15 years ago. Nevertheless over the last 10 years air transport movements at Tauranga have increased at a rate greater than the regional and national average while those for Rotorua and Whakatane have increased at less than these averages.

Presently within the Bay of Plenty there are about 378,000 air passenger arrivals and departures per annum. About 63% (236,000) are through Rotorua, 30% (114,000) through Tauranga and 7% (28,000) through Whakatane. Arrivals and departures to and from Wellington account for 36% (136,000) passengers, Christchurch accounts for 34% (127,000) and Auckland 27% (101,000) with less than 4% (14,000) to other destinations.

The Bay of Plenty represents a quite small part of the national (domestic) air transport system. Its contribution to this system has declined over the past 15 years. There are some routes to and from the Bay of Plenty region that are of doubtful value or importance to the larger airlines. But the Wellington links and the Rotorua-Christchurch sector are important.

General aviation within the Bay of Plenty region represents about 10% of total general aviation in New Zealand. Tauranga is currently the third busiest general aviation aerodrome in New Zealand.

It can be argued, therefore, that overall the Bay of Plenty region is becoming less significant to the national air transport system but is an important centre for general aviation.

The economic impact of the three regional airports outside of the transportation benefits is in the order of $52 million, which when reduced by the loss in economic value added (EVA™) from airport operations suggests that the overall economic impact on the region is currently about $50 million per year. This compares with the $1.5 billion per year economic impact that the Port of Tauranga has on the region and an additional $1.8 billion per year for the rest of New Zealand.

As a general comment all airports have failed to provide their owners with an adequate financial return and each sustained an economic loss in value over the years examined. In the case of Tauranga the loss would be regarded with concern, except that much of that economic loss is due to the revaluation of assets at the time the Tauranga District Council acquired total ownership.

Tauranga airport has the capability and capacity to provide for air transport operations for the next 20 years and well beyond. General aviation activity could interfere with this from 2014 onwards and so will require continuation of the operating procedures and priorities favouring air transport.

The existing airspace conflict between aerodrome requirements and those of the Port of Tauranga are certain to be of future concern to both the airport and the seaport. At some stage during the next 20 years the Port of Tauranga is likely to be looking to extend the wharf at Sulphur Point to the south. So a choice will need to be made in favour of the airport or in favour of the seaport. Such a decision could only sensibly be made on the basis of the relative costs and benefits to economic and social development of the district and region (and nation) as a whole.

Land for commercial and industrial purposes in the Western Bay of Plenty is in short supply and 2013 will deplete reserves of land. Land that will produce employment is important to the economic and social development of the district and also the Bay of Plenty region as a whole. Tauranga aerodrome occupies 225 hectares that would provide for the land needs past 2021. The question of best land use and whether the aerodrome should be forfeited to other purposes is a complex one. It is a matter that involves more than civil aviation and air transportation and is best determined in an economic cost-benefit framework.

Such an analysis would establish whether the net benefits arising from future seaport development and the additional commercial and industrial land is greater than any net economic loss in transportation benefits arising from a relocation. It is possible that if a relocation of the aerodrome and airport resulted in the development of a regional airport there could be net benefits to the Western Bay of Plenty and Tauranga districts as well as to the region as a whole. These benefits would arise from better air services (more frequent), the use of larger aeroplanes on some sectors and the overall facilities and services of a bigger airport. Separate consideration would need to be given to general aviation, which at Tauranga has become an important part of the regional and national civil aviation system.

The Tauranga-Auckland link is not considered to be a vital or important component of the domestic network and competes head on with road transport. The Tauranga-Wellington link is important and the airlines see this sector as having growth potential. Overall, in terms of the national air transport system it is the Tauranga-Wellington sector that is of importance.

Thus in terms of the economic and social development of the Tauranga and Western Bay of Plenty districts and also the Bay of Plenty region the main issues concerning Tauranga aerodrome are questions of airspace and land use and priorities.

Rotorua airport has the capability and capacity to service turbo prop aeroplanes commonly and likely to be used in New Zealand for air transport operations over the next 30 years and beyond. Rotorua does not presently have the capability and capacity to handle jet aircraft other than BAe146s; specifically it cannot handle the B737-300 operated by Air New Zealand. For this reason the airport company has decided to extend the runway. This will enable unrestricted, in terms of payload, domestic air services through Rotorua. But the question remains whether jet aircraft will use Rotorua. In our opinion this is unlikely within the next 15 years or so.

There are two issues, however, that question the ongoing viability of the present airport. One of these issues is the need for and, if there is a need, the timing of extensions to the existing runway to cater for future air services. There is also the related question of paying for these extensions. The recently introduced passenger charge of $5 per passenger will provide less than half the indicative amount to service the proposed $16 million expenditure. The other issue is that the geographic location of Rotorua airport is not ideal, certainly for jet aircraft operations. As well there is the problem of obstacles presented by the trees located 1,200 to the north of the current airport.

History suggests that air services into Rotorua have never been stable in terms of the aircraft types and sectors flown, especially throughout the 1980s-90s. This is a result of the less than ideal operating environment and the nature of the demand for air transport. The district has fared better in terms of air services when two airlines competed for the tourism market. So for the future it is evident that a buoyant tourism market is a prerequisite to good air services for Rotorua and vice-versa. There is considerable support from Rotorua tourism interests for jet services, which they consider to be vital to their interests and those of the region.

The design and layout of Rotorua aerodrome does not lend itself to a mix of air transport and general aviation operations – simultaneous operations are prohibited. This means that there are frequent conflictions between general aviation and air transport operations. Notwithstanding this, however, Rotorua airport has ample capacity to handle future air transport movements up to 2021 and beyond. This includes general aviation.

At Whakatane present passenger numbers measured by arrivals and departures is about 28,000 per year and this number has been static over the last six years. If passenger numbers fell to 20-22,000 per year then Beech B1900D services may not be commercially viable – at best the frequency would reduce.

The demand for airport infrastructure is a derived demand that relies on the fleet and network plans of the airlines. That is, the decisions made by airlines impact on airport facilities and services they need. Airports, however, carry the risk of over investment.

Overall the three airports in the Bay of Plenty region each have the capability and capacity to cater for the future regional and national air transport requirements. Notwithstanding this, however, the present

airport infrastructure presents risks that in our opinion are of concern to the future economic and social development of the region. These risks involve the airspace and land issues surrounding Tauranga aerodrome and airport plus the question of the need for and suitability of Rotorua as an airport to support jet aircraft operations, with and without runway extensions.

Given the existing safety regulatory regime all three regional airports could continue to support air transport services and general aviation well past 2021. The question is whether they should.

For Whakatane there are no operational limitations attached to the airport except it is not certificated for scheduled air services by aeroplanes of 30 seats or more. But the question overhanging Whakatane is the limited or nil growth in the demand for air transport. So there is a question-mark over whether the airlines will continue to provide scheduled services. In our opinion it is possible that over the next 20 years or so scheduled services could be discontinued.

The big question for Tauranga is the impact on economic (and social) development on the region if the airport remains where it is. It is likely that the economic benefit to Tauranga and the Western Bay of Plenty, alone, is sufficient to warrant the airport being relocated. In other words, regardless of the benefits that may arise from a regional airport to Whakatane, Kawerau, Opotiki or Rotorua, or them all, the benefits to Tauranga and the Western Bay of Plenty are likely to be sufficient to merit the relocation of Tauranga airport.

There are a number of questions confronting Rotorua. Tourism is important to the economic development of the district (and region). Tourism operators prefer aeroplanes with a capacity to accommodate a full bus load of passengers and also jets. The geographic location of Rotorua airport will continue to place constraints on jet operations whether or not there is an extension. If Tauranga decided to "go it alone" and relocate the airport to another location, this is likely to have a detrimental impact on air services to and from Rotorua. Before 2011 the Tauranga-Western Bay of Plenty districts will have more than twice the population of Rotorua. Tauranga is forecast to have greater frequency of air transport flights than Rotorua. A combination of these factors suggest that air transport services for Rotorua would be significantly affected by the relocation of Tauranga airport. With these issues in mind it would be prudent for Rotorua to have an interest in any examination of the benefits to the region from a regional airport That is the notion of a regional airport should interest Rotorua.

The airlines would prefer a regional airport as this would enable them to consolidate their network and route structure, offer larger more efficient aeroplanes and, overall, better services to passengers. In our opinion jet services to Wellington and probably Christchurch are more likely sooner, rather than later, with a regional airport. But, unless air transport services ceased at Rotorua and Tauranga, the airlines would not support a regional airport.

1. Background

1.1 The Situation

Under the Local Government Act 1974 and the Resource Management Act 1991 (RMA) the regional council has the function for "the establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region", to give effect to the RMA. The RMA is about sustainable management of natural and physical resources: enabling people and communities to provide for their well-being within environmental constraints. Natural and physical resources include land and structures. The Bay of Plenty Regional Council interpret integrated management as recognising that all resources are interrelated and can not be treated as separate entities, and is facilitated when agencies charged with the management of such resources coordinate the exercise of their roles. It is expected, therefore, that an integrated approach leads to efficiency and effectiveness.

As well as being physical resources, airports are recognised under the RMA [section 166] as being network utility operations. The *Bay of Plenty Regional Policy Statement* (Chapter 13, Physical Resources/Built Environment) includes airports within major regional infrastructure. Several provisions in Chapter 13 can be related to airports, including the policy:

> *To promote the efficient use and development of existing and future infrastructure and utility networks,*

and the method

> *Environment B.O.P. will be available to coordinate investigations into the development of a subregional or regional airport.*

So, amongst other things, the Bay of Plenty Regional Council, referred to as Environment BOP (EBOP) is to promote sustainable and integrated resource management within its region of responsibility. It therefore has an interest in the economic and social development of the region, particularly environmental issues. Transportation is one of the significant areas of interest to EBOP. Accordingly EBOP is concerned that an appropriate airport infrastructure exists and that plans are made to ensure that these airports optimise regional economic and social benefits. In terms of EBOP's vision statement for transport,[1] a vision for airports and air transport may be stated as:

> *A safe, convenient and effective airport system which uses resources efficiently, maximises regional economic and social benefits and is managed with consideration of its effects on the environment.*

This study therefore addresses the wider issues of a safe, accessible, reliable and efficient air transport system in terms of the economic and social developments of the region.

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[1] *Environment BOP:* Strategic and Long Term Financial Strategy: July 2001 – June 2011, 14 June 2001 (see page 19).

With this in mind EBOP wish to:

- evaluate the existing three airports of Rotorua, Tauranga, Whakatane in the context of the regional and national transport systems;

- determine the risk to regional development of the present airport infrastructure (*ie* three autonomous airports);

and, if there is a risk, to

- assess airport development options as well as the development of a single regional airport.

1.2 Object of the Study

The objective of the study is twofold:

1. to *determine* the risk to regional development of the present airport infrastructure (*ie* three autonomous airports); and then (if there is a risk);

2. to *assess* regional airport requirements including the need for a single regional airport.

The first part has been called ***Bay of Plenty Regional Airports Requirements Study.*** This study is to determine the capability and capacity of the existing three airports in terms of the future regional and national air transport requirements. In particular the risks of the present infrastructure to the future economic and social development of the region. This report addresses the first part.

The second part has been called ***Bay of Plenty Regional Airports Development Study.*** This study would identify and determine airport requirements for the future economic and social development of the region and as well (and especially) to meet the needs of a safe, accessible and affordable national air transport system. If the level of risk to the region (and the nation) of the present infrastructure is of only some concern (*ie* there could be some loss of efficiency) or of little concern (*ie* an administrative concern) then the present infrastructure can be considered adequate and so a single regional airport is not likely to be needed.

1.3 Conduct of the Study

1.3.1 Methodology

The regional airports requirements study involved three tasks as follows:

- *Analyse air transport demand and supply:*
  - passenger traffic for each of the surrounding airports: Rotorua, Tauranga, Whakatane, Hamilton and Taupo;
  - aircraft schedules and services;

- future airline operating plans including aircraft types and route planning; and
- conduct analyses to arrive at an understanding of strategic issues which determine the air transport requirements for airport services for the Bay of Plenty Region.

- *Analyse airport services supply and demand:*
  - the present supply of airport services within the region in terms of their capacity, utilisation, operational and financial performance;
  - the potential demand for airport services within the central North Island region;
  - safety and economic regulatory matters concerning the civil aviation system; and
  - conduct analyses to arrive at an understanding of the key strategic issues concerning the capacity and operational capability of existing and proposed airports.

- *Assess impacts and risks to regional development:*
  - assess performance of the regional air transport system in a regional and national context;
  - determine the risk context;
  - identify risks;
  - assess and rank the risks.

1.3.2 Study Team

McGregor & Company, analysts and advisers specialising in transport and energy conducted the study. The study team consisted of Messrs Ian Brown, David Eagles and Michael Murray.

1.3.3 Consultation

The study was commenced in late June 2002 when the study team met with the mayors and chief executives of the (in alphabetical order); Kawerau, Opotiki, Rotorua, Tauranga and Whakatane district councils. As well, during the conduct of the study the following people, other than EBOP, were visited and consulted, some more than once:

- Rotorua Regional Airport Ltd (Bob Wynn, Airport Manager)
- Tauranga Airport Committee (Board Members)
- Tauranga Airport (Gavin Meadows, Airport Manager)
- Whakatane Airport (Ted Hipkiss, Director Community Services)
- SmartGrowth (Ken Tremaine, Consultant)
- Waikato Regional Airport Limited (Hugh McCarroll, Chief Executive; Rosemary Poole, Business Development Manager)
- Airways Corporation of New Zealand Limited (senior air traffic controllers at Rotorua, Tauranga and Hamilton)
- Air New Zealand Limited (Howard Jellie, Vice President New Zealand Regionals; Bruce Rotherham, Manager Network Strategy; Malcolm McAllister, Flight Operations Engineer)
- Eagle Air (Wayne Taylor, Chief Pilot)
- Air Nelson (Grant Jolley, Line Operations Manager)

- Origin Pacific Airways Limited (Robert Inglis, Managing Director)
- Tauranga District Council (Andy Ralph, Manager–Environmental Policy; David Phizacklea, Planner; Allan Tiplady, Director Project Consultancy)
- Priority One Western Bay of Plenty Inc (Jeff Williams, Chief Executive Officer)
- Ministry of Transport (John Edwards, Assistant Manager Infrastructure and Services)
- Access Strategic Roading Network (John Hannah, Coordinator).

In August 2002 the Rotorua District Council purchased the 50% shareholding in Rotorua Regional Airport Ltd held by a private investor since 1998. This had an impact on the conduct of the study in the context of the consultation process with the airport and delayed the provision of some information.

As a general comment the scope and detail of information available from the airports has been somewhat sparse. Aircraft movement data is collected by Airways Corporation of New Zealand Ltd, the main provider of air traffic services in New Zealand. Airways Corporation can also provide passenger information of sorts – this is persons on board an aircraft as filed on flight plan details lodged by airlines with Airways Corporation prior to take off. Presently this information so recorded is unfortunately unreliable. So unless specific arrangements are made between an airport and Airways Corporation the recorded persons on board may not be punctiliously recorded. The only reliable measure of passenger data is that recorded by the main airlines. The major airports and international airports do have procedures for collecting (mostly) reliable passenger information, which they need for their own purposes. Good data on passenger numbers was not available from the airports. (Rotorua had some passenger data back to October 1998 but this is for arrivals only and is incomplete.) We consider the airports should collect such basic information.

Notwithstanding this we have been able to determine passenger numbers by route for the airports using a combination of data from the airlines, Airways Corporation, the airports and own our resources. We believe the passenger information, thus determined, to be reasonably accurate and the best available.

A draft report was submitted to EBOP late October 2002. After brief comments a draft final report was submitted to EBOP on 7th November 2002 which was in turn distributed to a number of organisations (*eg* district councils, airport authorities, airlines, etc) for comment by the end of the month. The consultants also met with Tauranga and Rotorua airports before finalising the report.

1.4 Risks Concepts

The key *risk* concepts involve:

- *context,* which relates to the intention or desire;
- *chance,* which is the likelihood of certain outcomes or events and relates to its unpredictability; and
- *consequences,* which may be favourable or unfavourable.

In this study the context is the future risk the existing airport infrastructure presents to the region as a whole in terms of future economic and social development.

Risk, when measured in terms of likelihood and consequence provides a measure of "riskiness". These concepts have been applied in this study.

In air transport studies we deal with the question of likelihood as follows:

certain	-	will happen
likely	-	probably will happen
possible	-	may or may not happen
unlikely	-	probably won't happen
rare	-	expected not to happen.

The question of the impact or consequence is dealt with thus:

catastrophic	-	failure of the business or enterprise
alarming	-	failure of the operation or function
of concern	-	loss of effectiveness
of some concern	-	loss of efficiency
of little concern	-	administrative inconvenience

These classifications have been used in our analysis.

1.5 Structure of the Report

The report first outlines the elements and main features of the air transport system including the economic and safety regulatory requirements and puts Bay of Plenty air transport requirements into a regional and national context.

The report then focuses on the role, function and management of airport operations; the economic impact of airports is discussed and the concept of airport capacity is introduced.

Each airport is then examined in turn to determine its present performance in terms of the air transport system as well as its capability and capacity. Future air transport requirements are also assessed.

The style of the report is to identify the facts and make assessments based on these facts. Issues are then identified from which conclusions can be made.

The next chapter discusses the air transport system.

2. The Air Transport System

2.1 Importance of Air Transport

Without air services provincial communities have to rely entirely on road and rail transportation or in some cases maritime transportation. Communication is the lifeblood of modern communities; all towns and rural areas require access to other towns, rural areas and the main cities. Tourism is an important industry in New Zealand; it's development would be limited without adequate domestic air services.

The Bay of Plenty region is home for 6.4% of New Zealand's population and in area occupies 12,486 square kilometres, which is 4.6% of New Zealand's total land area. At its extremities the region extends 205 km (in a straight line) from east to west and 185 km north to south. *Table 1* indicates the road distances to the main population centres in the North Island.

Table 1: **North Island Road Distances**

(Units: km)	*Auckland*	*Hamilton*	*Wellington*
Kawerau	287	161	512
Opotiki	352	241	592
Rotorua	235	109	460
Tauranga	210	108	545
Whakatane	301	195	546

Minimum road travel times to Wellington take between six hours (from Rotorua) to almost eight hours (from Opotiki); it is about seven hours 20 minutes from both Tauranga and Whakatane. To Auckland road travel times are in the order of 2.5 hours from Tauranga, almost three hours from Rotorua, 3.8 hours from Whakatane and almost 4.5 hours from Opotiki. To Hamilton travel times range from 1.2 hours from Rotorua and Tauranga to 2.7 hours from Opotiki.

Point-to-point air travel competes with the motor car – the airlines are very aware of this.

Table 2 illustrates the direct air links currently supported by scheduled air transport services through the three airports in the Bay of Plenty region.

Table 2: **Bay of Plenty Direct Air Links**

	Rotorua	*Tauranga*	*Whakatane*
Auckland	✓	✓	✓
Hamilton		✓	
Wellington	✓	✓	
Christchurch	✓		

It is evident that air transport provides a necessary link to Wellington, especially for business purposes. For travel to Auckland, air travel is also a highly desirable alternative to road transport from Whakatane. For Rotorua, the demand for air travel to Auckland very much depends on the purpose for travel. Air Transport as an option for travelling between Tauranga and Auckland is also very much dependent

on the purpose for travel. The Rotorua-Christchurch link is primarily seen as being important to tourism interests.

So at the outset air transport links between the Bay of Plenty and Wellington have been seen to be necessary, those to Auckland have been seen to be (highly) desirable, while the link to Christchurch is seen as being highly desirable for the tourism industry.

2.2 Institutional Developments in Aviation

There has always been a close involvement between governments and the industry in matters of civil aviation. This involvement has been, and is, at both central and local government levels – and politics has always been close to the crux of the matter. At a domestic level the issue is the degree of economic liberalisation ("open skies" or deregulation) versus protectionism (self interest) and the question of ownership of the aviation infrastructure.

World-wide during the last 15 years or so there has been a shift in the approach of governments to economic and social development. In New Zealand the civil aviation and air transport sector was one of the early targets in the Government's economic and public sector reform processes. This has resulted in:

- deregulated domestic air transport markets (1989),
- the so-called single aviation air market between Australia and New Zealand (1990s),
- deregulated (open skies) international air transport markets (since 1990s),
- the corporatisation of the air navigation system and air traffic management system (1987),
- the corporatisation and privatisation of airport authorities (since 1988),[2]
- the creation of a stand-alone civil aviation safety authority (1992), and
- the corporatisation of the aviation security service (1994),
- the privatisation (1989) and more recently re-nationalisation (2001) of Air New Zealand.

The success of these reforms hinges on the ability of organisations to take advantage of these new divisions of responsibilities and being able to provide effective and efficient air transport services. This means being able to provide services and facilities that 'do the job' or are fit for the purpose', that are reliable and meet minimum quality standards and that are low cost. This is what the air transport markets require. As a consequence the fully serviced airline model is now under threat from the low cost airline model.

For airports their role and function within the air transport system is to support aircraft operations by providing services and facilities commensurate with a safe, accessible, reliable and efficient air transport system – no more and no less. Within a wider context airports can be an important ingredient for the economic and social development of a region (and also nation).

[2] The Government has in the last three years changed its position on airports and does now not have a policy to exit from its joint venture airport partnerships.

2.3 Post Year 2001

The year 2001 saw further very significant and far-reaching developments within civil aviation. They have mainly concerned the airlines and aircraft operators rather than the airports. Tasman Pacific Airlines (flying as Qantas New Zealand) collapsed in April 2001 and Ansett Australia (owned by Air New Zealand) collapsed in September 2001, each with $millions of debt. Air New Zealand has once again come under government ownership and control (December 2001). Qantas now operates in the domestic New Zealand market in its own right and a new entrant, Virgin Blue, has established itself in the Australian domestic market and has its eye on New Zealand. Meanwhile Qantas has its eye on Air New Zealand.

The two most significant changes for the domestic air transport market in New Zealand are perhaps the jettisoning by Air New Zealand of the old 'fully serviced airline' model in favour of the 'low cost budget airline' model – New Zealand Express – and the entry of Qantas in its own right. Origin Pacific has emerged as New Zealand's second airline.

Furthermore, the events of September 11th have highlighted the vulnerability of the civil aviation system to terrorist action. This has (again) brought the need for aviation security under the spotlight and will have ongoing implications for airport operation and management as well as for the tourism industry.

2.4 Anatomy of the Air Transport System

Airports are an essential part of the national air transport system. Therefore a study of airport infrastructure, management and operations and can only be properly conducted within the context of the national air transport system. Because of the size and geography of New Zealand it is the national transport system that is of prime interest, however, the regional transport system is also of interest especially for general aviation (GA).

What is the air transport system? It consists of three components or sub systems and two sets of requirements.

The components of the air transport system are:

- *Aircraft operations sub system*: which consists of all the functions, organisations and individuals involved in making an aircraft fly safely and efficiently from one place to another; it includes the airline operator, maintenance organisations and other functions serving aircraft on the ground. The main participants are Air New Zealand, Qantas and Origin Pacific Airways. The aircraft operations system for the Bay of Plenty involves a number of GA operators involved in various commercial aviation activities as well as private aviation activities.

- *Aerodrome sub system*: which provides all the services and facilities on the ground for take-off and landing and for loading and unloading passengers

and cargo as well as various aviation support activities – refuelling for aircraft, links to the land transport system, etc. Many aerodromes have a geographic monopoly and for this reason they have often been owned and operated by local or central governments. Within the Bay of Plenty there are three airports, Rotorua, Tauranga and Whakatane; and there are also aerodromes at Opotiki, Kawerau, Galatea and Waihi Beach.

- *Airspace sub system*: which provides the airspace, air traffic services, navigation and guidance services and information services for the safe conduct of flights. Most functions within the airspace system have until recently been seen to be a state responsibility but over the last 10-15 years commercial organisations have begun to provide air traffic services. The sovereignty of the airspace, however, remains with and is a matter for governments. At Rotorua and Tauranga airports air traffic services are provided; they are not provided at Whakatane.

The point is that for an effective and efficient air transport system the aerodrome sub system cannot ignore the requirements of the aircraft operations and airspace sub systems and vice-versa. So for the aerodrome operator, airline requirements and airspace requirements will have a significant and probably determining effect on aerodrome requirements.

These three sub systems are specifically governed by two quite different and distinct regulatory requirements: transport or economic requirements and safety requirements.

Figure 1: **Air Transport System**

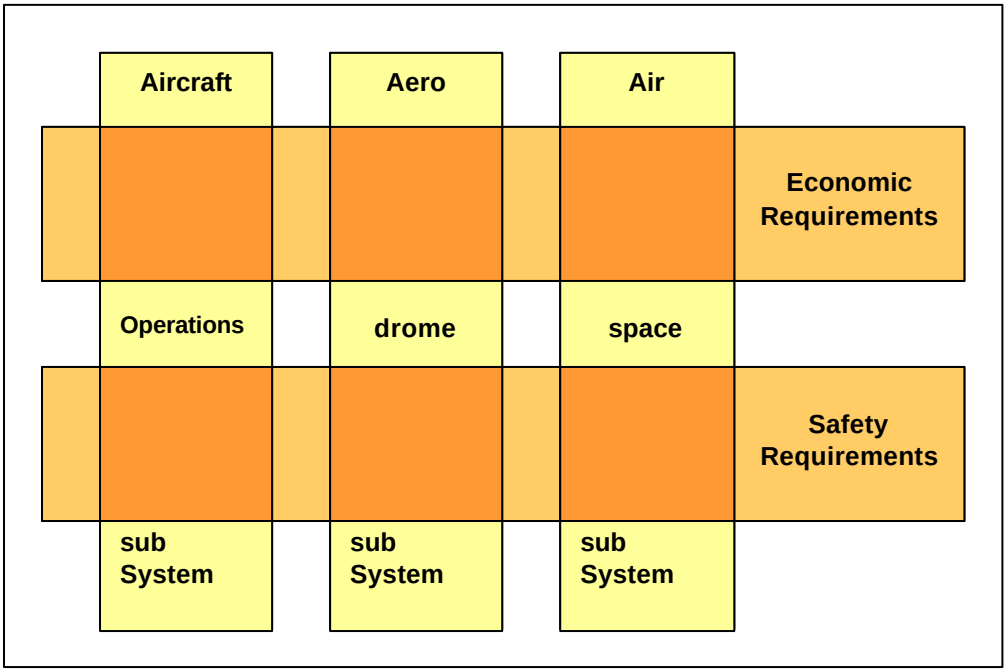

Figure 1 illustrates the relationship of these requirements with the air transport system and are explained below:

- *Economic requirements*: these are the policies, regulations and other requirements that are aimed at the air transport market for satisfying supply and demand. They deal with air services licensing, traffic rights (both international and domestic), air fares, airport charges, air navigation service charges, service standards within the air transport system and any other matter (*eg* airspace sovereignty) that has an impact on the "market" for air transport.

- *Safety requirements*: these are simply the policies, regulations and other requirements to achieve an appropriate level of flight safety in the air transport system. Safety requirements must meet minimum standards and these are set out in New Zealand Civil Aviation Rules (NZCARs). These safety requirements are quite independent of the economic requirements.

Governments set economic and safety policies and requirements and it is important to differentiate between the two. They are set out in general or specific legislation.

An analysis and study of the airport requirements is essentially to do with the economic requirements, that is the supply and demand for air transportation and airport services. General aviation services also form an important component of the national air transport system. Furthermore while recreational and private flying is not strictly commercial aviation they rely on the facilities and services provided for commercial aviation; for the purposes of this study they are included with general aviation.

Thus, while we are primarily interested in that part of the aerodrome sub system which intersects with the economic requirements of the overall air transport system, the demand for airport services and facilities is largely determined by the aircraft operations sub system.[3]

2.5 Economic Regulation

The economic requirements placed on the air transport system are mainly governed by legislation of general applicability such as those prescribed in the Commerce Act 1986 and the Fair Trading Act 1986.

In this regard the matter of airport charges has for some time attracted the attention of the Government and the Commerce Commission. For the last three years or more the Commerce Commission has been considering whether price controls should be imposed over airport charges set by Auckland, Wellington and Christchurch airports. These airports in particular are seen as having geographic monopoly power, with no effective alternatives and limited competition. The Commission has noted in its report that airport charges should allow for a 'normal' rate of return over a medium term and allow for efficient operating costs and no more. As well the Commission noted that today's users (of airport services), that is the airlines and passengers,

[3] The duality principal of transportation can apply to the air transport system. That is transport services can arise in response to a demand or the provision of transport services can generate a demand. In New Zealand we believe that this principle may be more applicable to the aircraft operations sub system than the other sub systems. Attempts to apply it to the aerodrome sub system draw comparisons with the "cargo cult" in Papua New Guinea.

should only bear today's costs and not costs associated with future increases of capacity. Airports should bear the cost of holding surplus land associated with future demand.

A matter of contention has been the valuation of airport assets. The Commerce Commission considers only assets used and useful should be included in 'the airport' assets. So land for future development of an aerodrome, therefore, should be excluded. Specialised assets (*eg* runways, terminal buildings) should be valued at historic cost and depreciated accordingly to reflect the remaining useful life. (We have some reservations about using historic cost in the valuation of airports and we suspect that this will prove to be a hotly contested issue.)

While these matters and concerns are directly aimed at Auckland, Wellington and Christchurch airports the principles articulated by the Commerce Commission will apply to all airports.

There is little industry specific economic legislation relating to civil aviation and air transportation. The Airport Authorities Act 1966 provides part of the economic regulatory framework for the aerodrome sub system. There are some specific economic requirements in the Civil Aviation Act 1990, which relate to airspace and international air services, and the Air Facilitation (Domestic Passengers and Cargo) Act 1994 is to do with customs and immigration requirements.

The Airport Authorities Act 1966 essentially confers powers on local authorities and others to own and operate airports. It sets out the main (economic) requirements governing the ownership and operation of airports in New Zealand. In particular the Act makes the following definitions:

> *"Airport authority" means a local authority for the time being authorised under section 3 of this [Airport Authority] Act to establish, maintain, operate or manage an airport; and includes any person or association of persons authorised under subsection (3) of that section to exercise the powers of a local authority:*
>
> *"Local authority' means a territorial authority or regional council or district council within the meaning of the Local Government Act 1974; and includes any public body declared by any Act or by the Governor-General by Order in Council, to be a local authority for the purposes of this Act:*

Section 3 of the Act, *Airport authorities may establish and carry on airports,* states that any local authority with the prior consent of the Governor-General (by Order in Council) may own and operate an airport "and may acquire land for any such purpose either within or without its district".

The Airport Authorities Amendment Act 1986 authorised the establishment of airport companies and prescribed requirements for airport companies. An airport company is defined in this Act as:

> *a company incorporated under the Companies Act 1993 [1955] that is for the time being authorised under section 3 (3) of this Act to exercise the powers of a local authority under that section:*

The 1986 amendments to the Airport Authorities Act 1966 enabled airport companies to set airport charges after consultation with users.

Amendments to the principle Act in 1997 introduced the categories of:

- a *specified airport company,* is an airport company with a revenue in excess of $10 million; and

- a *substantial customer*, is a customer that pays an airport company an amount that exceeds 5% of the airport company's total revenue for 'identified airport activities'.

These 1997 amendments make provision for airport companies to set charges for the use of airport services and facilities. All airport companies, however, must consult with 'substantial customers' in setting airport charges. 'Specified airport companies' must consult with 'substantial customers' on capital expenditure planned within a five year period and in excess of 20% of the value of the 'identified assets' of the airport company.

There is also provision for the making of regulations requiring airport companies to disclose certain information about the activities, operations and financial performance of the airport. The Airport Authorities (Airport Companies) Information Disclosure Regulations 1999 require specified airport companies to disclose operational and financial performance information including the basis for airport charging.

It is therefore evident that the economic regulatory regime governing the air transport system is, what has become known as, "light handed" in nature. It is also mainly aimed at airports.

It is also evident that an airport authority that operates as an airport company has greater actual or potential economic requirements to satisfy than one that is not an airport company.

Rotorua airport is managed as an airport company but is not a 'specified airport company'. Tauranga and Whakatane are not operated as airport companies.

2.6 Safety Regulation

The Civil Aviation Act 1990 prescribes the safety and security requirements for the air transport system. The Act makes provision for the making of New Zealand Civil Aviation Rules, NZCARs, as noted in section 2.4 above. Two rules specifically apply to airports:

- *NZCAR Part 139* Aerodromes – Certification, Operation and Use,
- *NZCAR Part 157* Notice of Construction, Alteration, Activation and Deactivation of Aerodromes.

There are other rules that also apply to airports or aerodromes and chief amongst these are:

- *NZCAR Part 12* Accidents, Incidents and Statistics,

- *NZCAR Part 71* Designation of Airspace,
- *NZCAR Part 73* Special Use of Airspace,
- *NZCAR Part 77* Objects and Activities Affecting Navigable Airspace.

NZCAR Part 139 requires an airport authority or airport company to be issued with an aerodrome operating certificate in order to serve scheduled (regular) air transport operations with aeroplanes of 30 or more passenger seats. This requires an airport to, amongst other things, meet prescribed standards for: quality assurance, an emergency plan, rescue and firefighting, management, maintenance, security and aerodrome design. It is noted that the airport authority is responsible for ensuring the provision of an aerodrome control service or flight information service or both. As noted in section 2.4 these services are provided by Airways Corporation at Rotorua and Tauranga.

Tauranga Airport Authority and Rotorua Regional Airport Limited have both been issued with an aerodrome operating certificate under NZCAR Part 139. Whakatane Airport Authority maintains and follows operational procedures that are broadly in line with Part 139 requirements but its airport is what is known as a non-certificated aerodrome.

2.7 Environmental Regulation

It can be argued that environmental requirements straddle both the economic and safety requirements. They chiefly concern rules relating to land use, aircraft noise levels in the vicinity of airports and quarantine waste. The relevant requirements are set out in:

- *Resource Management Act 1991,*
- *NZCAR Part 93*, Special Aerodrome Traffic Rules and Noise Abatement Procedures,
- *Bio Security Act 1993.*

2.8 Bay of Plenty Air Transport

Total Bay of Plenty air transport movements represent about 5% to 6% of total New Zealand air transport movements. General aviation within the Bay of Plenty, however, represents about 10% of New Zealand's general aviation movements. In the early 1980's general aviation in the Bay of Plenty accounted for 9% of the New Zealand total. The difference today is that it has shifted its focus to Tauranga. (An aircraft movement is a take off, landing or missed approach by an aeroplane; this excludes helicopter operations. Thus aircraft movements are an indication of the utilisation of an aerodrome or airport. It is essentially aircraft movements that create the demand for airport facilities and services.)

2.8.1 Aircraft Movements

Table 3 compares aircraft movements within the Bay of Plenty Region and Waikato Region as a percentage of total New Zealand aircraft movements.

Table 3: **Air Movements 1997 to 2001**
(as a percentage of total New Zealand movements)

	Domestic ATM	International ATM	GA & Military	Total Movements
Rotorua	2.6%	0%	2.4%	2.4%
Tauranga	2.3%	0%	7.4%	5.3%
Whakatane	0.7%	0%	0.1%	0.3%
Bay of Plenty	5.6%	0%	9.9%	8.9%
Waikato	3.2%	2.1%	9.2%	6.7%

These percentages of aircraft movements have been reasonably constant for the last 10 years[4]. There is one exception and that is for general aviation; Tauranga has increased its proportion of general aviation movements over the last 10 years. This is illustrated in *Table 4,* which details the average annual increase (AAI) in aircraft movements over the last 10 years showing this increase between 1991 and 1996 (5 year AAI), 1996 and 2000 (5 year AAI) and 1991 and 2001 (10 year AAI).

There are presently almost half a million domestic air transport movements per year in New Zealand of which about 12,000 are through Rotorua, 11,300 through Tauranga and 3,300 through Whakatane. (By comparison there are a total of 46,200 international air transport movements through New Zealand.) The Bay of Plenty Region accounts for 26,600 movements (5.3%) compared to 16,000 (3.2%) for the Waikato Region. (Table 4 excludes international movements.)

Domestic air transport movements in New Zealand increased by an average of 4% per annum over the 10 years between 1991 to 2001. In both the Bay of Plenty and Waikato regions domestic air transport movements increased 5% per annum in the same period. But in the same period (1991-2001) domestic air transport movements for Tauranga more than doubled with an annual average increase of 9%. This compares to an average annual increase of 2% for Rotorua and 3% for Whakatane.

General aviation (including military aviation) in New Zealand increased by 1% per annum between 1991 and 2001. For Tauranga general aviation activity (as measured by aircraft movements) increased by 8% per annum during this same period. It was static for Rotorua having reached a peak of 25,625 movements in 1997 but fell away sharply in 1998. We estimate that general aviation activity at Whakatane is not much more than 500 movements per year.[5]

So overall aviation activity at Tauranga has grown significantly during the last 10 years. Taupo is the only other aerodrome (airport) to match this growth in aviation activity and only for general aviation. Rotorua has experienced mixed fortunes. In the 1980's Rotorua's aircraft movements were in the order of 38,400 per year. General aviation accounted for about 26,600 movements and air transport about 11,800, which is more or less what air transport movements are today. Total aircraft movements in Whakatane have declined.

[4] They represent aggregate movements between 1997 and 2001 and so percentages will differ from year-on-year percentages.

[5] In the 1980's general aviation movements at Whakatane were in the order of 4,500 per year.

Table 4: **Aircraft Movements: 1991 - 2001**

	1991	*5yr AAI*	*1996*	*5yr AAI*	*2001*	*10yr AAI*
Domestic Air Transport						
Rotorua	9,571	6%	12,698	-1%	11,980	2%
Tauranga	4,740	10%	7,531	8%	11,296	9%
Whakatane	2,496	3%	2,912	3%	3,328	3%
Total Bay of Plenty	16,807	7%	23,141	3%	26,604	5%
Hamilton	6,609	10%	10,533	3%	12,181	6%
Taupo	3,495	10%	5,502	-7%	3,848	1%
Total Waikato	10,104	10%	16,035	0%	16,029	5%
New Zealand	340,448	7%	474,220	1%	496,309	4%
General Aviation & Military						
Rotorua	16,733	8%	24,684	-7%	17,017	0%
Tauranga	29,721	6%	40,362	9%	62,508	8%
Whakatane	2,500	-6%	1,862	0%	1,862	-3%
Total Bay of Plenty	48,954	6%	66,908	4%	81,387	5%
Hamilton	36,156	4%	43,846	-2%	39,329	1%
Taupo	15,952	10%	25,930	7%	36,727	9%
Total Waikato	52,108	6%	69,776	2%	76,056	4%
New Zealand	736,965	3%	840,216	-1%	799,594	1%
Total Movements						
Rotorua	26,304	7%	37,382	-5%	28,997	1%
Tauranga	34,461	7%	47,893	9%	73,804	8%
Whakatane	4,996	-1%	4,774	2%	5,190	0%
Total Bay of Plenty	65,761	6%	90,049	4%	107,991	5%
Hamilton	42,765	5%	54,379	-1%	51,510	2%
Taupo	19,447	10%	31,432	5%	40,575	8%
Total Waikato	62,212	7%	85,811	1%	92,085	4%
New Zealand	1,077,413	4%	1,314,436	0%	1,295,903	2%

2.8.2 Air Transport Passengers

It is difficult to be certain about the contribution the Bay of Plenty region makes to the passenger flows in the national air transport system. This is simply because total passenger numbers are no longer being collected as an official (government) requirement. Furthermore, not all airports collect passenger numbers and if they do they may collect only arrivals or departures, not both. Persons carried on board flights are recorded on the flight plans but the systematic recording of this data by Airways Corporation is in some instances unreliable unless special arrangements are made. Consequently for over 15 years the only definitive data is that collected by the airlines.

Definitive passenger numbers are available for 1982-86 and provide some basis for comparison. This was a period of significant growth in air transportation and coincided with the economic deregulation of the domestic air transport market – Newman's Airways (later Ansett New Zealand) began operations in 1985. *Table 5* illustrates the situation for the Bay of Plenty during the early 1980's.

Table 5: **Bay of Plenty Passenger Numbers (1982-86)**

	Mean 1982-86	*1982*	*1986*	*AAI*
Rotorua	221,358	125,458	311,542	26%
Tauranga	80,182	72,714	88,138	5%
Whakatane	39,915	35,093	41,908	5%
New Zealand (000's)	7,212	5,886	7,558	10%

In the 1980's Rotorua accounted for 3.1% total New Zealand domestic passengers, Tauranga for 1.1% and Whakatane for 0.6% of total domestic passengers. *Table 6* illustrates this and compares domestic passengers as a percentage of total domestic passengers versus domestic air transport movements as a percentage of total domestic air transport movements. What we can conclude from this is that during this period the Bay of Plenty accounted for about 5% to 6% of the activity within the national domestic air transport system – including international the contribution would be a little less.

Table 6: **Movements versus Passengers 1982-86**

	% Domestic ATM	*% Domestic Pax*
Rotorua	3.3%	3.1%
Tauranga	2.1%	1.1%
Whakatane	0.8%	0.6%
Bay of Plenty region	6.2%	4.8%

Today the Bay of Plenty accounts for between 4% and 5% of the total activity within the national (domestic) air transport system. Air transport movements are 5% of the total and we estimate that total Bay of Plenty passengers represent about 4% of total domestic air transport passengers. *Table 7* outlines the situation today.

Table 7: **Movements versus Passengers 1997-01**

	Actual % Domestic ATM	*Estimate % Domestic Pax*
Rotorua	2.6%	2.5%
Tauranga	1.9%	1.0%
Whakatane	0.7%	0.5%
Bay of Plenty region	5.2%	4.0%

Air New Zealand provides most air transport services to and from the regions in New Zealand. They fly to 24 destinations within New Zealand. The Bay of Plenty accounts for 7% of Air New Zealand's total domestic passengers. Taking into

account the operations of Qantas, Origin Pacific Airways and others, we believe our estimate of 4% for the Bay of Plenty's share of total domestic passengers is accurate.

It is evident, therefore, that the Bay of Plenty does not represent a major part of the domestic air transport system and it is arguable as to whether it is significant in terms of airline operations. Nevertheless there are some routes to and from the Bay of Plenty region that are important to an airline network. (We shall discuss these routes later.)

2.8.3 Air Cargo

Outside of Auckland, Wellington and Christchurch air cargo volumes are low. This has always been the situation.

In the early 1980's domestic air cargo volumes declined by around 3% per annum, mainly as a result of competition from courier and road transport. At this time annual domestic air cargo volumes were in the order of 61,000 tonnes with Auckland, Wellington and Christchurch accounting for 80% of the quantity. Today we estimate annual domestic air cargo volumes to be at least 120,000 tonnes.

In the early 1980's total annual air cargo to and from the Bay of Plenty region was about 2,400 tonnes, less than 1% of total New Zealand quantity. During this time the region was mainly served by Fokker Friendship F27 aircraft, which had a reasonable cargo capacity. The aircraft serving the region today have effectively no air cargo capacity. Today negligible air cargo is carried to and from the Bay of Plenty region.

During the early 1980's total New Zealand international air cargo volumes were in the order of 50,000 tonnes per annum, with 80% being handled by Auckland. Today total international air cargo is 181,000 tonnes per annum and 80% still being handled by Auckland. No international air cargo has or is likely to concern the Bay of Plenty.

2.9 Issues

2.9.1 Air transport links between the Bay of Plenty and Wellington are necessary, those to and from Auckland (highly?) desirable and the link to Christchurch is at least highly desirable and probably necessary for tourism.

2.9.2 The airlines and other aircraft operators that provide commercial air transport services largely determine the demand for airport services and facilities. Attempts to attract airlines and air transport services by the provision of greater or more airport services have simply failed in New Zealand. The point is airlines make the decisions that impact on the aerodrome and airspace sub systems. The requirements for airport services and facilities are a derived demand.

2.9.3 The economic regulatory regime governing the air transport system is "light handed" and mostly aimed at airports.

2.9.4 There are greater economic requirements placed on an airport company than on an airport that is not an airport company. Rotorua airport is managed as an airport company and both Tauranga and Whakatane are managed as entities within their respective district council and administrations.

2.9.5 Rotorua and Tauranga are certificated aerodromes able to serve scheduled air transport operations with aeroplanes of 30 or more passenger seats. Whakatane is a non-certificated aerodrome and is limited to serving aeroplanes with less than 30 passenger seats, like the Beech 1900D, Jetstream 32 and Metroliner III.

2.9.6 As a general comment provincial airports lack credible data on their operations and this makes airport planning less reliable.

2.9.7 Bay of Plenty accounts for about 5% of total New Zealand domestic air transport movements and about 4% of domestic passengers. This is one percent less than it was 15 years ago. Nevertheless over the last 10 years air transport movements at Tauranga have increased at a rate greater than the regional and national average while those for Rotorua and Whakatane have increased at less than these averages.

2.9.8 The Bay of Plenty represents a quite small part of the national (domestic) air transport system. Its part or contribution to this system has declined over the past 15 years. There are some routes to and from the Bay of Plenty region that are of doubtful value or importance to the larger airlines. But there are two or three routes, such as tourism links and the Wellington connection, that are important, however, their contribution to the national air transport system is difficult to assess (within the scope of this study).

2.9.9 General aviation within the Bay of Plenty region represents about 10% of total general aviation in New Zealand. This proportion fell to about 7% in the early 1990s and since then increased back up to 10%, which has been solely attributable to the growth in general aviation at Tauranga. General aviation does not require airport services and facilities but instead relies on those of an aerodrome (see later).

2.10 Conclusions

2.10.1 At an airport level, the lack of what we would consider fundamental information about the performance of the air transport system, suggests that airport planning is not what it should be in the regional context and perhaps, is, also inconsistent at a national level.

2.10.2 The demand for airport infrastructure is a derived demand that relies on the fleet and network plans of the airlines. That is the decisions made by airlines impact on airport facilities and services they need. Unless airports closely monitor trends in aircraft movements and passengers it is likely that they will be unable to fully meet the air transport requirements of the airlines or they could over invest in facilities that are not needed. The consequence of this would at least be of some concern to the efficiency of the regional air

transport system and possibly loss of effectiveness. Airports, however, carry the risk of over investment.

2.10.3 It can be argued that overall the Bay of Plenty region is becoming less significant to the national air transport system but is an important centre for general aviation. If this is not properly planned for then it is possible that general aviation could be of some concern for the requirements of air transport.

The following sections describe the capability and capacity of the three Bay of Plenty airports in terms of the air transport system.

3. Airport Operations

3.1 Management of Airports

The Airports Authority Act 1966 s4(3) states that:[6]

> *Every airport operated or managed by an airport authority must be operated or managed as a commercial undertaking.*

So regardless of whether or not an airport is a 'company' or is an 'authority' it is required by statute to be operated or managed in accordance with sound commercial practice, which is what one would expect of a commercial entity. However, this is not the same as requiring an airport to make a financial profit of some specified amount that for a commercial entity would ordinarily be expressed as a return on capital employed (or similar).

So, in the management and operation of provincial airports there is one critical issue. That issue is whether the owners of the airport intend the airport to be operated as a commercial undertaking (business) for profit, or whether the airport is to be operated as a not-for-profit organisation in support of some wider economic and social objectives. There is a significant difference between these two purposes. But regardless of the purpose, the airport is to be *operated or managed as a commercial undertaking*. In other words sound commercial practice is to be the basis on which an airport authority will manage the activities of the airport.

This brings us to the *raison d'être* or 'reason for being' of the airport through the eyes of the airport owner, regardless of whether the owner is the government or some private entity.

To some extent the *raison d'être* will be resolved by the airport's ownership. But to a large extent the role of the airport in the national air transport system, and, perhaps more importantly, its significance to regional or district transportation and economic development will determine its *raison d'être*.

It can be argued that in many cases district or regional airports would be closed if they were operated to normal commercial criteria. That is, those regional or district airports unable to make a profit and produce a 'commercial' return on investment to its owner(s) would be closed or disposed of. This then raises the question of whether these provincial airports should be closed or whether they should be subsidised from central or local government funds.

The answer to this question has both economic and political dimensions. Economic in the sense that it depends on the airport's importance or potential importance to the economy of the district or region. And, political in the sense of whether there

[6] This was part of the Airport Authorities Amendment Act 1997, which at the same time repealed the 1986 provisions for establishing airport companies (Airport Authorities Amendment Act 1986, s5) requiring that "every airport operated or managed by an airport authority shall be operated or managed as a commercial undertaking."

are district or regional welfare or security (*viz* civil defence) imperatives that support the need for an airport.[7]

Particular strategic and development plans for the districts and regions surrounding an airport will help to decide the *raison d'être* for the airport and so answer the question of whether it be managed and operated as a profit-making organisation, or whether it be a not-for-profit organisation.

3.2 Corporate Objectives

We are perfectly entitled to ask of any organisation three questions:

(i) who does it represent or who does it exist for?
(ii) what it is meant to be doing for them?
(iii) is it actually doing it?

One of the main reasons for failure in any organisation is confusion over its objectives.[8]

The aim of every company is to make a profit. Every company that is formed is formed with the idea of making a profit. Every company that fails, failed because it did not make a profit. Profit is the basic 'reason for being' of every company.[9] Thus establishing corporate objectives for companies is straightforward – namely profit or wealth creation usually expressed as return on capital employed. The corporate objectives, therefore, for an airport company should be no different.

For not-for-profit organisations, profit is not the aim. They may exist for a variety of reasons such as to provide a service to some sector of society (*eg* fire brigade, hospitals, police, libraries, museums, development authorities, etc). Many not-for-profit organisations have significant development and social roles. Many local and central government bodies are not-for-profit organisations. It is not always easy to know whether these not-for-profit organisations have succeeded or failed. This is because not-for-profit organisations often have objectives that are not clear.

Many airport authorities, especially those managing and operating provincial airports have little or no chance of making a 'commercial' return on investment to its owners. Nevertheless these airports can be successfully managed and operated as not-for-profit organisations where their corporate objective would be to support the economic and social development of the region or more specifically:

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[7] The political quandary of responding to public perceptions rather than a scientific analysis of facts and trends will also be present and for airports, public perceptions generally favour their 'own' little airport without consideration to cost.

[8] The other reasons are: muddled policies, an inaccurate assessment of the market and competition and an inability in human relations.

[9] We accept that some owners of provincial airport companies may not have profit as their prime objective.

> To promote a safe, accessible, affordable and reliable air transport system for the benefit of the economic and social development of the people of the [Tauranga and Western Bay of Plenty] [Eastern Bay of Plenty] district or...[Bay of Plenty] region.

The corporate objective is the sole criterion by which the organisation is judged as either a success or failure. So whether an airport authority is an airport company or some other organisation its corporate objective should be clear and people should be able to easily obtain answers to the three questions above.

3.3 Financial Performance

The funding of a business comes from two sources. One source is the funds supplied by the owners (shareholders) plus any retained earnings and the other source is the providers of debt (loans). Each source usually expects to be recompensed by way of a dividend in the case of shareholders, and by interest received by the providers of debt. Because the financial risk of shareholders is usually greater than that of the debt provider, the usual expectation is that the return to shareholders should be greater than the rate of interest paid on loans. This is not always so, if the shareholders' interests are wider than the expectation of a direct financial return.

In the case of provincial airports it can be argued that the expectation of the owners is that the airport, as an integral part of the infrastructure of the region, is essential to the social and commercial activities of the region. Thus direct financial benefit from ownership of the airport is not the prime objective.

However, this is not to infer that the owners of the airport are not entitled to a reasonable financial return provided the main objectives of the owners (whatever they may be) are not compromised. If the volume of the activity, that is number of passengers or aircraft, is not reduced as a result of the owner receiving a reasonable return on funds invested, well and good. If activities are sensitive to the prices charged by the airport, then judgement needs be exercised to ensure the (corporate) objective is not at risk.

Never-the-less, the owners should be aware of the financial benefits or losses involved. Conventional accounting reports do not directly inform the shareholders of the financial costs associated with operating provincial airports. As mentioned above, providers of debt are recompensed through payment of interest. Shareholders, by investing in the airport, forgo the opportunity of investing elsewhere. The difference between the return that would have been received investing elsewhere, from the return received from the airport investment, is a financial loss to the airport shareholders. Usually an investor requires as minimum return, at least the equivalent to what can be earned elsewhere. Owners of provincial airports usually have different objectives from the usual investor. However before an airport owner can truly assess the benefits from ownership, there is a requirement to be aware of the financial costs of ownership.

The concept of *economic value added* (EVA™) is used by some companies in New Zealand to manage their true (economic) profitability and economic performance.[10] EVA™ is simply the net operating profit before interest and after tax (NOPAT) less a charge for the use of the capital employed.

There is no limit to the amount of EVA™ a business can hope to earn. When the EVA™ is zero the return earned by the business equals the weighted average cost of capital and fairly rewards the providers of capital taking into account the risk they bear. If the EVA™ is negative then the providers of capital (*ie* the owners) are not receiving sufficient reward for the risks involved. If EVA™ is positive then the owners receive the benefit of additional return. It has been argued that "to be successful a margin needs to be generated above what shareholders could expect to receive from a portfolio of investments of equal business risk".

Thus EVA™ is considered to be the best method of measuring whether shareholder (owner) value in a business is being maintained. Accordingly we have estimated the EVA™ generated by each of the airports over the past five years. A negative EVA™ will indicate that shareholder value has reduced and a positive value will indicate that shareholder value has increased. This will enable an airport owner to better assess the costs and benefits (and value) of owning an airport.

3.4 Airport Planning

For airports the basic planning framework is an airport master plan. It presents the planner's concept of the future for a specific airport[11]. An airport master plan sets out the research and logic from which the plan was evolved. But it remains only a guide for the development of airport facilities, land use, airport access and environmental issues.

The specific goals of the airport master plan should altogether be to:

- provide for the development of an airport to adequately meet the present and future air transport needs of the region;
- put the airport and air transport into proper perspective relative to the regional and national transportation systems;
- inform public and private aviation interests and the community of the aviation requirements of the region or district;
- provide a mechanism to enable various political, community and commercial interests to participate in airport planning;
- to promote the use of air transport in the economic development of the region in line with any policy goals;
- establish priorities for airport financing, and
- identify and outline any problems that may affect the operation of the airport.

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[10] EVA™ was developed by *Stern Stewart & Co* of New York, USA. The concept is being used in New Zealand by Airways Corporation of New Zealand Limited and other companies.

[11] In this sense, when we refer to the airport authority or airport company as the 'planner', we do not mean a person such as an airport planner, town planner, environmental planner or the like but rather the airport itself.

Few airport master plans in New Zealand, in our view, deal with all these issues and so are quite unsatisfactory. This observation is particularly applicable to the so-called provincial airports, which at best have a civil engineering and land use dimension and ignore the fundamental economic requirements of the air transport system and are devoid of any comprehensive financial requirements. In our opinion this accounts for most of the over-investment in provincial airports. The point is, analysis and planning comes before design, and design is way ahead of construction. This is a process not always followed in airport planning in New Zealand.

This highlights one of the main problems with airport master planning. It is the inability of planners to comprehensively determine and present the basic facts and principles underlying airports and air transportation. This can be because matters of strategic significance have been ignored for one reason or another. Such as a limited planning scope confined to a business planning level based on a fixed operating strategy or because of some unrelated political imperative. An airport needs to be considered as a node or one point in the national air transport system, which in turn is part of the total transport system. Airports cannot be considered in isolation. (See also section 2.3)

Rotorua, Tauranga and Whakatane do not possess what we would consider to be a proper airport master plan incorporating the appropriate economic, physical, environmental and financial requirements and development options.

3.5 An Aerodrome or an Airport

An aerodrome and airport have similar definitions in the statutes. But there is a difference in practice.

The Civil Aviation Act 1990 does not define 'airport' but states that 'aerodrome':

> *(a) Means any defined area of land or water intended or designed to be used either wholly or partly for the landing, departure and surface movement of aircraft; and*
>
> *(b) Includes any buildings, installations, and equipment on or adjacent to any such area used in connection with the aerodrome or its administration.*

This definition is borrowed from Annex 14 to the Convention on International Civil Aviation (Chicago Convention) which deals with aerodromes.

The Airport Authority Act 1966 defines 'airport' as:

> *any defined area of land or water intended or designed to be used either wholly or partly for the landing, departure, movement or servicing of aircraft; and includes any other area declared by the Minister* [of Transport] *to be part of the airport; and also includes any buildings, installations, and equipment on or adjacent to any such area used in connection with the airport or its administration.*

The Airport Authority Act definition is borrowed from the Civil Aviation Act 1964 (the old Act) by substituting the word 'airport' for 'aerodrome' and adding a ministerially declared area.

Annex 14 to the Chicago Convention does not define 'airport'. Annex 14 sets standards for safety in the design and operation of aerodromes for international air transport. These standards are transposed into NZCAR 139 for the certification, operation and use of aerodromes for both domestic and international air transport.

The term 'airport' is, however, used and defined by the International Civil Aviation Organisation (ICAO) a United Nations associated body established by Chicago Convention. It is used in connection with the economic regulation of air transport. In this sense an airport can be a *domestic, regional, international* or *gateway* airport and may be characterised by type of activity: *commercial* or *private*. In an economic regulatory sense it is recognised that the terms airport and aerodrome are almost synonymous but the latter is used more in a generic sense.

We distinguish between an airport and an aerodrome. They are both defined areas of land (or water) used for the arrival, departure and surface movement of aeroplanes. An airport will include buildings, installations and equipment on or adjacent to any such area that facilitates the take-off and landing of air transport aeroplanes, the embarking and disembarking of passengers and also the loading and unloading of cargo. An aerodrome may include an airport and other areas that facilitate the operation of aircraft other than air transport aircraft. Thus an aerodrome will cater for all types of aeroplanes (including gliders, microlights, etc), helicopters and lighter-than-air craft. So an aerodrome may include a heliport. Of course, where an aerodrome includes an airport there will be a number of common areas, buildings, installations and equipment. These distinctions become important for airport charges and planning purposes.

Thus an airport may be, and usually is, seen as providing for air transport services. Whereas an aerodrome may provide for general aviation services as well as air transport services or just provide for general aviation services.

We believe the Airport Authorities Act 1966 was enacted to primarily facilitate air transport services. It was designed to consolidate and amend the Local Authorities Empowering (Aviation Encouragement) Act 1929, which dealt with all types of aviation.

With this in mind therefore the Rotorua, Tauranga and Whakatane airport authorities manage and operate an aerodrome that caters for a variety of general aviation activities and, within the aerodrome, an airport that caters for both air transport services as well as some types of general aviation activities. The Opotiki District Council, however, manage and operate an aerodrome.

From a practical point of view air transport operations are confined to an airport whereas general aviation operations use the facilities and services of an aerodrome that may wish to include those of an airport. Put another way airlines are concerned with airports while general aviation are interested in aerodromes. We are concerned in this study with both the airport and aerodrome.

3.6 Central North Island Airports

Within the central North Island there are two airports in the Waikato region and three airports within the Bay of Plenty region that currently serve scheduled domestic air transport operations. Hamilton airport serves both international and domestic scheduled air transport services and is within 100 km of Rotorua and Tauranga and 150 km of Taupo (Rotorua is within 90 km of Taupo). *Table 8* outlines the use of airports within the Waikato and Bay of Plenty regions.

Table 8: **Air Transport Density 2001**
(including international)

District or Region	*Air Transport Movement (ATM)*	*Total Aircraft Movements*	*Population*	*Population per ATM*
Rotorua	12,000	29,000	69,000	5.8
Tauranga	11,300	73,800	130,000	11.5
Whakatane	3,300	5,200	34,300	10.4
BOP Region	26,600	108,000	251,000	9.4
Hamilton	13,300	52,700	119,500	9.0
Taupo	3,800	40,600	32,500	8.6
Waikato Region	17,300	93,200	369,800	21.5
Auckland	138,300	147,500	1,216,900	8.8
Wellington	105,500	123,200	440,200	4.2
Christchurch	79,800	150,200	496,700	6.2
Queenstown	22,300	53,200	17,850	0.8
New Zealand	542,500	1,342,000	3,880,500	7.2

A measure of the density of air services to a district or region is the population per air transport movement. The mean air transport density for New Zealand is 7.2 and so overall the Bay of Plenty region has lower density than the national average.
Rotorua is largely a tourist destination and enjoys a relatively high number of air transport services with one air transport movement for every 5 to 6 persons in the district. This compares to one movement for every 10 or 12 persons for Tauranga and Whakatane, one movement for every 8 or 9 persons for Taupo and Hamilton.

Auckland's air service density is one air transport movement for every 9 persons in the region. Queenstown has more than one per person. Queenstown's situation is representative of an international tourist destination. In contrast Wellington and Christchurch have relatively high air transport densities; Wellington because of the high frequency of domestic services and Christchurch because it is a tourist gateway to the South Island.

3.7 Economic Impact

Aerodromes and airports provide a number of benefits to the community they serve, which are to do with the role and function of an aerodrome within the air transport system. These public benefits include:

- access to the air transport system, which in turn provides for
- high levels of transportation safety,
- comfort of air travel,
- time saved by air transportation, and in some cases
- reduced airport access transportation costs.[12]

These public benefits are generally referred to as transportation benefits.

There are other benefits associated with an aerodrome that are not strictly transportation benefits. These include:

- contributions to education through flying training and aeronautical engineering training facilities;
- a contribution to civil defence, and in some instances national defence;
- the recreational and sporting activities associated with general aviation;
- the development of commerce, where the presence of an airport and its air transport services may be important considerations in siting commercial or industrial facilities; and
- the general commercial activity associated with aviation such as air cargo, warehousing, aviation insurance brokers, etc.

Most of these activities or benefits are difficult to quantify in money terms. But the point is they all arise around one specific airport or aerodrome, unless there are two aerodromes side-by-side or geographically close to each other like Auckland and Ardmore.

3.7.1 Economic Impact of an Aerodrome

Outside of the transportation benefits the economic impact of an aerodrome is a measure of the goods and services it consumes in the process of carrying out its primary (transportation) role and function. This economic impact has three dimensions:

- *Direct economic impact,* which is an immediate consequence of all airport activity and includes: airlines, the airport company, airport tenants, general aviation and others employing people, purchasing or contracting out *local*

[12] This is the additional ground travel involved in access to an alternative airport in the event the local airport was not available or did not exist. For example having to drive to Paraparaumu instead of Rongatai.

goods and services. It represents economic activity that would not have occurred in the absence of an airport or aerodrome.

- *Indirect economic impact,* which is a consequence of off-airport economic activity and includes: hotels, travel agencies, restaurants, taxis, etc, employing people, purchasing *local* goods and services, investing in improvements and expansion. It differs from direct economic impact in that they originate entirely off airport, but this indirect economic impact also represents economic activity that would not have occurred in the absence of an airport or aerodrome.

- *Induced economic impact,* which is the multiplier effect of the direct and indirect impacts and represents the increases in employment and incomes created by successive rounds of spending.[13] Some of the induced impact (spending) will be *local* and some will be outside the region. Thus, as far as the economic impact of an aerodrome is concerned the specific multiplier should only take *local* or regional spending into account.[14]

It will be evident that it is very important to distinguish between economic activities that would not have occurred in the absence of an airport and those activities that occur directly as a result of the airport.

This is especially important in assessing visitor expenditure, for example. Here, it is necessary to distinguish between tourists and other visitors who would not have travelled to the region if there were no airport and those who would travel anyway by some other route or form of transportation. Clearly, only the former are relevant in any estimation of indirect economic impact. And because it is always difficult or unfeasible to make this distinction, the impact of visitor expenditure is usually overstated, especially where regions are easily accessible by road, rail, sea or even by other (domestic) air links. This applies to all provincial airports in New Zealand.

3.7.2 Regional Economic Impact

Measuring the regional (and national) economic significance of aerodromes or airports is a fairly detailed, laborious and in some cases complex process. The economic impact of an airport is an important ingredient of airport master planning as it helps to explain the likely consequences of various planning alternatives and initiatives. Usually it is only the larger airports that bother with economic impact studies. But because of the laborious and usually complex nature of economic

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[13] Most of the income earned by airport employees is spent locally, some of this is income to people who provide services to airport employees, some goes to local business. In turn some of these second-round incomes are also spent locally. In this way successive rounds of spending creates additional income, which altogether account for the induced economic impact.

[14] Regions that are more economically self-sufficient have higher multipliers than other regions. And the multiplier for a country is, naturally, higher than that for a region. Population is a reasonable indication or proxy for the degree of self sufficiency and in line with a series of studies carried out in the US by Wilbur Smith Associates, the FAA recommend the following regional multipliers:

Population	*Multiplier*
less than 100,000	0.5
100,000 to 500,000	0.6
500,000 to 3 million	0.75
greater than 3 million	1.0

impact studies they are often not carried out, even by the larger airports. By world standards New Zealand has only one airport, Auckland, that could be called large with Wellington and Christchurch both medium-sized.[15] (Auckland and Wellington have carried out such studies some five or more years ago.)

Using the guidelines or rules-of-thumb for estimating the regional economic impact of airports developed by the US Federal Aviation Authority (FAA) we have assessed the regional economic impact of the Rotorua, Tauranga and Whakatane.[16] *Table 9* summarises the results. We have included Auckland, Christchurch, Hamilton and Queenstown to provide some comparison.

The value of the total direct impact, including induced income, is reasonably straightforward. The value of the indirect economic impact perhaps requires some explanation.

Table 9: **Economic Impact of Airports**
(based on 2001 operating year)

	Units	*AKL*	*HLZ*	*TRG*	*ROT*	*WHK*	*CHC*	*ZQN*
Regional population (POP)	000's	1,217	370	130	118	45	497	20
Arriving passengers (AP)	000's	4,212	182	57	120	14	2,042	217
Direct Impact								
Estimated employment		8,220	118	84	74	9	1,328	141
Payroll per employee	$/year	60,000	35,000	35,000	35,000	30,000	45,000	40,000
Total payroll	$M/year	493.2	4.1	2.7	2.0	0.3	59.8	5.6
Regional multiplier		0.75	0.6	0.6	0.6	0.5	0.75	0.5
Induced income	$M/year	369.9	2.5	1.6	1.2	0.1	44.8	2.8
Total direct impact	$M/year	863.1	6.6	4.3	3.1	0.4	104.6	8.5
Indirect Impact								
AP/POP		3.5	0.5	0.4	1.0	0.3	4.1	10.9
Expenditure per visitor	$/pax	509	304	300	352	293	520	870
Visitors	%	50%	10%	25%	55%	10%	60%	90%
Indirect impact	$M/year	1,072.3	5.5	4.3	23.2	0.4	636.7	169.8
Induced income	$M/year	804.2	3.3	2.6	13.9	0.2	477.5	84.9
Total indirect impact	$M/year	1,876.5	8.8	6.8	37.2	0.6	1,114.2	254.7
Economic Impact								
Direct impact	$M/year	493.2	4.1	2.7	2.0	0.3	59.8	5.6
Indirect impact	$M/year	1,072.3	5.5	4.3	23.2	0.4	636.7	169,8
Induced impact	$M/year	1,174.1	5.8	4.2	15.1	0.3	522.3	87.7
Total economic impact	$M/year	2,739.6	15.5	11.1	40.3	1.0	1,218.8	263.2

The number of arriving passengers divided by the regional population served by the airport (AP/POP) is an indication of the extent to which the region attracts visitors, both on business and on pleasure (*ie* tourists, visiting friends and relatives, sport and recreation). If AP/POP is less than one then the indirect economic impact will be

[15] In 2000 Auckland with about 8 million passenger arrivals and departures ranks 115 in the world, on passenger numbers. The top ranking airport is Atlanta with about 80.2 million passengers (arrivals and departures); the 100th is presently Malaga, Spain, with 9.4 million passengers and the 150th ranked is Hanover-Langehagen with 5.5 million passengers. Christchurch had about 4.0 million passengers and Wellington about 3.5 million passengers in 2000.

[16] *Estimating the Regional Economic Significance of Airports,* DOT/FAA/PP-92-6, September 1992.

negligible and according to the FAA guidelines can be ignored – this is the case for Tauranga, Whakatane and Hamilton.

Expenditure per visitor is an estimate of the region's value-added expenditure of bona fide visitors; that is the value of goods and services produced locally. We have adopted the figures used in the US. [17] However, we have estimated visitor expenditures for Tauranga, Whakatane and Hamilton and included this in the indirect impact – if anything we will have overstated the expenditure for these areas.

The arriving passenger numbers (AP) include local residents returning home and bona fide visitors. The arriving passenger numbers therefore need to be adjusted to arrive at an estimate for the number of bona fide visitors. We have assumed these visitors account for 90% of the arriving passengers for Queenstown, 50% for Auckland, 60% for Christchurch, 55% for Rotorua, 25% for Tauranga and 10% for Hamilton and Whakatane.[18] These factors may be overstated in some cases.

It can be seen that for Auckland, Christchurch and Queenstown the regional economic impact of the aerodrome or airport is considerable.[19] For Rotorua the regional economic impact is in the order of $40 million per year. For Tauranga the regional economic impact is about $11 million per year, while for Whakatane the economic impact is about $1 million per year.

By contrast the economic impact of the Port of Tauranga on the Bay of Plenty region is in the order of $1,500 million per year, with a further $1,800 million per year from the port attributed to the rest of New Zealand.[20]

3.8 Airport Capacity

The maximum number of flights or movements (take offs or landings) that can be routinely handled in one hour determines the capacity of an aerodrome or airport. This number will vary with the prevailing weather conditions, the runway and taxiway configurations (*ie* aerodrome design) and the mix of aircraft types operating into and out of the aerodrome or airport. When determining this number it is assumed that there are no constraints on the air transport system from en route or terminal air traffic management.

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[17] Derived by *Wilbur Smith & Associates* and the FAA. We have adjusted for the purchasing power parity by applying the Big Mac index increasing the US$ expenditure by 59% (*viz* Big Mac costs US$2.49 and NZ$3.95 locally).

[18] The FAA suggest a factor of 0.6 to 0.7 for visitor dominated regions and 0.3 for airports primarily used by local residents.

[19] Auckland International Airport Limited, claim in their 2001 Annual Report that Auckland airport "generates and facilitates $6.9 billion worth of value added" and sustain 112,980 full-time jobs. This compares to the $2.7 billion indicated in *Table 9.* There can be a tendency to use very broad criteria when assessing economic impact; and this is likely to be the case in Auckland's assessment.

[20] Port of Tauranga Limited 2002 Annual Report notes the economic impact of the port on the regional and national economy. The economic impact assessments are based on a 1998 study by Waikato University. The scope of the economic impact of airports in *Table 9* appears to be similar to that used in the Waikato University study.

It is usual to determine two capacity rates:

- *Optimum rate,* which is the maximum number of aircraft that can be routinely handled using visual approaches during periods of unlimited ceiling (cloud base) and visibility; and a

- *Reduced rate,* which is the maximum number of aircraft that can be routinely handled during reduced visibility conditions when radar is required to provide separation between aircraft for the most commonly used runways.

Typically the optimum capacity for an airport like Auckland, Wellington and Christchurch, with a single main runway, in the order of 35 to 45 movements per hour. The reduced capacity or rate could be 30% less or more.[21]

Rotorua, Tauranga and Whakatane have one runway and no taxiways. The optimum capacity for these aerodromes will therefore be in the order of 15 movements (take offs or landings per hour). The reduced capacity could be the same as the optimum capacity depending on the local air traffic control procedures.

In determining airport capacity at Rotorua, Tauranga and Whakatane we chose to analyse movements during the month with the maximum number of aircraft movements. Over the last five years for each airport this happened to be March 2001; when the monthly movements were:

Rotorua	3,372
Tauranga	9,062
Whakatane	292

Movements were then analysed into the following categories:

- ✈ take offs (departures) for:
  - air transport aircraft
  - aircraft under visual flight rules (mostly general aviation)

- ✈ landings (arrivals) for:
  - air transport aircraft
  - aircraft under visual flight rules (mostly general aviation)

- ✈ aircraft carrying out 'circuits and bumps' or flight training (general aviation).

All air transport movements will use the runway but aircraft under visual flight rules (general aviation) may not use the runway and use a grass airstrip adjacent to the runway. It has not been possible to differentiate between all those aircraft using the runway and a grass airstrip.

For Tauranga and Rotorua air transport aircraft have priority of use for the runway. They do at Whakatane too but air transport effectively have the airport to themselves.

[21] For Auckland the optimum rate is currently 38 movements per hour with a reduced rate of 35 movements per hour. Wellington has an optimum rate of 42 movements per hour and a reduced rate of about 30 movements per hour.

In analysing airport capacity we have been able to determine hourly aircraft movement rates as well as the daily movements for each category of movement. This has been determined for each of Rotorua, Tauranga and Whakatane.

3.9 Issues

3.9.1 Airports are required to be operated and managed as a commercial undertaking. But this does not mean that they are required to be operated for profit. Airports can be operated as not-for-profit organisations. Thus an airport can either be managed as a business for profit or as a not-for-profit organisation.

3.9.2 The *raison d'être* and corporate objectives for an airport need to be agreed and understood by the owners of the airport. As a general comment there is a tendency amongst some provincial airport managers and their boards to attempt to manage and operate their airports as businesses for profit but with no chance of this being achieved. This tendency has existed in the Bay of Plenty.

3.9.3 Proper airport planning is important if the role and function of an airport in promoting the economic development of a region is to be effective and also its contribution to the national air transport system. This requires, amongst other things, the development of an airport master-plan, which requires reliable data. Such planning has been absent in the past.

3.9.4 The economic impact of the three airports in the Bay of Plenty region is in the order of $52 million per year, 77% of this is attributable to Rotorua airport. This compares with the $1.5 billion per year impact the Port of Tauranga has on the region. It will be seen that there is a loss in the economic value added (EVA™) for the three airports of about $6.2 million over the last five years of which almost 90% is attributable to Tauranga. The economic impact of the airports needs to be measured against this loss in EVA™.

3.10 Conclusions

3.10.1 The three airports in the Bay of Plenty region need to clarify their *raison d'être* and in turn review, with advantage, their corporate objectives. Unless this is done it is likely that the airports and the air transport system could suffer somewhat more than merely a loss of efficiency and effectiveness.

3.10.2 The economic impact of the airports outside of the transportation benefits is in the order of $52 million, which when reduced by the loss in EVA from their financial operation suggests that the overall economic impact is currently about $50 million per year.

4. Tauranga Airport

4.1 Airport Ownership

The Tauranga District Council (TDC) wholly owns Tauranga airport and aerodrome. Between 1961 and 1998 the airport was operated as a joint venture airport between the TDC (35.25%), Western Bay of Plenty District Council (WBOPDC) (14.75%) and the Crown (50%). In May 1998 the TDC purchased the Crown's share in the airport. The accounts for the 10 months ending 30 April 1998 note that it was agreed to pay the Crown $800,603 in two years for the Crown's share.[22] According to the Ministry of Transport the TDC acquired (in trust) airport land owned by the Crown for $0.8 million and purchased the Crown's share of the 'airport business' for one dollar.[23] WBOPDC's investment in the airport is recognised in an agreement between the two district councils and is reflected in the balance sheet.

4.2 Airport Land

The aerodrome occupies 225 hectares (ha) of land which is owned as follows:

TDC	120.65 ha
Joint: TDC, WBOPDC, Crown	85.95 ha
Crown	18.85 ha

The Crown land and the jointly acquired land are vested in trust to the TDC for airport and aviation purposes. The airport is mostly located on land owned by the TDC, the runway extension is on land jointly owned and the Crown land is mostly leased for (non aviation) commercial purposes. The Tauranga Airport Committee (TAC) have decided that the land not required for operational aviation purposes be developed as commercial, industrial and other uses, with particular emphasis on aeronautical related services. In 1967 a sealed runway of 1,280m was constructed and in 1998 this was extended to the east to provide 1825m.

4.3 Airport Management

Tauranga Airport is managed by the TAC. The TAC is a business unit within the TDC and is governed by a Board consisting of five members, two are district councillors and three are independent of the TDC. The airport manager reports to the TDC's group manager finance and business services. A further person is employed by the

[22] These accounts also showed that at that time the Crown's capital account stood at $613,822, their current account $391,524 and underpayments to the Crown amounted to $3,113; altogether $1,008,464. We have not had the benefit of full financial information concerning Tauranga airport and so the exact details of the sale and purchase are not clear.

[23] The Treasury website (www.treasury.govt.nz/assetsales) records that the Crown sold its share in Tauranga Airport for $1,060.603.

TDC for airport purposes. In terms of the Airport Authorities Act, TDC is the airport authority.

4.4 Corporate Objectives

The Tauranga Airport Strategic Plan 2000-2002 dated November 1999 states:

> *That the principle purpose of owning the Airport be to provide an Airport runway system and associated services to meet the needs of aircraft operators, the air travel needs of the Community and to provide land for businesses on a commercial basis with a preference for aeronautical related operations.*

The financial objectives are "to make a profit across the total business". The level of profit being indicated in the annual business plan, which is to increase total revenue by 20%. It is also the objective of the TAC for airport operations to be self funding, that is independent of rate payer (public) funding.

4.5 Capability

Tauranga airport has a 1,825m runway with a width of 45m and meets Civil Aviation Authority (CAA) requirements and standards. The TAA as operator (as distinct from the TAC) is certified under NZCAR Part 139. Air traffic services (ATS) are provided by Airways Corporation of New Zealand Ltd (ACNZ) and are available during scheduled air transport operations for aircraft with a minimum MCTOW of 5,200kg,[24] that is for aircraft like the EMB110 Bandeirante with 15 passenger seats and upwards.

Air transport operations and flights conducted under instrument flight rules (IFR) into and out of Tauranga are supported by ground based navigation aids (*ie* NDB and DME) and prescribed instrument departure procedures.[25]

Presently four aircraft types use Tauranga on domestic air transport operations.

- Beech 1900D (MCTOW 7,765kg, 19 seats)
- Metroliner III (MCTOW 6,577 kg, 19 seats)
- Saab 340A (MCTOW 12,700 kg, 33 seats)
- BAe Jetstream 31 and 32 (MCTOW 5,700 kg, 19 seats)

None of these aircraft have any payload or operational limitations operating into or out of Tauranga.

The ATR 72-500 (66 seats) currently operated by Air New Zealand would also be unrestricted operating into or out of Tauranga.

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[24] MCTOW = maximum certified take off weight.

[25] NDB = non-direction beacon and DME = distance measuring equipment. Air transport operations are generally conducted under IFR.

A B737-300 (132 seats), of the type currently operated by Air New Zealand, on domestic air transport operations would effectively not have payload limitations operating into or out of Tauranga. However, for trans Tasman air transport operations there would be about a 2.6 tonne (26 passengers) payload restriction during winter and about a 2.7 tonne (27 passenger) payload restriction during the summer months. This alone would make scheduled trans Tasman services through Tauranga unlikely with this type of aircraft.

The Airbus A320 (about 150 seats) has been ordered by Air New Zealand for domestic and regional (trans Tasman and South Pacific) services. The A320 would have a payload restriction of between 1.7 and 6 tonnes (17 to 60 passengers), depending on the temperature and wind conditions, if it were to operate domestic services through Tauranga, which suggests that it is unlikely to be used for Tauranga.

Overall, however, the aerodrome facilities at Tauranga are ample to support domestic air transport operations for the aircraft presently serving Tauranga. The obstacle limitation surface (OLS) should meet the requirements for an aerodrome reference code (ARC) number 3C (for the Saab 340). It has facilities to match ARC code 4D that would support B767, A310, B737 aeroplanes.

4.6 Aerodrome Restrictions

Two obstacles protrude through the horizontal surface of the OLS; Mt Maunganui and the cranes at Sulphur Point. The two Panamax cranes are 89m (292ft) AMSL and penetrate the horizontal surface by 40m (132ft). Presently the Panamax cranes can travel on rails the length of the wharf which is between 708m and 1,370m at right angles to the extended centre-line of runway 07/25. The Leibherr crane is also sited at Sulphur Point and at 74m (243ft) above mean sea level (AMSL) penetrates the horizontal surface by 25m (82ft). As an obstacle the two Panamax cranes effectively shield this crane.

In 1990 the then Air Transport Division of the Ministry of Transport gave tacit approval for the port company to erect a 'wall' 89m AMSL along the length of the existing Sulphur Point wharf to a point 780m from the extended centre-line of runway 07/25. This point is some 415m from the top of the transitional side surfaces of the approach OLS for runway 07.

The Bay of Plenty regional costal plan included plans to extend Sulphur Point wharf 385m to the south to a point 395m from the extended centre-line of runway 07/25 and to operate Panamax cranes over this extension to the south. The cranes would therefore continue to penetrate the horizontal surface to a point about 40m short of the transitional side surfaces of the OLS.

The non-precision NDB/DME approaches and instrument departures for Tauranga aerodrome were introduced in 1994. The cranes at Sulphur Point had a direct impact on the designs for these instrument procedures as well as the location of the NDB/DME equipment. Panamax cranes at the southern extremity of the proposed Sulphur Point extension do not infringe the obstacle protection surface (OPS) for visual approaches using precision approach path indicators (PAPI).

The cranes have an impact on non precision approaches in two circumstances:

- during the *visual approach* for an NDB/DME approach for runway 07, and
- during *the missed approach* for an NDB/DME or NDB approach on runway 25.

Runway 07: the cranes currently penetrate the obstacle assessment surface (OAS) for this visual segment of an NDB approach on runway 07. The penetration occurs over about 110m of the southern part of the existing Sulphur Point wharf and so occurs over the whole of the proposed southern extension.

Runway 25: the cranes are in the level segment of a missed approach using NDB/DME on runway 25 and so determine the minimum decision altitude (and so height the aircraft can descend to before the pilot must make a decision either to continue or to initiate a missed approach).

An instrument departure on runway 25 would be affected by cranes operating along the full length of the wharf extension to the south. About 110m of the southern extension falls within the obstacle identification surface (OIS) for instrument departures. If cranes operated over this part of the extension there could be no instrument departures from runway 25.

What this means is that Sulphur Point could be extended 270m to the south without significantly effecting air transport operations into and out of Tauranga aerodrome. At the present time this situation is recognised by the TDC as the relevant planning authority, the TAA as the owner and operator of the aerodrome (and airport) and the Port of Tauranga Limited as the owner and operator of the seaport. We gather that future extensions south will be the subject of 'limited discretionary' clearance.

The prevailing wind at Tauranga is west and south-west except during summer when north and north-east winds mostly dominate. Fog occurs about 16 days each year and occasionally restricts morning flying operations. Otherwise Tauranga is not inhibited by weather considerations.

4.7 Airport Operations

Diagram 1 illustrates the trend in aircraft movements for domestic air transport and for general aviation plus military aviation. It is evident that since 1997 air transport movements have been relatively static at about 11,000 to 12,000 per year. General aviation activity[26], as measured by aircraft movements (as we have already seen), increased sharply in 1997 and 1998 to a peak of about 65,700 movements.

4.7.1 Air Transport

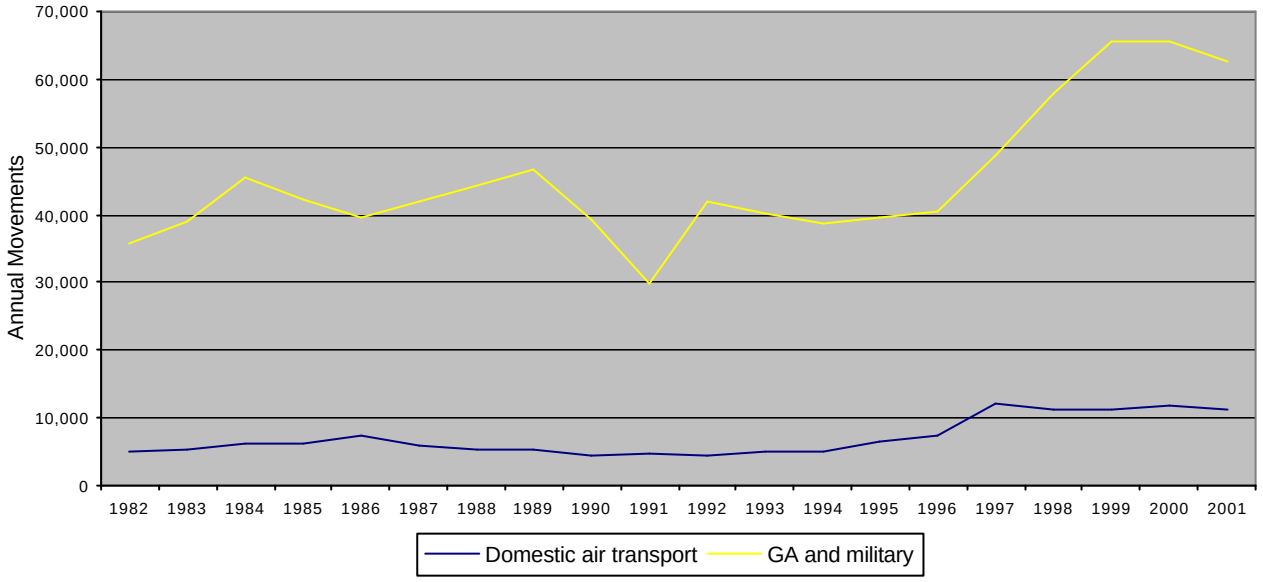
Air transport services have been operated through Tauranga since 1946. Fokker F27 Friendship services were introduced in 1967 and remained in service until 1991. In the last years of the 48 seat F27-5100 services, daily services were flown to Auckland, Gisborne, Rotorua[27] and Wellington. In April 1989 the EMB110

[26] Including military aviation which averaged less than 400 over the last six years.

[27] Except Saturday and Sunday.

Bandeirante (15 seats) replaced the F27 on the Auckland sector and Gisborne services were dropped. In May 1991 the Metroliner III (19 seats) and Saab 340A (33 seats) replaced the F27 on the Wellington sector. Rotorua services were terminated in 1990. For a short period in 1990-91 there was a Bandeirante service to Hamilton. All these services were operated by Air New Zealand.

Diagram 1: **Tauranga Aircraft Movements 1982 - 2001**



In 1999 Origin Pacific Airways began a service into Tauranga with 19 seat BAe Jetstream 31 and 32 aircraft. This service now operates to Hamilton to connect to other destinations.

Air New Zealand are the main operator of scheduled air transport services through Tauranga. These are to and from Auckland and Wellington. Scheduled services are also operated by Sun Air, a Tauranga based operator to and from Whangarei, Hamilton, Gisborne and Napier. These services are flown in a variety of aircraft (*ie* PA31 Navajo (6 or 8 seats) PA23 Aztec (6 seats), Partenavia P68 (6 or 8 seats). Non-scheduled air transport services are also operated through Tauranga, mainly connecting Auckland and Motitiu Island – the latter by Island Air with Cessna 206s (6 seats) or Cessna 172 (4 seats).

In 2001 there were about 117,400 passenger arrivals and departures through Tauranga. About 45,700 were to and from Auckland (39%) and 60,300 were to and from Wellington (51%) and about 11,400 were to and from other locations. Wellington is now the main air transport market for Tauranga. *Table 10* provides a summary of air transport routes and passenger numbers.

It is evident from *Table 10* that:

- growth in passenger numbers to and from Auckland has slowed to less than half the growth in the district population – flights per person per annum (fpppa) is about 0.36;

- growth in passenger numbers to and from Wellington has averaged about 14% over the last six years and has increased by 50% since 1999 – flights per person per annum to and from Wellington are 0.46;

- passenger numbers to and from other locations fluctuate from year to year and have averaged about 11,700 per year – at 0.09 flights per person per annum;

- Overall there is almost one (0.90) flight per person per annum within the Tauranga and Western Bay of Plenty districts. This is about one-third of the frequency of air travel for New Zealand as a whole.

The Auckland sector is mostly a business and 'visiting friends and relatives' (confusingly referred to as VFR) market and so travellers are requiring point-to-point travel. This is seen as a 'difficult' market by the airlines, meaning growth is static or declining and so yields (revenue per passenger km) are low. The Tauranga-Auckland link is consequently not seen as being important to an airline's overall network.

The Wellington sector is also mostly business travel and is seen by the airlines as one of the more promising provincial sectors in the domestic air transport system.

In the 1980s Tauranga handled about 190 tonnes of air cargo a year; virtually no air cargo is now loaded or unloaded at Tauranga.

4.7.2 General Aviation

General aviation plays a significant part in the activities of Tauranga aerodrome. While these activities will be independent of the airport terminal facilities they do account for 85% of the air movements.

The main general aviation operators are the Tauranga Aero Club, Bay of Plenty Flight Centre, Tauranga Tandem Skydive, Super Air (aerial work) and the Tauranga Gliding Club. Oceania Helicopters are also based at Tauranga aerodrome but are excluded from the aircraft movement data (they do about 400 movements per year). Altogether Tauranga caters for 77 aircraft, from microlights and gliders to a Fletcher topdressing aeroplane and Harvard Warbirds.

Tauranga is the third busiest general aviation aerodrome in New Zealand, behind Ardmore and Christchurch. The next busiest aerodromes are Hamilton and Taupo, some 24,000 movements per year less than Tauranga. A significant number of general aviation movements are flying training, which involve 'touch-and-goes' (this will be evident in section 4.8 Airport Capacity).

Table 10: **Tauranga Route Analysis**
Passenger Arrivals & Departures

	1996	*1997*	*1998*	*1999*	*2000*	*2001*
Population						
Tauranga District Council	79,200	82,200	85,000	87,100	88,900	90,000
Western BoP District Council	35,700	36,700	37,700	38,600	39,400	39,900
Total	114,900	118,900	122,700	125,700	128,300	129,900
Annual growth		3.5%	3.2%	2.4%	2.1%	1.2%
5 year AAI					2.8%	2.2%
Auckland						
Arrivals & departures	43,000	42,100	43,300	45,200	47,800	45,700
Annual growth		-2.1%	2.9%	4.4%	5.8%	-4.4%
5 year AAI					2.7%	2.1%
6 year AAI						1.2%
fpppa	0.37	0.35	0.35	0.36	0.37	0.35
6 year fpppa						0.36
Wellington						
Arrivals & departures	31,000	31,000	32,400	40,300	46,900	60,300
Annual growth		0.0%	4.5%	24.4%	16.4%	28.6%
5 year AAI					10.9%	18.1%
6 year AAI						14.2%
fpppa	0.27	0.26	0.26	0.32	0.37	0.46
6 year fpppa						0.33
Other						
Arrivals & departures	6,000	16,800	14,200	12,200	9,400	11,400
Annual growth		180.0%	-15.5%	-14.1%	-23.0%	21.3%
5 year AAI					11.9%	-9.2%
6 year AAI						13.7%
fpppa	0.05	0.14	0.12	0.10	0.07	0.09
6 year fpppa						0.09
Total All						
Arrivals & departures	80,000	89,900	89,900	97,700	104,100	117,400
Annual growth		12.4%	0.0%	8.7%	6.6%	12.8%
5 year AAI					6.8%	6.9%
6 year AAI						8.0%
fpppa	0.70	0.76	0.73	0.78	0.81	0.90
6 year fpppa						0.78
Auckland market	54%	47%	48%	46%	46%	39%
Wellington market	39%	34%	36%	41%	45%	51%
Other markets	8%	19%	16%	12%	9%	10%
Total All	100%	100%	100%	100%	100%	100%

4.8 Airport Capacity

The optimum airport capacity for Tauranga is estimated to be 15 take offs or landings per hour. The reduced capacity is the same.

Diagram 2 illustrates the hourly movements at Tauranga. It is evident that, allowing for 'touch and goes' there is plenty of available capacity.

Air transport movements at Tauranga currently do not exceed four per hour. General aviation (conducted under visual flight rules – VFR) currently do not exceed six movements per house. So together there are less than 10 aircraft movements per hour. However there can be up to 22 'circuits and bumps' per hour, which is flying training. Typically these are in the order of 7 to 9 'touch-and-goes' per hour.

Diagram 2: **Tauranga Hourly Movements**

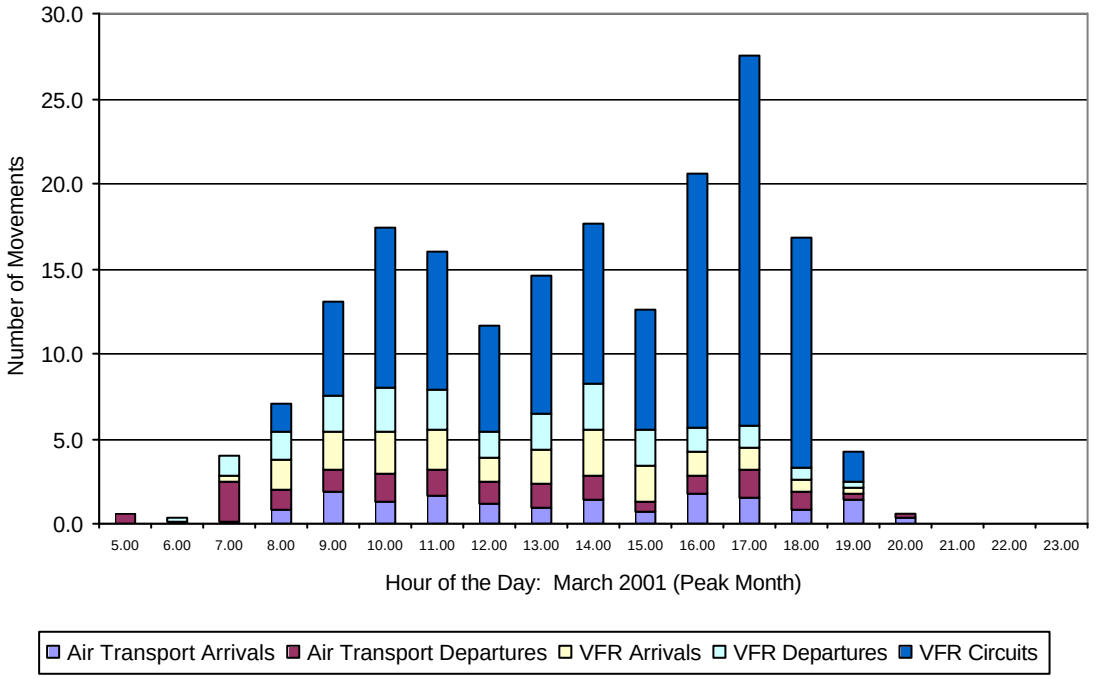


Diagram 3 illustrates the number of daily arrivals and departures for air transport movements. This does not exceed 26 arrivals and departures. There are usually less than 20 arrivals and 24 departures per day.

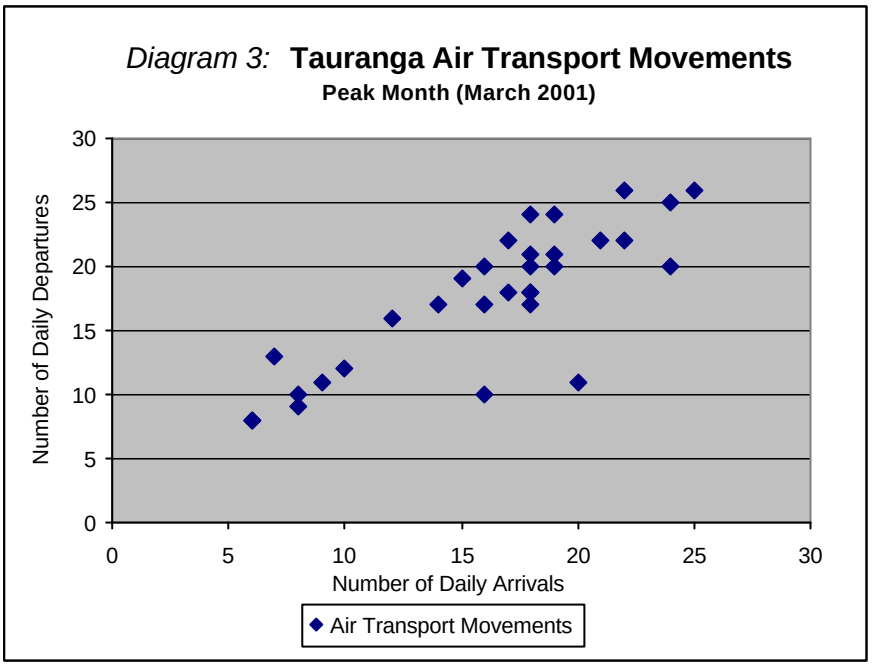
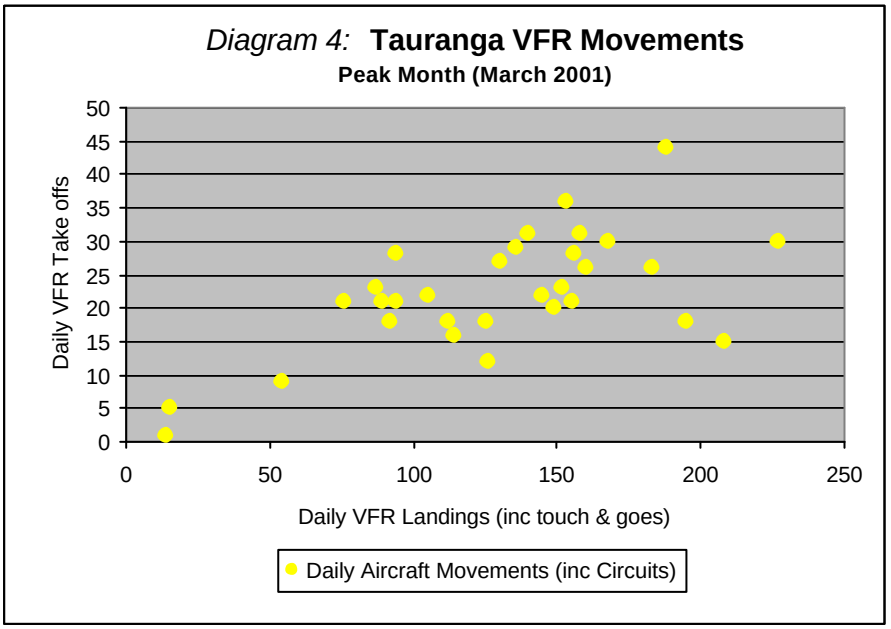


Diagram 4 illustrates the number of general aviation (VFR) aircraft movements and includes 'touch-and-goes' that are recorded as a landing. So for example on a day where it is shown that there were 30 take offs and 170 landings these would therefore include about 140 'touch-and-goes'. During the peak month for Tauranga there were less than 35 daily VFR take offs and landings about 135 'touch-and-goes' per day.



4.9 Financial Performance

We have been unable to obtain the full financial statements for the years since Tauranga District Council (TDC) became the sole owner (shareholder) and so some assumptions have been necessary. For instance: we do have the full financial records for the ten months ended 30th April 1998 (TDC assumed full ownership on 1 May 1998) - we have 'annualised' the ten months data to provide 'annual' data. The data for the year to 30th June 1999 is sparse and we have extrapolated back from the 30th June 2000 year to provide financial data for comparison purposes. We note that the airport was revalued in 1998 and its value increased ten fold. This valuation coincided with the purchase of the airport from the Crown.[28]

To assess the financial performance of the airport, we have looked at two situations. One with the non-aviation activities (commercial leases or rental properties and industrial leases) included and the other with the non-aviation activities excluded. The financial picture that emerges is that TDC is not being financially rewarded from its ownership of the airport and the non-aviation activities are subsidising the aviation activities. Tables 11 and 12 summarise the financial performance.

Table 11: **Tauranga Airport Authority: Financial Performance**
(including non aviation activities)

	1996	*1997*	*1998*	*1999*	*2000*	*2001*
	$000s	*$000s*	*$000s*	*$000s*	*$000s*	*$000s*
			Annualised			
Aviation Revenue	243	273	273	308	325	366
Non-aviation revenue	353	385	412	631	624	696
Total all revenue	596	658	685	938	949	1062
Total expenses	439	554	463	611	759	794
EBIT	193	114	234	385	350	487
Net Profit after taxation	125	33	130	327	190	267
Capital Employed						
Debt	0	80	801	3177	2812	2780
Equity	1773	1809	1900	19239	19297	19646
Economic Value Added (EVA)	57	-25	-33	-1674	-1958	-1850
Cumulative EVA	57	32	-1	-1675	-3633	-5484

- *Including non aviation activities:* for the three years prior to TDC becoming sole owner, the increase in economic value of the airport (EVA) was zero but was in a position of declining economic value. After three years post acquisition, the economic loss in value of the airport amounted to $5.5 million. This considerable reduction in economic value is on account of the revaluation of assets that took place in 1998 after acquisition. An operating profit of

[28] TDC advise that they are required to revalue its assets every three years to replacement cost. It is evident that a valuation based on their use for aviation activities would have been significantly lower.

$267,364 as shown in the 30th June 2001 financial statement on total capital employed of $19.6 million and could not be called a commercial return.

- *Excluding non aviation activities:* for the three years prior to TDC becoming sole shareholder, the economic loss in value (EVA) of the airport was $980,000. After the three years post acquisition, the economic loss in value of the airport amounted to $8.3 million.

Table 12 **: Tauranga Airport Authority: Financial Performance**
(excluding non aviation activities)

	1996	*1997*	*1998*	*1999*	*2000*	*2001*
	$000s	*$000s*	*$000s*	*$000s*	*$000s*	*$000s*
			Annualised			
Total aviation revenue	243	273	273	308	325	366
Total aviation expenses	389	527	433	570	736	743
EBIT	-110	-244	-148	-170	-226	-108
Net Profit after taxation	-178	-325	-252	-228	-386	-328
Capital Employed						
Debt	0	80	801	3,177	2,812	2,780
Equity	1,773	1,809	1,900	19,239	19,297	19,646
Economic Value Added (EVA)	-246	-383	-351	-2,264	-2,559	-2,495
Cumulative EVA	-246	-629	-980	-3,244	-5,803	-8,298

If aviation activities ceased at Tauranga airport presumably the non aviation (commercial) activities would continue, that is *the* non-aviation activities are independent from the aviation activities. Over the six years, 1996-2001, the net surplus from non-aviation activities is $2.7 million. In no one year has the profit of the airport exceeded the net income from non-aviation activities. In other words, without the profit from non-aviation activities the airport would have shown a loss in each of the six years. Thus the aviation activities are being heavily subsidised by these commercial activities. The airport owners will need to question whether this should continue or whether some action is required in terms of its *raison d'être*. Without causing some effect on downturn in air transport services aviation activities would not support an increase in charges that would produce an adequate return on the capital employed, as the capital is now stated.

4.10 Future Aviation Requirements

We have considered three cases: high growth, medium (or expected) growth and low growth. For all cases, however, we have assumed the high population projection for the Tauranga and Western Bay of Plenty districts. This assumption has been made in consultation with the SmartGrowth project team.[29] The population projections used are those provided by EBOP.

[29] Personal communication, Ken Tremaine.

4.10.1 High Growth Forecast

The high growth forecast is based on the following assumptions:

- Auckland passenger traffic continues to grow at the rate of 2.5% per annum, which is the average annual increase for the last five years;
- Wellington passenger traffic grows at 14% per annum, which is the average for the last five years, until the passenger traffic density or flights per person per annum (fpppa) reach 0.75 and thereafter passenger traffic grows in step with population growth;
- other passenger traffic grows in step with population growth at the mean passenger traffic density for 1996-2001 of 0.09 fpppa;
- general aviation activity grows at 6% per annum, the average annual increase 1997-2001;
- the Beech 1900D (19 seats) introduced in 2002, services the Auckland sector throughout the forecast period; a 60% load factor is assumed;
- on the Wellington sector the Saab 340A (33 seats) is replaced by a 45-50 seat aircraft (*eg* ATR42) in 2007 which is in turn replaced by the ATR72 (66 seats) in 2016; a 65% load factor is assumed;
- other air transport movements assume a four seat aeroplane with a 75% load factor.

Table 13 summarises the high forecast passenger and traffic (aircraft movements) for the period 2001 to 2021. By 2021 we estimate that total passenger numbers will have grown from 117,400 in 2001 to 239,000 for 2021 if the high growth assumptions eventuated. In this case Wellington would account for 61% of the market, Auckland 31% and other destinations 8%.

For the high growth case air transport movements would increase from 11,296 in 2001 to 15,842 by 2021 – that is an increase from a mean of 31 movements per day to 43 movements per day, which is about 3 movements per hour over a 16 hour operating day. Thus, with a maximum capacity of 15 movements per hour Tauranga Airport has ample capacity to cater for the high growth scenario well past the year 2021.

General aviation movements (excluding military aviation[30]) increase from about 62,000 in 2001 to about 202,500 in 2021. This would be a significant number of movements and similar to the present level of activity at Ardmore, New Zealand's busiest aerodrome with over 200,000 movements per year. This would have a noticeable impact on the environment and could make scheduled air transport operations awkward (as opposed to difficult) unless air transport continued to receive absolute priority. That is, it is possible that the level of aviation activity by 2011

[30] Which is small and averaged 418 movements for the period 1997-2001.

would begin to be of some concern to air transport operations and by 2016 it would be of concern.

Table 13: **Tauranga: Passenger & Traffic Forecast (High Forecast)**

		2001	*2006*	*2011*	*2016*	*2021*
Population - high projection						
Tauranga District Council		90,000	104,300	114,900	125,500	136,500
Western BoP District Council		39,900	45,300	49,800	54,300	58,800
Total district population		129,900	149,600	164,700	179,800	195,300
	5yr AAI	1.8%	2.3%	1.5%	1.4%	1.3%
Passengers						
Auckland	arr + dep	45,700	51,705	58,500	66,187	74,885
	fpppa	0.35	0.35	0.36	0.37	0.38
	5yr AAI	1.7%	3.1%	3.1%	3.1%	3.1%
Wellington	arr + dep	60,300	112,200	123,525	134,850	146,475
	fpppa	0.46	0.75	0.75	0.75	0.75
	5yr AAI	14.2%	16.8%	2.4%	2.2%	2.1%
Other	arr + dep	11,400	13,464	14,823	16,182	17,577
	fpppa	0.09	0.09	0.09	0.09	0.09
	5yr AAI	-7.5%	4.2%	2.4%	2.2%	2.1%
Total	arr + dep	117,400	177,369	196,848	217,219	238,937
	fpppa	0.90	1.19	1.20	1.21	1.22
	5yr AAI	5.5%	6.8%	1.7%	1.6%	1.5%
Aircraft movements						
Air transport	annual	11,296	14,254	14,296	14,343	15,842
	daily	31	39	39	39	43
	move/16hr	2	2	2	2	3
	5yr AAI	-1.2%	4.7%	1.7%	-0.3%	1.6%
GA ex Military	annual	61,916	84,485	113,060	151,300	202,473
	daily	170	231	310	415	555
	move/12hr	14	19	26	35	46
	5yr AAI	5.0%	4.8%	4.8%	4.8%	4.8%
Total movements (exc Military)		73,212	98,739	127,356	165,643	218,315
	5yr AAI	3.9%	7.8%	6.6%	6.8%	7.1%

4.10.2 Medium Growth Forecast

The medium growth forecast is based on the following assumptions:

Auckland passenger traffic grows in line with population growth and maintains the same passenger traffic density of 0.36 fpppa as that for the period 1996-01; we share the airlines' view that this sector will be subjected to increased competition from road transportation;

- Wellington passenger traffic grows at 10% per annum until the passenger traffic density (fpppa) reaches 0.7 and thereafter grows in step with the population;

- other passenger traffic grows in step with population growth based on the year 2000 traffic density of 0.07, being a little less than the 1997-2001 mean;

- general aviation activity grows at 4% per annum, which is the average annual increase over the last 20 years;

- the Beech 1900D operates the Auckland sector throughout the forecast period;

- on the Wellington sector the Saab 340A (33 seats) is replaced in 2011 by a 45-50 seat aircraft (*eg* ATR42);

- other air transport movements assume a four seat aeroplane with a 75% load factor;

- the load factor for Auckland is 60%, for Wellington 65% and 75% for other destinations.

Table 14 summarises the medium forecast for passenger numbers and aircraft movements. We consider this to be the likely situation for Tauranga.

By 2021 passenger numbers are forecast to be about 221,000 with 62% attributable to Wellington, 32% to Auckland and 6% to other locations. In all, this represents an 89% increase over the 2001 year passenger levels.

Air Transport movements are forecast to increase from 11,300 in 2001 to about 15,100 by 2021. So that in 2021 there are likely to be an average of about 41 air transport movements per day. Tauranga airport has ample capacity to cater for this level of air transport movements.

For the medium forecast general aviation movements increase from 62,000 in 2001 to about 141,000, which is an increase of almost 130%. This represents about 386 movements per day versus the present 170 movements. Tauranga would in these circumstances possibly be the second busiest general aviation aerodrome, after Ardmore. Procedures would be necessary to ensure air transport operations were not adversely affected by general aviation (*viz* delays, runway priority, etc.) That is for the medium growth scenario by 2016 general aviation activity would begin to be of some concern to our transport operations and by 2021 it would be of concern. In other words it is likely that by 2021 there could be a loss of effectiveness for air transport operations unless strict procedures are adopted to ensure priority for air transport.

Table 14: **Tauranga: Passenger & Traffic Forecast (Medium Forecast)**

		2001	*2006*	*2011*	*2016*	*2021*
Population - high projection						
Tauranga District Council		90,000	104,300	114,900	125,500	136,500
Western BoP District Council		39,900	45,300	49,800	54,300	58,800
Total district population		129,900	149,600	164,700	179,800	195,300
	5yr AAI	2.2%	2.8%	1.9%	1.8%	1.7%
Passengers						
Auckland	arr + dep	45,700	53,856	59,292	64,728	70,308
	fpppa	0.35	0.36	0.36	0.36	0.36
	5yr AAI	2.1%	4.2%	2.4%	2.2%	2.1%
Wellington	arr + dep	60,300	97,114	115,290	125,860	136,710
	fpppa	0.46	0.65	0.70	0.70	0.70
	5yr AAI	18.1%	12.7%	4.4%	2.2%	2.1%
Other	arr + dep	11,400	10,472	11,529	12,586	13,671
	fpppa	0.09	0.07	0.07	0.07	0.07
	5yr AAI	-9.2%	-2.1%	2.4%	2.2%	2.1%
Total	arr + dep	117,400	161,442	186,111	203,174	220,689
	fpppa	0.90	1.08	1.13	1.13	1.13
	5yr AAI	6.9%	6.8%	1.9%	1.8%	1.7%
Aircraft movements						
Air transport	annual	11,296	12,742	12,739	13,907	15,106
	daily	31	35	35	38	41
	move/16hr	2	2	2	2	3
	5yr AAI	-1.5%	5.1%	-1.2%	1.8%	1.7%
GA ex Military	annual	61,916	78,287	95,248	115,884	140,990
	daily	170	214	261	317	386
	move/12hr	14	18	22	26	32
	5yr AAI	6.3%	4.0%	4.0%	4.0%	4.0%
Total movements (exc Military)		73,212	91,029	107,987	129,791	156,096
	5yr AAI	0.0%	5.6%	4.4%	4.7%	4.7%

4.10.3 Low Growth Forecast

The low growth forecast is based on the following assumptions:

- Auckland passenger traffic has a passenger traffic density of 0.32 fpppa (10% less than the medium case) and grows in step with population.
- Wellington passenger traffic grows at 5% per annum until the flights per person per year reach 0.65 and thereafter passenger traffic grows in step with population growth;
- other passenger traffic grows in step with population growth at the equivalent of 0.05 fpppa, which is the minimum passenger traffic density over the last six years;

- general aviation activity grows at 2% per annum, half the annual average increase 1982-2001;
- the Beech 1900D (19 seats), introduced in 2002, services the Auckland sector throughout the forecast period; a 60% load factor is assumed;
- on the Wellington sector the Saab 340A (33 seats) is replaced by a 45-50 seat aircraft (*eg* ATR42) in 2011; a 65% load factor is assumed;
- other air transport movements assume a four seat aeroplane with a 75% load factor.

Table 15: **Tauranga: Passenger & Traffic Forecast (Low Forecast)**

		2001	*2006*	*2011*	*2016*	*2021*
Population - high projection						
Tauranga District Council		90,000	104,300	114,900	125,500	136,500
Western BoP District Council		39,900	45,300	49,800	54,300	58,800
Total district population		129,900	149,600	164,700	179,800	195,300
	5yr AAI	2.2%	2.8%	1.9%	1.8%	1.7%
Passengers						
Auckland	arr + dep	45,700	47,872	52,704	57,536	62,496
	fpppa	0.35	0.32	0.32	0.32	0.32
	5yr AAI	2.1%	1.2%	2.4%	2.2%	2.1%
Wellington	arr + dep	60,300	76,960	98,222	116,870	126,945
	fpppa	0.46	0.51	0.60	0.65	0.65
	5yr AAI	18.1%	6.3%	6.3%	4.4%	2.1%
Other	arr + dep	11,400	7,480	8,235	8,990	9,765
	fpppa	0.09	0.05	0.05	0.05	0.05
	5yr AAI	-9.2%	-10.0%	2.4%	2.2%	2.1%
Total	arr + dep	117,400	132,312	159,161	183,396	199,206
	fpppa	0.90	0.88	0.97	1.02	1.02
	5yr AAI	6.9%	4.1%	3.8%	2.6%	1.7%
Aircraft movements						
Air transport	annual	11,296	10,281	10,516	11,790	12,806
	daily	31	28	29	32	35
	move/16hr	2	2	2	2	2
	5yr AAI	-1.5%	3.6%	-0.2%	2.2%	1.7%
GA ex Military	annual	61,916	72,436	79,976	88,300	97,490
	daily	170	198	219	242	267
	move/12hr	14	17	18	20	22
	5yr AAI	6.3%	2.0%	2.0%	2.0%	2.0%
Total movements (exc Military)		73,212	82,717	90,492	100,089	110,296
	5yr AAI	0.0%	3.1%	2.3%	2.6%	2.5%

Table 15 summarises the low forecast passenger and traffic (aircraft movements) for the period 2001 to 2021. By 2021 we estimate that total passenger numbers would

have grown from 117,400 in 2001 to 199,200 for 2021. Wellington would account for 64% of the market, Auckland 31% and other destinations 5%.

If a low growth scenario eventuated we estimate that air transport movements would increase from 11,296 in 2001 to 12,806 by 2021 – that is an increase from a mean of 31 movements per day to 35 movements per day. In the context of Tauranga airport capacity this is not a significant increase in air transport movements.

General aviation movements (excluding military aviation) increase from about 62,000 in 2001 to about 97,500 in 2021. This represents an increase from 170 movements per day to 267 per day and so still a significant number of movements but at these levels are unlikely to be of concern to air transport operations although it is likely that some loss of efficiency may occur towards 2021.

4.11 District Land Capacity

The ability of the surrounding Tauranga and Western Bay of Plenty to accommodate future economic growth has been studied and assessed by a joint venture project called *SmartGrowth*, a Western Bay of Plenty sub regional growth study. The joint venture partners are: TDC, WBOPDC and EBOP. In August 2002 Smart Growth released their *Land Capacity* report. The following paragraphs summarise the main conclusions of this report.

4.11.1 Residential

There is a shortage of available residential zoned land in the sub region. Present residential zoned land caters for expected population growth up to 2013. There is an additional residential land capacity of 17,270 households that would provide projected future households out to 2024. By 2051 it is estimated that the sub region will require land capacity to accommodate 70,000 households. This means that an additional residential land capacity for over 33,900 households is required in the sub region. *Table 16* illustrates the situation.

Table 16: **Residential Capacity**

	Households
Available (zoned) residential land available	15,271
Existing (zone) rural land	3,493
Total available residential	18,764
Future planned urban residential	17,270
Total available residential	36,034
Additional residential needed	33,966
Estimate households 2051	70,000

4.11.2 Business Land

Business land is the name used to describe land required for industrial and commercial purposes. *Table 17* summarises the available land zoned for business purposes.

Table 17: **Available Business Land Capacity**
(Hectares)

	Occupied	*Vacant*	*Total*
Commercial			
Tauranga District	171	53	224
Western BOP District	29	14	43
Sub region total	200	67	267
Industrial			
Tauranga District	406	189	595
Western BOP District	128	31	159
Sub region total	534	220	754

Table 18 summarises the projected uptake of available business land in the sub region. By 2013 current reserves of business land will be depleted. It is evident that from 2013 the economic development of the sub region will be adversely affected unless additional business land is acquired.

Table 18: **Projected Business Land Uptake**
(Hectares)

Available Zoned land	*2001*	*2006*	*2011*	*2016*
Commercial	67	37	7	-25
Industrial	220	133	32	-67
Total Business land remaining	287	170	39	-92

We gather that the demand for commercial and industrial land is currently greater than supply in the area adjacent to the Port of Tauranga and Tauranga airport. Tauranga aerodrome occupies some 225 hectares of land. Its location therefore makes the aerodrome an ideal site for additional business land and so target for planners, developers and the like.

The 225 hectares of airport land would satisfy business land capacity requirements for the whole sub region past the year 2021. However there are a number of complex issues associated with this that are outside the scope of this study and report.

The number one priority for the economic and social development of the Tauranga and Western Bay of Plenty districts is going to be the acquisition of land that will produce employment. If such land cannot be acquired then it is our view that the economic development of not only the Western Bay of Plenty sub region but also the whole Bay of Plenty region will be seriously and adversely affected.

4.12 Economic Development

A Western Bay of Plenty business initiative, called *Priority One,* was established in 2001 to develop the economy of the Western Bay of Plenty. It is mainly funded by the local business interests and has the support of the TDC and WBOPDC.

As part of conducting the consultation process for this study we had some informal communication with *Priority One.*[31] The time scale of the study has not allowed for a considered and formal response from Priority One on the importance of air transport to the Tauranga and Western Bay of Plenty districts. Notwithstanding this, however, the following general comments reflect the informal views of local business interests:

- direct (fast) air services to Auckland, Wellington and Christchurch are important in promoting business and tourism within the BOP region;
- access and egress times to and from an airport of 30-40 minutes would be reasonable;
- if a regional airport was developed it should have an international capability and could well attract and cater for the so-called 'low cost' or 'budget' airlines;
- current air services to the region are considered to be less frequent than desirable and there are limited direct flights – air fares are considered to be too high;
- the three existing airports are inadequate in terms of the services and facilities they attract and offer which is to some extent a function of the air services provided by the airlines;
- a regional airport located roughly equidistant from the main centres of population within the Bay of Plenty region would be logical from an economic development viewpoint – in this regard if the population of the Western Bay of Plenty sub region is likely to be upwards of 300,000 there may be concerns about the adequacy of Tauranga airport in being able to cope with the associated air transport requirements.

One of Priority One's economic development initiatives is the promotion of an industrial park about 5 km to the east of Te Puke.

4.13 Issues

4.13.1 There appears to be three corporate objectives for Tauranga airport; one to provide for "the air travel needs of the community", a second "to provide land for businesses on a commercial basis" and the third "to make a profit across the total business". While the principle purpose is supposedly airport related we are of the view that a review and clarification of the *raison d'être* of the airport will be to the advantage of the owner, TDC. Furthermore,

[31] Informal because our communication was with the executive and not the constituent members.

unless this is done it is likely that the airport could in the long run fail to best meet the requirements of the surrounding districts and the air transport system.

4.13.2 Tauranga airport has the operational capability to handle all types of aircraft likely to be used for domestic air transport up to 2021 and probably well beyond (2051).

4.13.3 The existing airspace conflict between the aerodrome requirements and those of the Port of Tauranga are certain to be of future concern to both the airport and the seaport. Today the minimum decision height for approaches into Tauranga is higher than otherwise, because of obstructions in the port area. At some stage during the next 20 years the Port of Tauranga is likely to be looking to extend the wharf at Sulphur Point to the south. If the port is unable to do this it will impact on the effectiveness and efficiency of its cargo handling operations. If Sulphur Point wharf is extended to the south then, without enhanced navigation aids and a precision approach capability, air transport operations would be adversely affected – there would be a loss of effectiveness. Furthermore, if the wharf was extended more than 275m to the south then instrument departures on runway 25 would not be possible and that would be alarming for air transport operations. Thus while there is now an understanding between the airport and the Port of Tauranga at some future date it is likely that a choice will have to be made in favour of the airport or in favour of the seaport. The basis for such a decision could only sensibly be made on the basis of the relative costs and benefits to economic and social development of the district and region (and nation) as a whole. This suggests the choice would probably be made in favour of the seaport.[32]

4.13.4 Tauranga has three scheduled daily air services: to Auckland, Hamilton and to Wellington. The Tauranga-Auckland link is not considered to be a vital or important component of the domestic network and competes head on with road transport. The Tauranga-Wellington link is important and the airlines see this sector as having promising growth potential. The Tauranga-Hamilton sector is a link or spoke service to and from other places, using Hamilton as the hub. The success and importance of this sector depends on what happens in and out of Hamilton (and more so with one airline than others). Overall, in terms of the national air transport system it is the Tauranga-Wellington sector that is of importance. If passenger traffic on the Auckland sector fell below 33,000 passenger arrivals and departures per year[33] the service would probably be reviewed.

4.13.5 Tauranga is currently the third busiest general aviation aerodrome in New Zealand and accounts for 85% of air movements at Tauranga. The future growth in general aviation is likely to be of particular concern to air transport operations as general aviation could affect their effectiveness.

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[32] The cost-benefit issues include a number of parameters, not only transportation costs and benefits.

[33] The equivalent of four Beech 1900D flights per day.

4.13.6 Tauranga airport, in terms of its runway use, has an optimum and reduced capacity of 15 movements (take offs and landings) per hour. Present air transport movements do not exceed four per hour. General aviation movements do not exceed six per hour but there can be up to 22 'touch and goes' per hour. General aviation operations do not require a sealed runway. Tauranga airport has low utilisation with air transport movements being less than 27% of the airport capacity.

4.13.7 There has been a loss in the economic value to the owner (TDC) of Tauranga airport of between $5.5 and $8.3 million over the last six years. The size of this economic loss depends on whether non aviation activities are considered to be properly part of the airport operations.

4.13.8 Tauranga airport has ample capacity to cater for air transport requirements up to and well beyond 2021. The issue for Tauranga is the growth in general aviation activity. *Table 19* summarises the future air transport requirements. Even at a high growth rate air transport movements average less than three movements per hour and would peak at about six movements by 2021. The concern is the level of general aviation movements. By 2021 general aviation movements are likely to be in the order of 140,000 movements per year, which equates to an average of 32 movements per hour with peaks in the order of 50 per hour. If the high growth scenario eventuates these levels will be reached before 2016. Unless air transport operations are given strict priority there will be a loss of efficiency.

Table 19: **Future Aviation Activity Tauranga**

		2001	*High Growth*	*Medium Growth*	*Low Growth*
Forecast year 2021					
Total passenger arr+dep	annual	117,400	238,937	220,689	199,206
Air transport movements	annual	11,296	15,842	15,106	12,806
	move/16hr	1.9	2.7	2.6	2.2
GA ex Military movements	annual	61,916	202,473	140,990	97,490
	move/12hr	14	46	32	22
Forecast year 2016					
Total passenger arr+dep	annual	117,400	217,219	203,174	183,396
Air transport movements	annual	11,296	14,343	13,907	11,790
	move/16hr	1.9	2.5	2.4	2.0
GA ex Military movements	annual	61,916	151,300	115,884	88,300
	move/12hr	14	35	26	20

4.13.9 Land for commercial and industrial purposes in the Western Bay of Plenty is in short supply and reserves of land will be depleted by 2013. Land that will produce employment is vital to the economic and social development of the district and also the Bay of Plenty region as a whole. Tauranga aerodrome

occupies 225 hectares of what some see as prime commercial and industrial land which would provide for the land needs past 2021. The question of best land use and whether the aerodrome should be forfeited for other purposes can best be determined in a cost-benefit framework. It is a matter that involves more than civil aviation and air transportation.

4.14 Conclusions

4.14.1 Tauranga airport has the capability and capacity to provide for air transport operations for the next 20 years and beyond. General aviation activity could interfere with this from 2014 onwards unless strict operating procedures and priorities favouring air transport are continued.

4.14.2 In terms of the economic and social development of the Tauranga and Western Bay of Plenty districts and also the Bay of Plenty region the main issues concerning Tauranga aerodrome are questions of airspace and land use and priorities.

- Airspace on the approach to runway 07 and for instrument departures on runway 25 should be free of objects and activities affecting aeroplanes landing and taking off. Sulphur Point wharf extensions to the south would further infringe into this airspace. A choice will at some have to be made on the preferred and priority use of this airspace – at present it rests with the airport.

- Tauranga aerodrome occupies 225 ha of land. The question is whether this land would best benefit the Tauranga and Western Bay of Plenty districts and Bay of Plenty region if it was used for commercial and industrial purposes and the aerodrome (and airport) relocated elsewhere.

4.14.3. A cost-benefit analysis would resolve whether it would be in the interests of the surrounding districts and the greater Bay of Plenty region to relocate Tauranga aerodrome and airport. Such an analysis would establish whether the net benefits arising from future seaport development and the additional commercial and industrial land is greater than any net economic loss in transportation benefits arising from a relocation. It is possible that if a relocation of the aerodrome (airport) resulted in the development of a regional airport there could be net benefits to the Western Bay of Plenty, Tauranga districts as well as to the region as a whole. These benefits would arise from better air services (more frequent), the use of larger aeroplanes on some sectors and the overall facilities and services of a bigger airport. The establishment of a regional airport would ensure airlines continued to service the region. Separate consideration would need to be given to general aviation, which at Tauranga has become an important part of the regional and national civil aviation system.

5. Rotorua Airport

5.1 Airport Ownership

The present Rotorua airport was constructed in the early 1960's as a joint venture partnership between the Crown (50%) and local authorities (50%). In 1990 an airport company Rotorua Regional Airport Company Ltd, was established with the Crown and Rotorua District Council (RDC) as 50:50 shareholders.

In 1998 the New Zealand Government offered shares held in Rotorua airport (and Palmerston North airport) for sale. At the time the book value of the total equity in Rotorua airport was $3.8 million; the Government shares comprised 50% of the equity capital. (The book value of the total equity in Palmerston North was $4.6 million.) Central Avion Holding Ltd purchased the Government shares in both companies for $2.5 million of which, we gather, $1.8 million was for Rotorua airport. In August 2002 RDC purchased Avion's shareholding in Rotorua airport and so the airport is now solely owned by the RDC.

5.2 Airport Land

The aerodrome occupies 95.3 hectares, which is owned by the Rotorua Regional Airport Company Ltd. We have been unable to determine the history of land ownership but gather that initially the land was obtained by the Crown under the Public Works Act for aviation purposes.

The airport was developed with a runway length of 1,372m and 30m wide, which was designed to handle Fokker F27 aircraft. Plans are presently being implemented to extend the runway by 200m to the south, the first stage of a proposed 430m extension. The first stage can proceed within the existing land zoning and airspace and noise boundaries.

5.3 Airport Management

Rotorua airport is managed by an airport company, Rotorua District Airport Ltd, wholly owned by the RDC. The airport company is governed by a board of four, two from the Council and two independent members but all are appointed by the RDC.

The airport manager reports to the board of the airport company. The airport company employs six full-time employees and five part-time employees.

In terms of the Airport Authorities Act we believe the airport authority is the RDC, as opposed to the airport company.[34]

[34] We have been unable to confirm whether the conditions prescribed by the Governor-General by Order in Council to establish, operate and manage Rotorua airport applies to RDC or the airport company.

Rotorua airport is not a specified airport company in terms of the Airport Authorities Act – its current revenue is in the order of $1.4 million versus the $10 million criterion.

5.4 Corporate Objectives

The purchase by the RDC of the 50% private shareholding in the airport company was occasioned by a divergence in shareholder objectives. The private shareholder was only willing to provide additional capital for investment in the airport for activities that had a 'commercial' return, whereas the RDC was willing to make capital investment in the airport for which there would be a 'community' benefit or return from that investment. This difference in shareholder expectations and objectives came to a head over the proposed extensions to Rotorua airport. These extensions would not provide a satisfactory financial return to the airport company but was seen as promoting the economic development of the Rotorua district. This illustrates the dichotomy between the corporate objectives of a company (necessarily for profit) and those of a not-for-profit organisation.

Notwithstanding this, however, the stated objectives of Rotorua Regional Airport Limited are:[35]

> *to maintain existing airport services at a high standard and to enhance airport facilities to accommodate changes in aircraft type and airline services whilst continuing to operate the company as a fully commercial and successful business.*

In doing this the company aims, amongst other things, to:[36]

> *increase the value to the shareholders' investment at a rate similar to comparable companies, taking into account the level of risk associated with an airport business viz a viz other businesses, in a free market economy.*

The company also has three performance indicators: ratio of net profit to shareholders fund, performance ratio net profit to total assets (capital employed) and the interest cover ratio.

In view of the recent experiences of the Rotorua Regional Airport Limited (RRAL) it would seem to us that, from the outset, there has been some confusion over their corporate objectives. We have been advised by RRAL that "in light of the recent ownership change the company, in consultation with its shareholder, is currently reviewing its corporate objective".

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[35] Rotorua Regional Airport Limited, Draft Statement of Corporate Intent March 2002 to April 2004.

[36] Ibid.

5.5 Capability

Rotorua presently has a 1,375m runway with a width of 30m and meets CAA requirements (standards). An extension of 430m to give a total of 1,805 is planned. The airport company as the airport operator is certificated under NZCAR Part 139. Air traffic services (ATS) are provided by ACNZ and are available 1630hrs to 1930hrs daily to cover scheduled air transport flights. Outside these hours of ATS specific unattended aerodrome procedures are used. Air transport and flights conducted under instrument flight rules (IFR) into and out of Rotorua are supported by ground based navigation aids (*ie* VOR, NDB and DME)[37] and prescribed instrument arrival and departure procedures.

Presently four aircraft types use Rotorua on domestic air transport operations:

- Beech 1900D (MCTOW 7,765 kg, 19 seats)
- BAe Jetstream 31 and 32 (MCTOW 5,700 kg, 19 seats)
- Saab 340A (MCTOW 12,700 kg, 33 seats)
- DHC Dash 8 (MCTOW 18,600 kg, 40 seats)
- ATR 72-500 (MCTOW 20,000 kg, 66 seats)

The Beech 1900D effectively has no payload or operating limitations into or out of Rotorua.[38] The Saab 340 has a very small payload penalty on take off on runway 01 when the ambient temperature is greater than 17.5°C or the wind speed is less than 10 kts. This is due to an obstacle north of the runway.

The ATR72 also has payload limitations in operating from the current runway. In winter there is a payload penalty of about 800kg (8 passengers) and in summer of about 1,200 kg (12 passengers)[39].

The B737-300 (132 seats) cannot effectively operate domestic air transport services into and out of Rotorua with the present runway length. The payload penalty is in the order of 5.7 tonnes (57 passengers), which means that the available passenger seats are the equivalent to a 56% load factor – this makes B737-300 operations uneconomic. (For the record, B737-300 trans Tasman operations would have a payload limitation the equivalent to 104 passengers, which means only 28 passengers could be carried.)

With a 430m extension to the runway the B737-300 would be unrestricted in payload for domestic air transport operations. For trans Tasman services, according to Air New Zealand, there would be about a 3.6 tonne payload penalty (36 passengers), which would effectively rule out scheduled services and possibly charter services.[40]

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[37] VOR = VHF omni-directional radio range, see also footnote 23.

[38] The obstacles within the aerodrome OLS do not affect operations unless the ambient temperature is very hot (38°C or more).

[39] These payload penalties are based on the prevailing weather conditions during winter and summer.

[40] This is based on a 600m extension which would include the 430m of runway plus a starter extension.

Existing aerodrome facilities at Rotorua are nevertheless ample to support air transport services by turbo-prop aircraft; they are inadequate for domestic jet operations, except with an aircraft like the BAe 146 (which also operated with payload penalties). Thus the requirements for Rotorua should meet those for an aerodrome reference code (ARC) number 3C (for the ATR 72 and BAe 146-300) and this corresponds to a runway width of 30m. The B737-300 is a code 4C aeroplane. To support a B737-300, an ARC code of 3C would be acceptable provided the aeroplane reference field length was less than 1,800m.[41] This means that for B737-300 operations, an ARC code of 4C would normally be required which means a minimum runway width of 45m (the runway width at Rotorua is 30m). However, Boeing have certificated the B737-300 (and other models) for operation on 30m width runways. Nevertheless, to operate from 30m width runways an authorisation is required from the safety regulator (CAA), who would in turn rely on the particular 'route guide' specification for the operation. So even with an extension of 430m at Rotorua, an authorisation under NZCARs (safety regulations) would be necessary in respect of the runway width.[42]

5.6 Aerodrome Restrictions

Rotorua has a serious problem regarding obstacles to the north of the runway that can protrude and have protruded through the obstacle limitation surface (OLS) and probably also close to the obstacle protection surface (OPS). The obstacles are a clump of Kahikatea trees (white pines) about 1,200m north of the airstrip. We understand that these trees have protruded through the OLS by 7m. The trees are located on Maori land and the owners have, for a variety of reasons, been unwilling or reluctant or unable to keep the trees trimmed. So they have become a hazard to air navigation. We gather that an agreement has recently been reached with the owners to enable the trees to be trimmed. This agreement is for the next 20 years after which time the situation will be reviewed and a new agreement reached. Failing this the airport would then be forced to curtail air transport operations at Rotorua. The problem is that the trees reputedly grow at 250mm per year. Translated into an aeronautical hazard this is the equivalent of the loss of 15.6m of runway each year. When the trees protruded the OLS by 7m this was the equivalent to a loss of 438m of runway.

It is therefore evident that in the longer run the planned 430m extension could be to no avail unless the trees to the north are kept trimmed so as not to protrude the OLS.

The New Zealand Aeronautical Information Publication, the planning manual and instrument flight guide, notes a caution for Rotorua. This caution relates to downdrafts and turbulence on final approach for runway 19 in south-east wind conditions as well as the usual New Zealand bird hazard year round.

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41 The aeroplane reference field length (ARFL) is the minimum field length required for take off at maximum certified take off weight (MCTOW) at sea level, still air, 15°C, 1013.2 hPa air pressure and a zero runway slope.

42 Which would take into account, amongst other things, more stringent cross wind limitations.

Rotorua aerodrome has been constructed on a relatively narrow piece of land between provincial highway 30 and Lake Rotorua. The existing airstrip is confined to an area 1,492m in length and 150m in width; the width is the minimum runway strip width permitted for (non-precision approach) domestic air transport operations. Unlike Tauranga aerodrome the effective strip width is relatively narrow. Because of this, simultaneous operations on the runway and parallel grass strip are prohibited. This lack of area for aircraft operations means that gliding is restricted to the weekends.

Skydiving operations are carried out on a regular basis and there are frequent conflictions between skydiving and air transport operations. For safety reasons an eight minute interval is insisted upon by air traffic control and air transport is given priority.

There are a number of high hills to the south-east of Rotorua airport, within 20 nautical miles (37km). Mt Tarawera at 3,644ft, the highest, is 11nm (20km) from the airport. But there is also an unlit obstruction 1,959ft high 2nm (3.7km) south-east of the airport and a lit obstruction 1,594ft high 5nm (9km) south of the extended centre-line of the runway plus a further unlit obstruction 2,625ft high directly to the west of the airport (5.5nm or 10km). The point is Rotorua is not the most ideal location to establish an airport from air navigation and flight operations perspective's. The upshot is that non precision (instrument) approaches for runway 01 are offset or curved to avoid obstacles and hazards to air navigation. Similarly, instrument departures or missed approaches from runway 19 are designed to avoid these same obstacles.

For the airlines and pilots flying into and out of Rotorua these obstacles to air navigation are managed within standard operating procedures as part of normal air transport operations. For turbo prop aircraft the geography and obstacles associated with flying into and out of Rotorua do not present any limitations. This is, however, not so for jet aircraft. Rotorua was one of four airports in New Zealand for which the airlines required special training and operating procedures and limitations. For example, Rotorua was limited to daylight operations for the B737; this type of restriction puts pressure on aircraft utilisation and aircraft schedule planning. When Qantas New Zealand operated BAe 146 aircraft through Rotorua similar restrictions applied.

Rotorua is elevated 935ft above mean sea level. It is the third highest airport in New Zealand – behind Taupo (1,335ft) and Queenstown (1,171ft). Its relatively high elevation and mountainous location combined with typical central North Island climatology can cause restrictions to flying. On average fog affects airport operations 24 days each year.[43] It is however rare for flying to be restricted for wind strength or crosswind components. Low cloud, however, can frequently restrict flying operations at Rotorua.

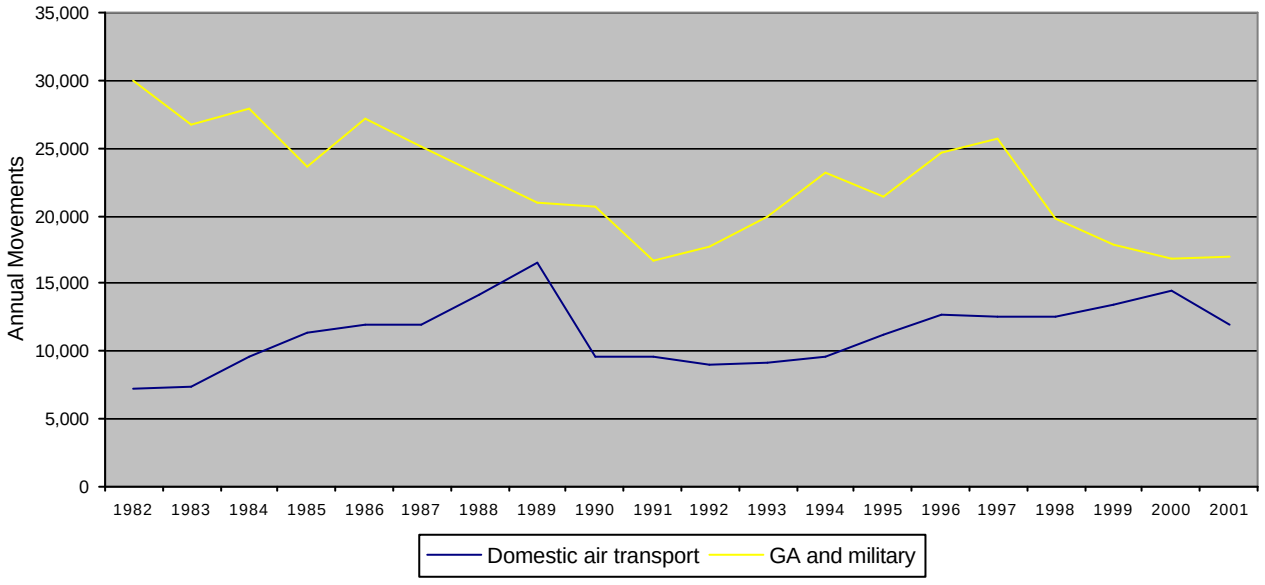
[43] The New Zealand Meteorological Service advise 24 days while Airways Corporation, which operate air traffic services at Rotorua advise 30 days.

5.7 Airport Operations

Diagram 5 illustrates the trend in aircraft movements for domestic air transport and general aviation which includes military aviation. Military aviation accounts for a very small number of movements - averaging about 350 per year over the last six years and not greater than 707 movements, which occurred in 1998.

It is evident that the trend in aircraft movements for Rotorua has been a roller-coaster ride. Rotorua has had a history of disjointed air transport services. For an airport in the national air transport system that is (supposed to be) an international destination this is unusual. General aviation activity too shows significant fluctuation in aircraft movements but has steadily declined from 30,000 movements per year in the early 1980s to about 16,000 movements per year, which was reached in 1991. After a resurgence in movements in the mid 1990s the level of movements for the past two years has returned to 16,000.

Diagram 5: **Rotorua Aircraft Movements 1982 - 2001**



5.7.1 Air Transport

Air transport services have been operated into and out of Rotorua since 1939. But during World War II the aerodrome (which was then located adjacent to the Arikikapakapa golf course) was used by the air force. Air transport services were resumed after the war and a number of air transport operators offered charter services into and out of Rotorua as well as to Opotiki, Whakatane and Tauranga. We gather that most Rotorua charter services were to and from Tauranga. National Airways Corporation (NAC) began air transport services in 1947 with DH89 Dominies and later with DH114 Herons. All air transport operations into Rotorua aerodrome were conducted under visual flight rules (VFR) and were not completely straightforward. The airstrip sloped downwards towards the lake and all landings were uphill and all take offs were downhill – there was a maximum tailwind

component of 13 knots. After a number of incidents (including one involving the Duke of Edinburgh) NAC withdrew its operations from Rotorua around 1956-57. Thus the weekly service: Rongotai-Napier-Rotorua-Hamilton and return, overflew Rotorua. (The Hamilton turn round connected with a DC3 service: Paraparaumu-Wanganui-Hamilton-Whenuapai and return.) While DC3 aircraft could get in and out of Rotorua aerodrome it was not suitable for DC3 air transport operations. Furthermore, VFR operations for air transport were considered unreliable and Rotorua aerodrome unsuitable for regular air transport operations.

The new airport was opened in 1964. However, NAC began services with the DC3 in November 1963 and Fokker Friendship F27 services were introduced in September 1965. The last DC3 service was in October 1968. Throughout the 1970s and the early 1980s Rotorua was serviced by the Fokker F27 of NAC and then Air New Zealand plus the Hawker Siddeley 748 (HS748) of Mt Cook Airlines. The F27 offering direct daily services to Wellington and Tauranga and the HS748 offering direct daily services to Auckland, Christchurch, Queenstown and Mt Cook. Also a service was flown to the Bay of Islands (Kerikeri) with a (6 seat) Piper Navajo.

Newmans Airways began between Rotorua and Christchurch in 1985 with the DHC7 'Dash 7' and later with DHC 'Dash 8' aircraft. Newmans Airways were taken over by Ansett interests around 1987 and became Ansett New Zealand. This saw the introduction of B737-100s on the main trunk and BAe 146 'Whisper Jet' aircraft soon replaced these. So from 1985 there was an increase in services to and from Rotorua as Air New Zealand and Newmans Airways – Ansett New Zealand competed head-on over the Rotorua-Christchurch sector. Ansett soon introduced services to Wellington. Air transport services peaked in 1989 with a total of about 18,000 movements, which on average is about 24 flights per day in and out of Rotorua.

The history of Air New Zealand's services over the past 15 years is a good example of the vagaries of airline scheduling and the impact of head-on competition. The following few paragraphs illustrate what we mean by a roller-coaster ride. Airports everywhere are subjected to the same vagaries.

In 1986 Air New Zealand operated a daily direct service to Kerikeri with a Piper Navajo and this continued until 1991: Air New Zealand's HS 748 service to Auckland (Mt Cook Airlines being a wholly owned subsidiary) was operating in 1986 and was briefly complimented by the Navajo in 1988. The HS748 service to and from Auckland continued until 1996 when this aircraft was withdrawn from service. In 1993 Air New Zealand introduced a daily B737 service between Auckland and Rotorua which complimented the HS748. In 1994 the Bandeirante and Metroliner were also introduced to the Auckland-Rotorua sector. From 1995 until 1998 all three aircraft (B737, Bandeirante and Metroliner) operated Auckland-Rotorua. In 1999 the Metroliner was withdrawn but reintroduced in 2000 when B737 services ceased. In 2001 the Bandeirante maintained the Auckland-Rotorua service and this aircraft was replaced this year (2002) by the Beech 1900D.

Air New Zealand maintained a Fokker Friendship service linking Tauranga and Rotorua until 1989. In 1987 Air New Zealand (Mt Cook Airlines) introduced an HS 748 service between Rotorua and Taupo, as another link to Wellington. This service continued for eight years until 1995.

In 1986 services to and from Wellington were provided by an Air New Zealand Fokker Friendship (50 seats) which was complimented by the HS 748 in 1987 and then replaced by it in 1988. The 44 seat HS 748 served the Wellington sector until 1996 when it was replaced by the 33 seat Saab 340A and the 19 seat Metroliner III. The Metroliner III was in turn withdrawn from the Rotorua-Wellington service in 2000. The Saab 340A continues to service the Wellington sector.

In 1986 the Rotorua-Christchurch sector was serviced by Air New Zealand (Mt Cook Airlines) with the HS 748. This aircraft remained in service on this route until it was withdrawn from all services in 1996.[44] In 1992 Air New Zealand introduced the B737 (113 seats) between Rotorua and Christchurch and it remained in service until October 2000 when the B737-200s were withdrawn from service. The ATR 72 (66 seats) replaced the HS 748 in 1996 and continues in service today on this sector.

Air New Zealand (Mt Cook Airlines) introduced a direct service between Rotorua and Mt Cook in 1987. This service continued until 1994 with HS 748s but was withdrawn for a period in 1993. In 1992 Air New Zealand operated B737s on this sector as well as the HS 748.

In 1988 Air New Zealand (Mt Cook Airlines) introduced a HS 748 direct service to and from Te Anau; this service was terminated in 1990. In 1989 Air New Zealand (Mt Cook Airlines) introduced a HS 748 service between Rotorua and Wanaka; this twice daily service lasted four years.

In 1987 Air New Zealand (Mt Cook Airlines) introduced direct services between Rotorua and Queenstown with HS 748 aircraft, which continued to operate until 1996 when they were replaced by the ATR72. As for the Christchurch-Rotorua sector, B737s were also introduced on the Queenstown-Rotorua sector in 1992 remaining in service until 2000. There were periods in 1994 and 1995 when the HS 748 was withdrawn and so the B737 was the only Air New Zealand aircraft serving the Queenstown-Rotorua sector.

The collapse of Ansett New Zealand in April 2001 saw the exit of the daily BAe 146 service to Christchurch and the three to four daily turbo prop flights to Wellington. That was about 3,500 movements per year.

Over the last 15 years Rotorua has seen just about every type of aeroplane employed by the main carriers in services through Rotorua. It has been evident that increased competition on a particular route, such as Christchurch, resulted in bigger and faster aeroplanes being used by the airlines. Routes such as Auckland, which have little or no competition, employ aeroplane types that tend to maximise airline profits. This is exactly what one would expect as airlines, free of economic regulation, are dedicated to their own interests – they are profit organisations and their corporate objective is to increase the earnings per share and return on the capital employed.

[44] Except for most of 1993 when the B737-200 was the only aircraft serving this sector.

In the early 1980s total passenger numbers through Rotorua averaged over 220,000 per annum.[45] In 2001 total arrivals and departures were 234,000. More than half (54%), 127,100 passengers, flew to or from Christchurch, 32% (75,500) to or from Wellington, 12% (29,000) to or from Auckland and about 2,400 passengers flew to or from other locations (ie 1%).

Table 20 summarises passenger and aircraft movements for Rotorua between 1996 and 2001. It is evident that:

- passenger numbers appeared to be on the increase until the collapse of Qantas New Zealand in 2001 – the impact being a 10% decline (26,000 passengers) in numbers;
- this has also created a decline in numbers to and from Christchurch and especially to and from Wellington;
- in the year 2000 there was a significant increase (10%) in passenger traffic over the Christchurch sector and the reintroduction of the BAe 146 for a few months in 2001 probably helped to arrest the decline for that year;
- 1999 saw a significant increase (9%) in the Wellington passenger traffic;
- during 1999 the growth in passenger traffic to and from Auckland was also the highest for this period;
- passenger traffic to other designations has been in the order of 4,000 to 6,000 per year;
- Overall the flights per person per annum for Rotorua is 2.0; this is the equivalent of one fpppa on the Christchurch sector (mostly tourists), 0.72 fpppa for Wellington, which for provincial districts is a relatively high passenger density, and about 0.4 fpppa over the last two years for Auckland.

The Auckland sector is mostly a business market and, as for Tauranga, Rotorua is at the edge of the preference for point-to-point travel by motor car. The Rotorua-Auckland sector has never been an important part of the airlines' network, despite the appeals made by the tour operators.

The Rotorua-Christchurch sector is an important part of the national air transport system, especially because of its importance to the tourism market. There are two important segments of the tourism market: the international tour group segment and the convention segment.

[45] See *Table 5.* Between 1982 and 1986 passenger numbers grew from 125,000 (in 1982) to 311,500 (in 1986), which is an annual average increase of 26% per year. Newmans Airways introduced services in 1985 and in this year passenger numbers jumped to 283,000.

Table 20: **Rotorua Route Analysis**
Passenger Arrivals & Departures

	1996	*1997*	*1998*	*1999*	*2000*	*2001*
Population						
Rotorua District Council	66,100	66,700	67,200	67,200	67,200	68,700
Kawera District Council	8,050	7,920	7,740	7,520	7,270	7,600
Whakatane District Council	33,900	34,100	34,100	33,900	33,700	34,300
Opotiki District Council	9,600	9,660	9,760	9,830	9,910	10,300
Total	117,650	118,380	118,800	118,450	118,080	120,900
Annual growth		0.6%	0.4%	-0.3%	-0.3%	2.4%
5 year AAI					0.1%	0.4%
Auckland						
Arrivals & departures	21,500	21,500	21,500	26,300	30,500	29,000
Annual growth	0%	0%	0%	22%	16%	-5%
5 year AAI					9.1%	7.8%
6 year AAI						6.2%
fpppa	0.29	0.29	0.29	0.35	0.41	0.38
6 year fpppa						0.33
Christchurch						
Arrivals & departures	120,500	118,500	116,700	119,400	131,000	127,100
Annual growth	0%	-2%	-2%	2%	10%	-3%
5 year AAI					2.1%	1.8%
6 year AAI						1.1%
fpppa	1.02	1.00	0.98	1.01	1.11	1.05
6 year fpppa						1.03
Wellington						
Arrivals & departures	84,500	85,500	83,000	90,300	93,400	75,500
Annual growth	0%	1%	-3%	9%	3%	-19%
5 year AAI					2.5%	-3.1%
6 year AAI						-2.2%
fpppa	0.72	0.72	0.70	0.76	0.79	0.62
6 year fpppa						0.72
Other						
Arrivals & departures	4,600	4,800	4,800	4,600	6,200	4,800
Annual growth	0%	4%	0%	-4%	35%	-23%
5 year AAI					7.7%	0.0%
6 year AAI						0.9%
fpppa	0.07	0.07	0.07	0.07	0.09	0.07
6 year fpppa						0.07
Total All						
Arrivals & departures	231,100	230,300	226,000	240,600	261,100	236,400
Annual growth	0%	0%	-2%	6%	9%	-9%
5 year AAI					3.1%	0.7%
6 year AAI						0.5%
fpppa	1.96	1.95	1.90	2.03	2.21	1.96
6 year fpppa						2.00
Auckland market	9%	9%	10%	11%	12%	12%
Christchurch market	52%	51%	52%	50%	50%	54%
Wellington market	37%	37%	37%	38%	36%	32%
Other markets	2%	2%	2%	2%	2%	2%

The size of the aeroplane is important to the tour group market. A bus will seat up to 48 passengers and so aeroplanes with a seating capacity of less than 60 or 100 seats can disrupt tourism operators plans unless the services are dedicated tourism services not dealing to business and other travellers – there are logistical problems when groups of tourists are spread between flights. For this reason tourism operators would like to see B737s with their higher seating capacity of (now) 136 seats.[46] The size of the aeroplane is not so critical to the convention market.

Local tourism interests state that to gain maximum benefit from both these sectors a jet service is necessary.[47] In this regard the connection with Christchurch is considered by local tourism interests to be of vital importance.

At the present time the Rotorua-Christchurch sector is seen by the airlines as a turbo prop operation because the economics of a turbo prop aeroplane are more favourable to the airline than a jet service. Notwithstanding this, however, it is plainly evident that competition on this sector saw the introduction of jets. The present runway length of 1,375m prevents the operation of B737-300 aircraft but the extension to 1,800m will change this. Nevertheless, because an airport has a jet capability does not necessarily mean that jet aircraft will use it – to think otherwise would be a grave mistake and there are examples of this elsewhere within New Zealand.

Airlines will (naturally) be dedicated to their own interests. They will employ their fleet and arrange their network and schedule to head off the competition and at the same time maximise profit. If jet services to and from Rotorua do not support these objectives they will not happen. But, if a new entrant introduced a jet service on the Rotorua-Christchurch sector then we have little doubt that existing operators would match the service.

The Wellington-Rotorua sector is, however, a potential jet service[48]. The present and forecast traffic density is insufficient to support a jet service within the next 20 years unless competitive pressure bought this about.

Overall the (dominant) airline view is that passenger traffic levels for Rotorua are likely to remain static, at least in the short to medium term. Whether this is a view influenced by the airlines' own plans is uncertain. But one thing is certain and that is an airline will provide services to an existing demand before anything else.

In the early 1980s about 230 tonnes per annum of air cargo was moved through Rotorua. Today negligible volumes of cargo are loaded and unloaded at Rotorua; estimated at about 100kg per month.

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[46] Up to November 2002 the B737-300 was configured to 122 seats for domestic services. The BAe 146-300 had 94 seats; the ATR 72 has 66 available seats.

[47] We gather the Major Hotels and Attractions Group have indicated to the RDC that they would be prepared to offer some form of underwriting of an airport loan on the basis that the airport was 100% owned by the RDC.

[48] Wellington-Christchurch is 165nm and at the minimum distance for a jet service; Rotorua-Wellington is about 225nm. So Rotorua-Christchurch is 390nm.

5.7.2 General Aviation

Over the last 10 years general aviation accounted for 64% of aircraft movements at Rotorua. This has declined to 60% over the last five years (see *Diagram 5*).

The main general aviation activity is skydiving which operates seven days per week. Aerial work (topdressing and photography) operate out of Rotorua during the week. The local aero club, gliding club and private owners mainly operate on the weekends. Two charter and air taxi operators are also based at Rotorua and altogether operate five aeroplanes (including a floatplane) plus a helicopter. There is a helicopter operator with two machines based at Rotorua. We estimate that about 25 aircraft are based at Rotorua.

Rotorua ranks as the 10th busiest general aviation aerodrome in New Zealand, someway behind Dunedin and just ahead of Wellington. Rotorua has less than one quarter of the general aviation movements of Tauranga.

5.8 Airport Capacity

The optimum runway capacity of Rotorua is about 15 movements per hour for runway 01 and 18 movements per hour for runway 19. In the summer months the usual runway is 01, in winter it is runway 19. The reduced runway capacity is 12 movements per hour.

Air transport movements at Rotorua currently do not exceed six movements per hour. General aviation (VFR) movements do not exceed three movements per hour. There are no more than four 'touch and goes' in any hour and these tend to be between 1600-1800hrs when air transport movements occur.

Diagram 6 illustrates the hourly movements at Rotorua. It is evident that there is plenty of capacity available at Rotorua.

Diagram 6: **Rotorua Hourly Movements**

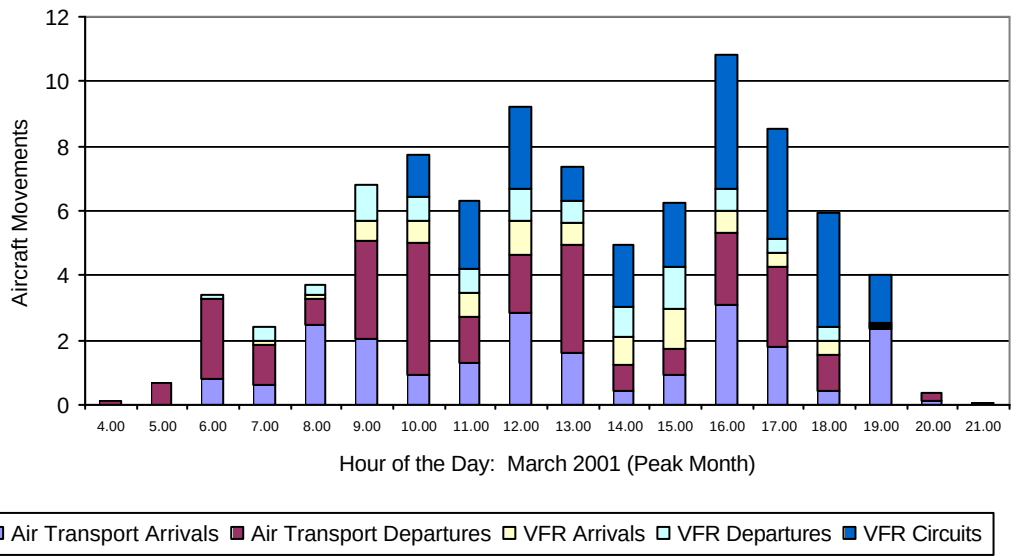


Diagram 7 illustrates the number of daily arrivals and departures for air transport movements. There are usually between 21-27 arrivals and departures per day.

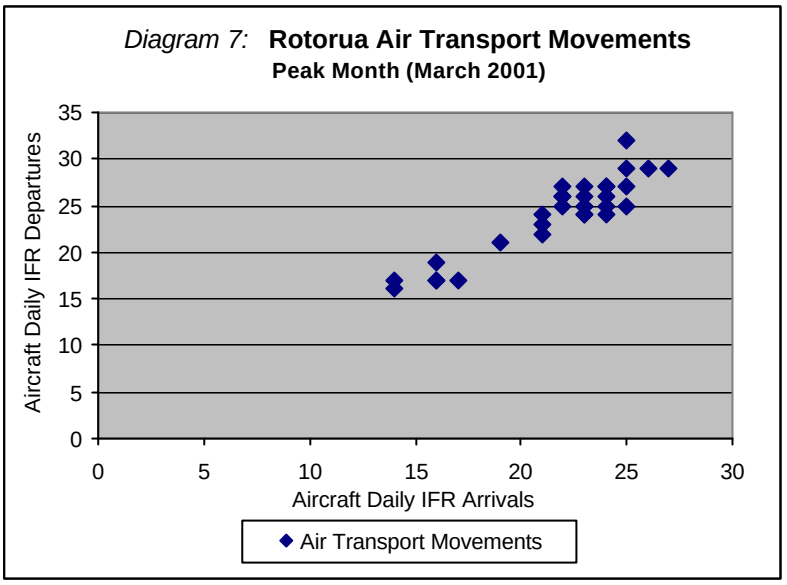
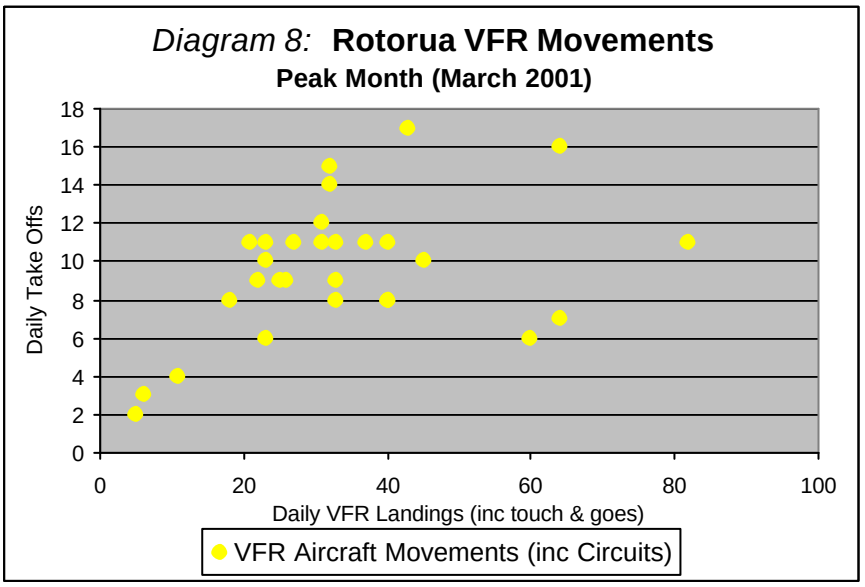


Diagram 8 illustrates the number of general aviation (VFR) aircraft movements and includes 'touch and goes' which are recorded as a landing only. So for example on a day where it is shown that there were 11 take offs and 80 landings this would therefore include about 69 'touch and goes. During the peak month for Rotorua there were less than 17 daily VFR take offs and landings about 30 'touch and goes' per day, however, there were days when 'touch and goes' exceeded 50 per day and these were mainly on the weekend.



5.9 Financial Performance

Table 21 summarises the financial performance for Rotorua airport over the period 1997-2001. The EVA analysis shows that the shareholders of Rotorua airport increased the value of their shareholding in the years 1997 to 1999 by $198,000. However in the last three years there has been a loss in shareholder value of $620,000. From the period 1997 to 2002 the loss in value amounts to $422,000. In 1999 about $1 million was spent on resurfacing the runway and is reflected in the capital employed.

Table 21: **Rotorua Regional Airport Ltd:**

Year ending June	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
	$000s	*$000s*	*$000s*	*$000s*	*$000s*	*$000s*
Revenue	1197	1196	1118	1187	1271	1364
Expenses	828	815	735	853	994	1080
EBIT (overall)	461	447	425	402	375	375
Taxation	127	133	135	115	106	104
Net Profit after taxation	258	270	274	232	202	214
Capital employed						
Debt	616	440	264	1250	1250	1250
Equity	3670	3903	4105	4258	4425	4582
Total capital employed	4286	4343	4369	5508	5675	5832
Economic Value Added (EVA)	116	59	22	-178	-221	-221
Cumulative EVA	116	176	198	20	-201	-422

5.10 Developments

In 1999 the airport company resurfaced the runway at a cost of $1 million. The airport company presently has plans for some major developments, which are summarised below (it is emphasised that these costs are of a 'rough order of magnitude):

- to extend the runway by 200m to the south (being the first part of a proposed 430m extension) and to upgrade the existing airport terminal building to cater for B737-300 aircraft; total cost an estimated $6.5 million. Work has begun and it is planned for completion early 2003;

- to renew the taxiway and part of the aircraft apron in front of terminal, total estimated cost $1.4 million with completion planned before March 2004;

- to extend the runway a further 230m to complete the 430m extension, upgrade airport roading and parking facilities, renew and provide temporary (interim) accommodation for trans Tasman services, estimated total cost $8.9 million with completion by March 2005.

So in all about $16.8 million is planned on developing Rotorua airport and to be spent over the next two and a half years. This equates to 12 years airport revenue. Furthermore, the $5 per passenger airport development levy will bring in about $600,000 per year, which is less than half the financial cost of servicing the proposed expenditure.

5.11 Future Aviation Requirements

Again we have considered three cases: high growth, medium (or expected) growth and low growth.

5.11.1 High Growth Forecast

The high growth forecast is based on the following assumptions:

- high growth population projections provided by EBOP and Statistics New Zealand;
- Auckland passenger traffic grows at the rate of 9% per annum, which is the average annual increase between 1996-2000, until passenger density reaches 0.75 flights per person per annum (fpppa) and then traffic increases in step with population growth;
- Christchurch passenger traffic grows at 3% per annum, which is 50% higher than the average annual increase between 1996 and 2001;
- Wellington passenger traffic grows in step with the population with a traffic density of 0.79 fpppa, which is the highest density achieved between 1996 and 2001;
- other passenger traffic grows in step with population growth at the highest passenger traffic density for 1996-2001 of 0.09 fpppa;
- general aviation activity grows at 1.4% per annum, double the annual average population growth;
- the Beech 1900D (19 seats) introduced in 2002, services the Auckland sector and is replaced in 2013 by an ATR 42 (48 seats); a 60% load factor is assumed
- on the Christchurch sector ATR 72s (66 seats) are replaced by a B737 (132 seats) in 2019; a 60% load factor is assumed;
- on the Wellington sector the Saab 340A (33 seats) is replaced by a 45-50 seat aircraft (*eg* ATR42) in 2011; a 65% load factor is assumed;
- other air transport movements assume a four seat aeroplane with a 75% load factor.

Table 22: **Rotorua: Passenger & Traffic Forecast**
(High Forecast)

		2001	*2006*	*2011*	*2016*	*2021*
Population - high projection						
Rotorua District Council		68,700	72,100	75,100	77,900	80,800
Kawera District Council		7,600	7,500	7,300	7,100	6,900
Whakatane District Council		34,300	35,200	35,900	36,400	36,800
Opotiki District Council		10,300	10,900	11,500	12,000	12,700
Total district population		120,900	125,700	129,800	133,400	137,200
	5yr AAI	0.5%	0.8%	0.6%	0.5%	0.6%
Passengers						
Auckland	arr + dep	29,000	44,620	61,800	63,750	65,775
	fpppa	0.38	0.56	0.75	0.75	0.75
	5yr AAI	8%	11.4%	8.5%	0.8%	0.8%
Christchurch	arr + dep	127,100	147,344	170,812	198,018	229,557
	fpppa	1.05	117.2%	131.6%	148.4%	167.3%
	5yr AAI	1.8%	3.8%	3.8%	3.8%	3.8%
Wellington	arr + dep	75,500	99,303	102,542	105,386	108,388
	fpppa	0.62	0.79	0.79	0.79	0.79
	5yr AAI	-3%	7.1%	0.8%	0.7%	0.7%
Other	arr + dep	4,800	5,047	5,257	5,453	5,656
	fpppa	0.07	0.07	0.07	0.07	0.07
	5yr AAI	0.0%	1.3%	1.0%	0.9%	0.9%
Total	arr + dep	236,400	296,314	340,411	372,607	409,376
	fpppa	1.96	2.36	2.62	2.79	2.98
	5yr AAI	0.7%	5.8%	3.5%	2.3%	2.4%
Aircraft movements						
Air transport	annual	11,980	13,947	14,773	12,409	10,542
	daily	32	38	40	34	29
	move/16hr	2	2	3	2	2
	5yr AAI	-1.2%	4.8%	1.5%	-4.3%	-4.0%
GA ex Military	annual	16,680	17,881	19,168	20,548	22,027
	daily	46	49	53	56	60
	move/12hr	4	4	4	5	5
	5yr AAI	-8.1%	1.8%	1.8%	1.8%	1.8%
Total movements (exc Military)		28,660	31,827	33,941	32,957	32,569
	5yr AAI	-6.8%	2.7%	1.6%	-0.7%	-0.3%

Table 22 summarises the high forecast passenger and traffic (aircraft movements) for the period 2001 to 2021. By 2021 we estimate that total passenger numbers will have grown from 234,000 in 2001 to 409,376 for 2021 if the high growth assumptions eventuated. In this case Christchurch would account for 56% of the market, Wellington would account for 26%, Auckland 16% and other destinations 1%.

For the high growth case air transport movements would decrease slightly from 10,752 in 2001 to 10,542 by 2021 – 29 movements per day, which is a mean of 2 movements per hour over a 16 hour operating day. Thus, with a reduced capacity of

12 movements per hour Rotorua airport has ample capacity to cater for the high growth case. The reason for the decrease in movements is the assumed replacement of the B1900 in 2013 and in 2019 of the ATR 72 by a B737. Otherwise movements reach a peak in 2012 of 14,968.

General aviation movements (excluding military aviation[49]) increase from about 16,700 in 2001 to about 22,000 in 2021. This is the equivalent of an increase from 49 movements per day to 60 movements per day, well within the optimum capacity of the airport.

5.11.2 Medium Growth Forecast

The medium growth forecast is based on the following assumptions:

- medium population projections;
- Auckland passenger traffic increases at 6% per annum (the AAI 1996-2001) and then when the traffic density reaches 0.7 fpppa grows in line with population growth;
- Christchurch passenger traffic grows at 2% per annum, the 5 year mean over the period 1996-2001;
- Wellington passenger traffic grows in step with the population at a passenger traffic density of 0.72 fpppa, which is the mean density for 1996-2001;
- other passenger traffic grows in step with population growth based on the mean density of 0.07 fpppa for 1996-01;
- general aviation activity grows at 0.5% per annum, double the population growth;
- the Beech 1900D operates the Auckland sector throughout the forecast period;
- the ATR 72 operates the Christchurch sector throughout with B737s being introduced sometime after 2021;
- on the Wellington sector the Saab 340A (33 seats) is replaced in 2011 by a 45-50 seat aircraft (*eg* ATR42);
- other air transport movements assume a four seat aeroplane with a 75% load factor;
- the load factor for Auckland and Christchurch is 60%, for Wellington 65% and 75% for other destinations.

Table 23 summarises the medium forecast for passenger numbers and aircraft movements. We consider this to be the likely situation for Rotorua.

[49] Military movements averaged about 330 per year between 1996 and 2001.

By 2021 passenger numbers are forecast to be about 338,573 with 56% attributable to Christchurch, 26% to Wellington, 16% to Auckland and 2% to other locations. In all, this represents a 45% increase over the 2001 year passenger levels.

Table 23: **Rotorua: Passenger & Traffic Forecast**
(Medium Forecast)

		2001	*2006*	*2011*	*2016*	*2021*
Population - medium projection						
Rotorua District Council		67,300	69,300	70,800	72,100	73,300
Kawera District Council		7,400	7,100	6,700	6,200	5,800
Whakatane District Council		33,600	33,900	33,800	33,600	33,200
Opotiki District Council		10,100	10,500	10,800	11,200	11,600
Total district population		118,400	120,800	122,100	123,100	123,900
	5yr AAI	0.0%	0.4%	0.2%	0.2%	0.1%
Passengers						
Auckland	arr + dep	29,000	38,809	51,935	54,810	55,370
	fpppa	0.39	0.51	0.67	0.70	0.70
	5yr AAI	8%	7.6%	7.6%	1.4%	0.3%
Christchurch	arr + dep	127,100	140,329	154,934	171,060	188,864
	fpppa	1.07	1.16	1.27	1.39	1.52
	5yr AAI	1.8%	2.5%	2.5%	2.5%	2.5%
Wellington	arr + dep	75,500	86,976	87,912	88,632	89,208
	fpppa	0.64	0.72	0.72	0.72	0.72
	5yr AAI	-3%	3.6%	0.3%	0.2%	0.2%
Other	arr + dep	4,800	4,851	4,956	5,047	5,131
	fpppa	0.07	0.07	0.07	0.07	0.07
	5yr AAI	0.0%	0.3%	0.5%	0.5%	0.4%
Total	arr + dep	236,400	270,964	299,737	319,549	338,573
	fpppa	2.00	38.16	44.74	51.54	58.37
	5yr AAI	0.7%	3.5%	2.6%	1.6%	1.5%
Aircraft movements						
Air transport	annual	11,980	12,620	12,938	13,651	14,196
	daily	32	35	35	37	39
	move/16hr	2	2	2	2	2
	5yr AAI	-1.2%	2.2%	0.6%	1.3%	1.0%
GA ex Military	annual	16,680	17,101	17,533	17,976	18,430
	daily	46	47	48	49	50
	move/12hr	4	4	4	4	4
	5yr AAI	-10.0%	0.6%	0.6%	0.6%	0.6%
Total movements (exc Military)		28,660	29,721	30,471	31,626	32,626
	5yr AAI	-6.8%	0.9%	0.6%	0.9%	0.8%

Air Transport movements are forecast to increase from 10,752 in 2001 to about 14,200 by 2021. So that in 2021 there are likely to be an average of about 39 air transport movements per day. Rotorua airport has ample capacity to cater for this level of air transport movements at reduced capacity levels. The medium growth option results in greater air transport movements later in the forecast period than the high growth option.

For the medium forecast general aviation movements increase from 16,680 in 2001 to about 18,400, which is an increase of only 34%. This represents about 50 movements per day versus the present 46 movements.

5.11.3 Low Growth Forecast

The low growth forecast is based on the following assumptions:

- low population projections;
- Auckland passenger traffic grows at 3% per annum (half the average growth rate over the last six years) and then once the passenger traffic density has reached 0.65 fpppa grows in step with population;
- Christchurch passenger traffic grows at 1% per annum, half the average growth rate over the last six years;
- Wellington passenger traffic grows in step with population growth at a passenger traffic density of 0.7 fpppa being the lowest density during 1996-2001;
- other passenger traffic grows in step with population growth at the equivalent of 0.04 fpppa, which is the lowest passenger traffic density over the last six years;
- general aviation activity remains static;
- the Beech 1900D (19 seats), introduced in 2002, services the Auckland sector throughout the forecast period; a 60% load factor is assumed;
- the ATR 72 (66 seats) remains in service on the Christchurch sector; a 60% load factor is assumed;
- on the Wellington sector the Saab 340A (33 seats) is replaced by a 45-50 seat aircraft (*eg* ATR42) in 2011; a 65% load factor is assumed;
- other air transport movements assume a four seat aeroplane with a 75% load factor.

Table 24 summarises the low forecast passenger and traffic (aircraft movements) for the period 2001 to 2021. By 2021 we estimate that total passenger numbers would have grown from 234,000 in 2001 to 281,102 for 2021. Christchurch would account for 55% of the market, Wellington 28%, Auckland 16% and other destinations 1%.

If a low growth scenario eventuated we estimate that air transport movements would increase from 10,752 in 2001 to 11,300 by 2021 – that is a small increase from a mean of 29 movements per day to 31 movements per day. In the context of Rotorua airport capacity this is not a significant increase in air transport movements.

General aviation movements (excluding military aviation) remain static at 46 movements per day.

Table 24: **Rotorua: Passenger & Traffic Forecast**
(Low Forecast)

		2001	*2006*	*2011*	*2016*	*2021*
Population - low projection						
Rotorua District Council		65,900	66,500	66,600	66,300	65,900
Kawera District Council		7,200	6,700	6,100	5,400	4,700
Whakatane District Council		32,900	32,500	31,700	30,700	29,600
Opotiki District Council		9,900	10,100	10,200	10,300	10,500
Total district population		115,900	115,800	114,600	112,700	110,700
	5yr AAI	-0.5%	0.0%	-0.2%	-0.3%	-0.4%
Passengers						
Auckland	arr + dep	29,000	33,619	38,974	45,181	45,890
	fpppa	0.40	0.46	0.54	0.63	0.65
	5yr AAI	8%	3.8%	3.8%	3.8%	0.4%
Christchurch	arr + dep	127,100	133,583	140,397	147,559	155,086
	fpppa	1.10	1.15	1.23	1.31	1.40
	5yr AAI	1.8%	1.3%	1.3%	1.3%	1.3%
Wellington	arr + dep	75,500	81,060	80,220	78,890	77,490
	fpppa	0.65	0.70	0.70	0.70	0.70
	5yr AAI	-3%	1.8%	-0.3%	-0.4%	-0.4%
Other	arr + dep	4,800	2,660	2,664	2,652	2,636
	fpppa	0.07	0.04	0.04	0.04	0.04
	5yr AAI	0.0%	-13.7%	0.0%	-0.1%	-0.2%
Total	arr + dep	236,400	250,922	262,255	274,282	281,102
	fpppa	2.04	2.17	2.29	2.43	2.54
	5yr AAI	0.7%	1.5%	1.1%	1.1%	0.6%
Aircraft movements						
Air transport	annual	11,980	10,988	10,423	11,102	11,304
	daily	32	30	29	30	31
	move/16hr	2	2	2	2	2
	5yr AAI	-1.2%	-1.2%	-1.3%	1.6%	0.5%
GA ex Military	annual	16,680	16,680	16,680	16,680	16,680
	daily	46	46	46	46	46
	move/12hr	4	4	4	4	4
	5yr AAI	-10.0%	0.0%	0.0%	0.0%	0.0%
Total movements (exc Military)		28,660	27,668	27,103	27,782	27,984
	5yr AAI	-6.8%	-0.9%	-0.5%	0.6%	0.2%

5.12 Issues

5.12.1 Rotorua airport with its 1,375m runway has the capability and capacity to service turbo prop aeroplanes commonly and likely to be used in New Zealand for air transport operations. Rotorua does not presently have the capability and capacity to handle jet aircraft, specifically the B737-300 operated by Air New Zealand. For this reason the airport company has

decided to extend the runway to 1,805m. This will enable unrestricted, in terms of payload, domestic air services through Rotorua.

5.12.2 Rotorua airport, for a variety of reasons, is not situated in the most ideal of locations for an airport. While it presents few (or lesser) problems for turbo prop operations, jet aircraft operations are demanding because of the surrounding geography, more narrow than normal runway, the climatology of the area and its short runway. An extension to the runway will do little to alleviate the other problems, but it will help. Of particular concern are the obstacles presented by the clump of trees 1,200m to the north of the airport. If these are not permanently dealt to then, in our opinion, the airport will be unable to properly operate in the future – these trees will mean more than a loss of effectiveness.

5.12.3 History suggests that air services into Rotorua have always been a stop-start affair. In our opinion this is a result of the less than ideal operating environment and the nature of the demand for air transport. The district has fared better in terms of air service when two airlines competed head-on. This competition was essentially for the tourism market. So for the future it would seem that a buoyant tourism market is a prerequisite to good air services.

5.12.4 General aviation accounts for 60% of total aircraft movements, and has declined over the last 20 years. This may be just as well because the design and layout of Rotorua aerodrome does not lend itself to a mix of air transport and general aviation operations – simultaneous operations are prohibited. This means that there are frequent conflictions between general aviation and air transport operations. When sky diving is in operation air transport movements are reduced to seven movements per hour.

5.12.5 The optimum capacity of Rotorua airport is 15 to 18 movements per hour depending on the runway in use. The reduced capacity is 12 movements per hour – this is for non-precision approaches and instrument departures (in such conditions skydiving would not be possible and so the seven movements per hour is a spot capacity in good weather conditions). There is ample capacity at Rotorua. Present air transport movements are less than six per hour and general aviation does not exceed three movements per hour. Flying training 'touch and goes' are on average no more than four per hour.

5.12.6 Rotorua has reported an annual net profit after taxation that has averaged $242,000 over the last six years ($216,000 per year over the last three years). Shareholder value, however, has declined $620,000 over the last three years. Depending on the corporate objectives of the airport company this situation could be alarming (from a commercial perspective) or of some concern (from a transport infrastructure perspective).

5.12.7 The proposal to spend more than $16 million on airport developments can not be justified on normal commercial criteria and furthermore would not be supported by the requirements of the national air transport system. The investment represents 12 years total airport revenue or about 70 years net

profit. The proposed airport developments will be unable to be supported from aviation activities alone.

5.12.8 Rotorua airport has ample capacity to handle future air transport movements up to 2021 and beyond. This includes general aviation. *Table 25* summarises future (forecast) aviation activity.

Table 25: **Future Aviation Activity Rotorua**

		2001	*High Growth*	*Medium Growth*	*Low Growth*
Forecast year 2021					
Total passenger arr+dep	annual	236,400	409,376	338,573	281,102
Air transport movements	annual	11,980	10,542	14,196	11,304
	move/16hr	2.0	1.8	2.4	1.9
GA ex Military movements	annual	16,680	22,027	18,430	16,680
	move/12hr	3.8	5.0	4.2	3.8
Forecast year 2016					
Total passenger arr+dep	annual	236,400	372,607	319,549	274,282
Air transport movements	annual	11,980	12,409	13,651	11,102
	move/16hr	2.0	2.1	2.3	1.9
GA ex Military movements	annual	16,680	20,548	17,976	16,680
	move/12hr	3.8	4.7	4.1	3.8

5.13 Conclusions

5.13.1 In terms of airport capacity Rotorua has sufficient to cater for air transport operations and general aviation for the next 20 years and beyond. There are two issues, however, that question the ongoing viability of the present airport.

5.13.2 One of these issues is the need for and, if there is a need, the timing of extensions to the existing runway to cater for future air services. There is also the related question of paying for these extensions and the risk of over investing in airport facilities that may not be needed for some time.

5.13.3 The other is that the geographic location of Rotorua airport, like some other New Zealand airports is not ideal, certainly for jet aircraft operations. As well there is the longer term unresolved problem of obstacles presented by the trees located 1,200 to the north of the current airport.

6. Whakatane Airport

6.1 Airport Ownership

Whakatane airport is a joint venture partnership between the Whakatane District Council (WDC) and the Crown. The joint venture was established in 1962.

The airport authority in terms of the Airport Authorities Act is the WDC. The WDC also own the aerodrome at Galatea, which is operated by the Urewera Aero Club.

6.2 Airport Land

WDC advise that the land was actually 'set aside' in 1947. The official survey and the vesting of the land (pursuant to the Land Act 1948) did not take place until May 1958. The land was probably acquired by the Crown pursuant to the New Zealand Settlements Act 1863.

A public aerodrome licence was issued in 1960, the runway was sealed that year. The area of land vested in Council for aerodrome purposes is 230.50ha.

6.3 Airport Management

The airport is managed and operated by the WDC as a Local Authority Trading Enterprise (LATE). The manager of the airport is the Director Community Services, the LATE manager. The WDC's Works and Services Committee govern the activities of the airport.

All airport services are contracted out to the local Air New Zealand agent. So the WDC does not have a day-to-day involvement in the operation of the airport.

6.4 Corporate Objectives

The WDC strategic plan for 2001-2011 notes that:

> *Whakatane airport in 2011 will continue to be of strategic importance for scheduled and emergency services to the Eastern Bay of Plenty including expansion if demand warrants.*

A key issue for the WDC is to ensure that "the strategic importance of the airport(s) to the Eastern Bay of Plenty is recognised and maintained".

In its 2002 annual report the WDC noted that the *goal* of the WDC is to:

> *provide and maintain public airports having regard to the volume and nature of the traffic using them in accordance with Council's Asset Management Plan.*

The Airport Asset Management Plan (December 1998) notes that:

> *The purpose of airport assets is to provide a sustainable, safe, convenient, comfortable and cost effective airport for the movement of people, goods and vehicles throughout the Whakatane District.*

The financial objective is to operate and maintain the airport assets within an operational budget, which excludes depreciation and corporate (WDC) overheads.

It is evident that the WDC have a not-for-profit corporate objective for Whakatane airport. The airport is seen as an important component of the district's economic infrastructure.

6.5 Capability

Whakatane airport has a 1,280m runway with a width of 30.5m and meets CAA requirements or standards. The WDC as the operator is not certificated under NZCAR Part 139 – certification is required to serve scheduled (regular) air transport operations with aeroplanes of 30 or more passenger seats. Therefore Whakatane is limited to scheduled air services by aircraft of less than 30 seats. Non scheduled air transport services by larger aircraft are, however, permitted. In recent months the 19 seat Beech 1900D replaced the 15 seat Bandeirante and 19 seat Metroliner III, which had previously served Whakatane.

The Beech 1900D does not have any payload for operational limitations operating into or out of Whakatane unless the ambient temperature is above 30°C and there is no wind.

The 33 seat Saab 340A can also effectively operate into and out of Whakatane but because of an obstruction about 9.5km to the east of the airport there is up to a 110kg payload penalty (a little more than one passenger) for take offs on runway 09.

There are no air traffic control services at Whakatane. A flight information service was provided at Whakatane until December 1988 and since then aerodrome operations have been conducted using standard procedures for unattended aerodromes. Air transport operations are supported by two ground-based navigation aids (NDB and DME) which enable non precision instrument approaches to be made in adverse weather conditions.

The obstacle limitation surface (OLS) for Whakatane should meet the requirements for an aerodrome reference code (ARC) number of 3C (for the Saab 340, Beech 1900D).

The aerodrome facilities at Whakatane are ample to support domestic air transport services presently serving Whakatane.

6.6 Aerodrome Restrictions

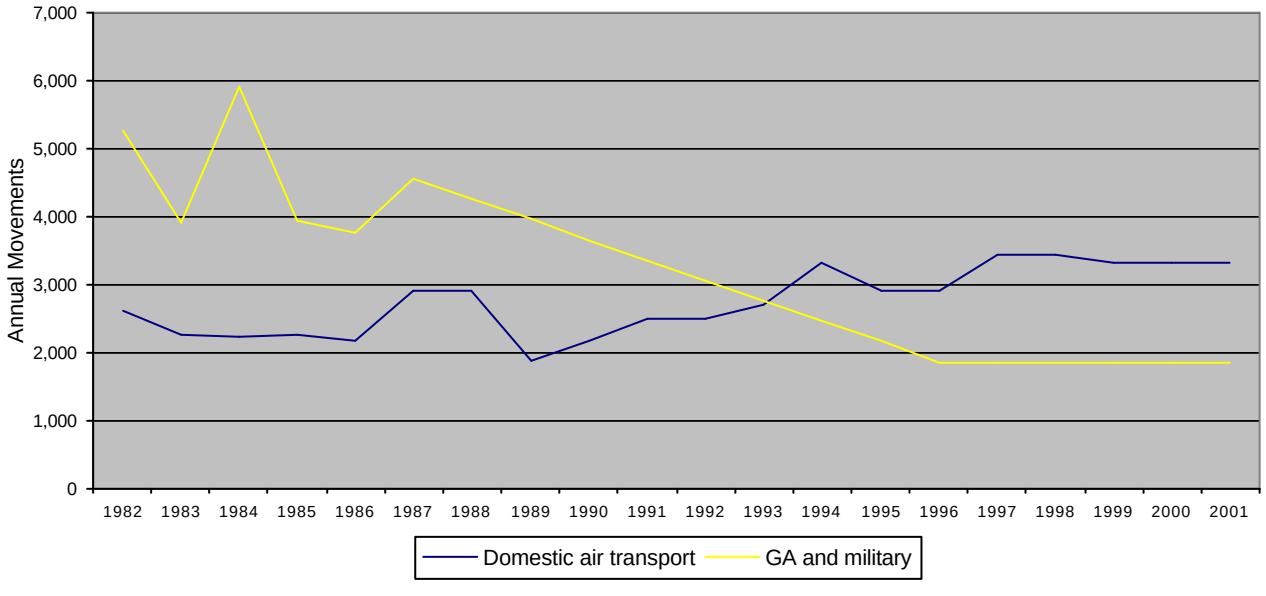
There are no operational restrictions concerning Whakatane aerodrome.

The prevailing wind direction at the airport is south to south-west with north-west winds more frequent in the afternoons. Consequently there can be appreciable crosswinds from time-to-time. Wind gusts over 50kts occur about once every year. Fog occurs on average 20 days a year but seldom restricts flying for any length of time, usually clearing by 1000hrs.

6.7 Airport Operations

Diagram 9 illustrates the trend in aircraft movements for domestic air transport and for general aviation plus military aviation. Since 1997 air transport movements have been about 3,300 to 3,400 per year and are presently at their highest level during the past 20 years. General aviation activity has steadily declined from the levels of 4,000 to 5,000 movements per year in the early 1980's to an estimated 1,800 movements per year. With the departure of flight information services previously provided by the Department of Civil Aviation no records of general aviation movements have been kept. Accordingly we have estimated these from discussions with WDC and people employed at the aerodrome. It is likely that we have underestimated these movements and they do not include microlight activity.

Diagram 9: **Whakatane Aircraft Movements 1982 - 2001**



6.7.1 Air Transport

Whakatane airport was constructed in the early 1960s (1962?) to support Fokker Friendship F27 operations. F27s (48 seats) operated daily services to Auckland, Wanganui and Wellington until 1989 – when they were replaced by the 16 seat Bandeirante and the 19 seat Metroliner III. Since then Whakatane has been serviced

by up to four (and on some days five) services per day to and from Auckland. Throughout, Whakatane has been served by NAC and then Air New Zealand (Eagle Air). This year the Bandeirante was replaced by the Beech 1900D and the Metroliner III will be withdrawn shortly.

In recent years Whakatane has served up to 27,600 passenger arrivals and departures per year – about 95% fly to and from Auckland on scheduled services. There are an estimated 1,000 to 1,600 passengers that fly to or from Whakatane in charter aircraft. *Table 26* summarises air transport passenger numbers over the last six years. These numbers have been estimated using a variety of sources and we consider them to be quite accurate. As a general comment, the growth in population and number of passengers has been more or less static over the last six years. Nevertheless, the traffic density (flights per person per annum) for the Auckland market is 0.6 fpppa, which is significantly higher than that for Tauranga and Rotorua, probably reflecting the increased road distance (301km versus 210km for Tauranga and 235km for Rotorua). The Auckland market mainly caters for business travellers.

Table 26: **Whakatane Route Analysis**

	1996	*1997*	*1998*	*1999*	*2000*	*2001*
Population						
Whakatane District Council	33,900	34,100	34,100	33,900	33,700	34,300
Opotiki District Council	9,600	9,660	9,760	9,830	9,910	10,300
Total	43,500	43,760	43,860	43,730	43,610	44,600
Annual growth		0.6%	0.2%	-0.3%	-0.3%	2.3%
5 year AAI					0.1%	0.5%
Auckland						
Arrivals & departures	26,000	26,000	26,000	26,000	26,000	26,000
Annual growth		0.0%	0.0%	0.0%	0.0%	0.0%
5 year AAI					0.0%	0.0%
6 year AAI						0.0%
fpppa	0.60	0.59	0.59	0.59	0.60	0.58
6 year fpppa						0.59
Other						
Arrivals & departures	1,400	1,300	1,200	1,000	1,500	1,600
Annual growth		-7%	-8%	-17%	50%	7%
5 year AAI					1.7%	5.3%
6 year AAI					0.0%	2.7%
fpppa	0.032	0.030	0.027	0.023	0.034	0.036
6 year fpppa						0.030
Total All						
Arrivals & departures	27,400	27,300	27,200	27,000	27,500	27,600
Annual growth		-0.4%	-0.4%	-0.7%	1.9%	0.4%
5 year AAI					0.1%	0.3%
6 year AAI						0.1%
fpppa	0.63	0.62	0.62	0.62	0.63	0.62
6 year fpppa						0.62
Auckland market	95%	95%	96%	96%	95%	94%
Other markets	5%	5%	4%	4%	5%	6%
Total All	100%	100%	100%	100%	100%	100%

In terms of the national air transport system and airline network planning, Whakatane is not important and ranks with Kaitaia, Whangarei and Timaru.

Two non scheduled (charter or air taxi) operators provide services to Gisborne and Rotorua plus scenic flights to White Island. They fly single engine Cessna 172 aircraft and provide daily services on demand.

Air Transport demands are the equivalent of four flights per day, generally the minimum required frequency per day for an operator to provide regular services over relatively short routes unless the airport is en-route, that is on the rim of a hub and spoke operation.[50] If Whakatane's demand fell much below present levels (say to 20,000 to 22,000 passengers per year) then scheduled services may not become viable with the type of aircraft operated by Air New Zealand and Origin Pacific.

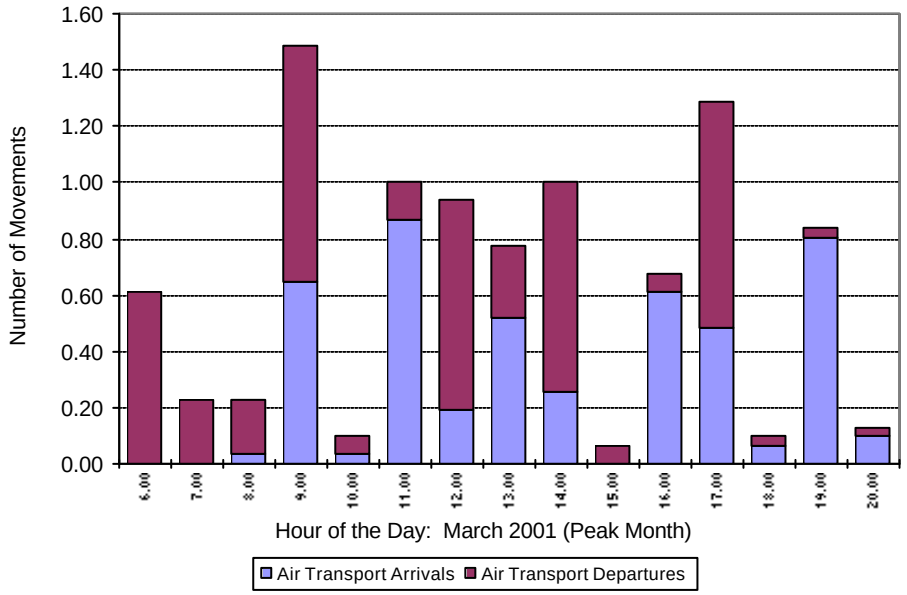
In the early 1980s annual air cargo quantities were about 60 tonnes per year. Today virtually no air cargo is loaded or unloaded at Whakatane.

6.7.2 General Aviation

The Whakatane Flying Club operates ten microlight aircraft (their movements are excluded from diagram 9). A topdressing aeroplane (Turbo Fletcher) is based at Whakatane airport and there are about six privately owned aircraft including other microlights that operate from Whakatane. In all there is not a great deal of general aviation activity but the aerodrome is not dormant.

6.8 Airport Capacity

Diagram 10: **Whakatane Hourly Movements**



[50] There are, as always, exceptions to this such as the single flight per day to and from Kaitaia.

The optimum airport capacity for Whakatane is 15 movements per hour, the reduced capacity will be in the order of 10 movements per hour.

Diagram 10 depicts the average hourly movements for air transport aircraft during the month of March 2001, which represented the maximum number of movements in any one month over the past five years. It can be seen that hourly movements are less than two. Thus, as we would expect, there is ample capacity at Whakatane airport.

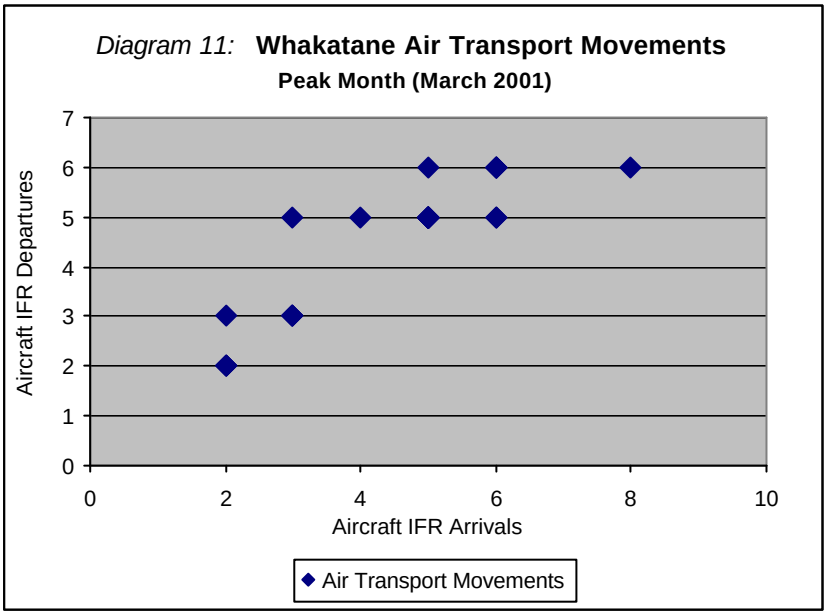


Diagram 11 depicts the number of air transport arrivals and departures per day at Whakatane. There are no more than eight arrivals in any one day and no more than six departures. Air New Zealand aircraft remain overnight at Whakatane on week days and hence there tends to be more arrivals than departures for a particular day. The higher number of daily movements represents week days and the smaller numbers weekends. Whakatane has the capacity to handle over 200 movements per day (*eg* 100 arrivals and 100 departures).

6.9 Financial Performance

Whakatane airport gains income from both aviation and non aviation (grazing) sources. Table 27 summarises the financial performance over the last five years.

Including the non-aviation revenue the airport makes a small financial surplus on a total capital employed of $650,000 or so. The economic value added (EVA), is a measure of the increase or decrease in the owners value or interest in the business, that is the airport and its operations. In each year of operation the EVA has been negative and so there has been an economic loss in value to the WDC. On a cumulative basis this loss has amounted to $256,000 during the period 1997 to 2001.

It is evident that without the strictly non-aviation revenue the loss in EVA is considerably greater – we have calculated that over the five year period it would be a loss in value of $486,000.

Table 27 **Whakatane Airport Authority: Financial Performance (including non aviation activities)**

	1997 *$000s*	*1998* *$000s*	*1999* *$000s*	*2000* *$000s*	*2001* *$000s*
Aviation Revenue	92	92	92	86	92
Non-aviation revenue	47	49	47	47	46
Total revenue	138	141	139	133	137
Total expenses	140	142	135	141	117
EBIT	-1	-1	4	-7	21
Taxation	6	6	6	3	13
Net Profit after taxation	12	12	12	5	27
Capital Employed					
Equity	634	646	658	666	682
Debt	0	0	0	0	0
Total capital employed	634	646	658	666	682
Economic Added Value (EVA)	-43	-50	-51	-70	-42
Cumulative EVA	-43	-93	-144	-215	-256

We note that all assets except land are recorded at historic cost less a depreciation charge. The value of the Crown's investment is $216,000.

6.10 Future Aviation Requirements

Three cases have been considered; high growth, medium growth and low growth.

6.10.1 High Growth Forecast

The high growth forecast is based on the following assumptions:

- high population projection provided by EBOP and Statistics New Zealand;
- Auckland passenger traffic grows at the rate of 2.5% per annum, which is twice the average annual increase for the last 20 years and then once the passenger traffic density reaches 0.66 fpppa (10% above the historical levels) passenger traffic grows in step with population growth thereafter;
- other passenger traffic grows in step with population growth at the mean passenger traffic density of 0.044 fpppa, which is 10% higher than the highest density reached between 1996 and 2001;

- general aviation activity grows at 1% per annum, twice the average population growth rate;
- the Beech 1900D (19 seats) introduced in 2002, services the Auckland sector throughout the forecast period; a 6% load factor is assumed;
- other air transport movements assume a four seat aeroplane with a 75% load factor.

Table 28 summarises the high forecast passenger and traffic (aircraft movements) for the period 2001 to 2021. By 2021 we estimate that total passenger numbers will have grown from 27,600 in 2001 to 34,848 for 2021 if the high growth assumptions eventuated. Auckland would account for 94% of the market and other destinations 6%.

For the high growth case air transport movements would increase from 3,328 in 2001 to 3,592 in 2021: that is from a mean of 9 movements per day to 10 movements per day, which is 0.6 movements per hour over a 16 hour operating day. Thus with a maximum capacity of 15 movements per hour Whakatane airport has ample capacity to cater for the high growth scenario.

Table 28: **Whakatane Passenger & Traffic Forecast**
(High Forecast)

		2001	*2006*	*2011*	*2016*	*2021*
Population - high projection						
Whakatane District Council		34,300	35,200	35,900	36,400	36,800
Opotiki District Council		10,300	10,900	11,500	12,000	12,700
Total district population		44,600	46,100	47,400	48,400	49,500
	5yr AAI	0.5%	0.7%	0.6%	0.4%	0.4%
Passengers						
Auckland	arr + dep	26,000	29,417	31,284	31,944	32,670
	fpppa	0.58	0.64	0.66	0.66	0.66
	5yr AAI	0.0%	3.1%	1.6%	0.5%	0.6%
Other	arr + dep	1,600	2,028	2,086	2,130	2,178
	fpppa	0.04	0.04	0.04	0.04	0.04
	5yr AAI	5.3%	6.1%	0.7%	0.5%	0.6%
Total	arr + dep	27,600	31,445	33,370	34,074	34,848
	fpppa	0.62	0.68	0.70	0.70	0.70
	5yr AAI	0.3%	3.3%	1.5%	0.5%	0.6%
Aircraft movements						
Air transport	annual	3,328	3,257	3,439	3,512	3,592
	daily	9	9	9	10	10
	move/16hr	0.6	0.6	0.6	0.6	0.6
	5yr AAI	-0.8%	-0.5%	1.4%	0.5%	0.6%
GA ex Military	annual	1,862	1,957	2,057	2,162	2,272
	daily	5	5	6	6	6
	move/12hr	0.4	0.4	0.5	0.5	0.5
	5yr AAI	0.0%	1.3%	1.3%	1.3%	1.3%
Total movements (exc Military)		5,190	5,214	5,496	5,674	5,864
	5yr AAI	-0.5%	0.1%	1.3%	0.8%	0.8%

General aviation movements (excluding military aviation) increase from an estimated 1,862 in 2001 to about 2,300 in 2021. This is still a relatively low level of activity equating to about six movements per day.

6.10.2 Medium Growth Forecast

The medium growth forecast is based on the following assumptions:

- medium population projections;
- Auckland passenger traffic grows at 1.25% per annum, the average annual growth rate over the last 20 years until the passenger traffic density (fpppa) reaches 0.66 (10% above historical densities) and thereafter grows in step with the population;
- other passenger traffic grows in step with population growth based on the average traffic density of 0.03 for the 1996-2001 period;
- general aviation activity grows at 0.5 per annum, which is twice the average population growth;
- the Beech 1900D operates the Auckland sector throughout the forecast period;
- other air transport movements assume a four seat aeroplane with a 75% load factor;
- the load factor for Auckland is 60 and 75% for other destinations.

Table 29 summarises the medium forecast for passenger numbers and aircraft movements. We consider this to be the likely situation for Whakatane.

By 2021 passenger numbers are forecast to be about 30,900 with 96% attributable to Auckland and 4% to other locations. In all, this represents an 11% increase over the 2001 year passenger levels.

Air transport movements are forecast to decrease from 3,328 in 2001 to about 3,042 by 2021. This fall is due to 19 seater aircraft being used exclusively on this route replacing the 15 seat Bandeirante.

For the medium forecast general aviation movements increase from an estimated 1,862 in 2001 to a little over 2,000 movements. This represents about six movements per day.

So overall movements are more or less static being an estimated 5,190 for 2001 and 5,099 in 2021.

Table 29: **Whakatane Passenger & Traffic Forecast**
(Medium Forecast)

		2001	*2006*	*2011*	*2016*	*2021*
Population - medium projection						
Whakatane District Council		33,600	33,900	33,800	33,600	33,200
Opotiki District Council		10,100	10,500	10,800	11,200	11,600
Total district population		43,700	44,400	44,600	44,800	44,800
	5yr AAI	-0.03%	0.32%	0.09%	0.09%	0.00%
Passengers						
Auckland	arr + dep	26,000	27,666	29,436	29,568	29,568
	fpppa	0.59	0.62	0.66	0.66	0.66
	5yr AAI	0.0%	1.6%	1.6%	0.1%	0.0%
Other	arr + dep	1,600	1,332	1,338	1,344	1,344
	fpppa	0.04	0.03	0.03	0.03	0.03
	5yr AAI	5.3%	-4.5%	0.1%	0.1%	0.0%
Total	arr + dep	27,600	28,998	30,774	30,912	30,912
	fpppa	0.63	0.65	0.69	0.69	0.69
	5yr AAI	0.3%	1.2%	1.5%	0.1%	0.0%
Aircraft movements						
Air transport	annual	3,328	2,871	3,028	3,042	3,042
	daily	9	8	8	8	8
	move/16hr	0.6	0.5	0.5	0.5	0.5
	5yr AAI	-0.8%	-3.6%	1.3%	0.1%	0.0%
GA ex Military	annual	1,862	1,909	1,957	2,007	2,057
	daily	5	5	5	5	6
	move/12hr	0.4	0.4	0.4	0.5	0.5
	5yr AAI	0.0%	0.6%	0.6%	0.6%	0.6%
Total movements (exc Military)		5,190	4,780	4,985	5,048	5,099
	5yr AAI	-0.5%	-2.0%	1.1%	0.3%	0.2%

6.10.3 Low Growth Forecast

The low growth forecast is based on the following assumptions:

- low population projections;
- Auckland passenger traffic grows at 0.75% per annum, half the 20 year annual average growth, until the flights per person per year reach 0.6 (the historical density) and thereafter passenger traffic grows in step with population growth;
- Other passenger traffic grows in step with population growth at the equivalent of 0.025 fpppa, which is the lowest passenger traffic density over the last six years;
- General aviation activity declines in step with the population;

- the Beech 1900D (19 seats), introduced in 2002, services the Auckland sector throughout the forecast period; a 60% load factor is assumed;
- other air transport movements assume a four seat aeroplane with a 75% load factor;

Table 30: **Whakatane Passenger & Traffic Forecast**
(Low Forecast)

		2001	*2006*	*2011*	*2016*	*2021*
Population - low projection						
Whakatane District Council		32,900	32,500	31,700	30,700	29,600
Opotiki District Council		9,900	10,100	10,200	10,300	10,500
Total district population		42,800	42,600	41,900	41,000	40,100
	5yr AAI	-0.6%	-0.1%	-0.3%	-0.4%	-0.4%
Passengers						
Auckland	arr + dep	26,000	26,990	27,654	27,060	26,466
	fpppa	0.61	0.63	0.66	0.66	-0.66
	5yr AAI	0.0%	0.9%	0.6%	-0.5%	-0.6%
Other	arr + dep	1,600	1,065	1,048	1,025	1,003
	fpppa	0.04	0.03	0.03	0.03	0.03
	5yr AAI	5.3%	-9.7%	-0.4%	-0.5%	-0.6%
Total	arr + dep	27,600	28,055	28,702	28,085	27,469
	fpppa	0.64	0.66	0.69	0.69	0.69
	5yr AAI	0.3%	0.4%	0.6%	-0.5%	-0.6%
Aircraft movements						
Air transport	annual	3,328	2,723	2,775	2,715	2,656
	daily	911.8%	745.9%	760.3%	743.9%	727.6%
	move/16hr	0.6	0.5	0.5	0.5	0.5
	5yr AAI	-0.8%	-4.9%	0.5%	-0.5%	-0.6%
GA ex Military	annual	1,862	1,843	1,825	1,807	1,789
	daily	5	5	5	5	5
	move/12hr	0.4	0.4	0.4	0.4	0.4
	5yr AAI	0.0%	-0.2%	-0.2%	-0.2%	-0.2%
Total movements (exc Military)		5,190	4,566	4,600	4,522	4,445
	5yr AAI	-0.5%	-3.2%	0.2%	-0.4%	-0.4%

Table 30 summarises the low forecast passenger and traffic (aircraft movements) for the period 2001 to 2021. By 2021 we estimate that total passenger numbers would have fallen slightly from 27,600 in 2001 to 27,469 in 2021. Auckland would account for 94% of the market and other destinations 6%.

If a low growth scenario eventuated we estimate that air transport movements would decrease from 3,328 in 2001 to 2,656 by 2021 – that is a decrease of about 700 movements per year.

General aviation movements (excluding military aviation) would also decrease from about 1,900 in 2001 to about 1,800 in 2021.

So overall while passenger numbers remain more or less static during the forecast period there is a reduction in the number of aircraft movements.

6.11 Issues

6.11.1 Whakatane airport has relatively good facilities for air transport operations and has no operational restrictions relating to obstacles, airspace or climatology. The airport can cater for scheduled air transport services with aircraft of up to 30 passenger seats. Saab 340A (33 seats) could therefore not operate regular services unless the airport was certificated under NZCAR Part 139.

6.11.2 The non-aviation revenue from grazing subsidises the airport operation to the tune of about $47,000 per year or 34% of its revenue. In terms of economic value added (EVA) the economic loss in value to the WDC is in the order of $50,000 per year.

6.11.3 Present passenger numbers measured by arrivals and departures is about 26,000 per year and this number has been static over the last six years. If passenger numbers fell to 20-22,000 per year then Beech B1900 services may not be commercially viable – at best the frequency would reduce.

6.11.4 There is ample capacity at Whakatane for future air transport movements. Even at high growth rate assumptions air transport movements are estimated to be only 264 movements greater than they are today. For all other growth scenarios air transport movements decline. *Table 31* summarises the situation.

Table 31: **Future Aviation Activity Whakatane**

		2001	*High Growth*	*Medium Growth*	*Low Growth*
Forecast year 2021					
Total passenger arr+dep	annual	27,600	34,848	30,912	27,469
Air transport movements	annual	3,328	3,592	3,042	2,656
	move/16hr	0.6	0.6	0.5	0.5
GA ex Military movements	annual	1,862	2,272	2,057	1,789
	move/12hr	0.4	0.5	0.5	0.4
Forecast year 2016					
Total passenger arr+dep	annual	27,600	34,074	30,912	28,085
Air transport movements	annual	3,328	3,512	3,042	2,715
	move/16hr	0.6	0.6	0.5	0.5
GA ex Military movements	annual	1,862	2,162	2,007	1,807
	move/12hr	0.4	0.5	0.5	0.4

6.12 Conclusions

6.12.1 Whakatane can more than provide for the air transport requirements of the Eastern Bay of Plenty districts.

6.12.2 Non-aviation activities subsidise the airport operation. In terms of economic value there is an annual loss of about $50,000 to the WDC.

7. The Issues

7.1 National Air Transport System

7.1.1 Air transport links between the Bay of Plenty and Wellington are necessary, those to and from Auckland desirable and the link to Christchurch highly desirable for tourism.

7.1.2 The airlines and other aircraft operators that provide commercial air transport services largely determine the demand for airport services and facilities. Attempts to attract airlines and air transport services by the provision of greater or more airport services will fail. Airlines make the decisions that impact on aerodromes and airports. The requirement for airport services and facilities is a derived demand.

7.1.3 Bay of Plenty accounts for about 5% of total New Zealand domestic air transport movements and about 4% of domestic passengers. This is one percent less than it was 15 years ago. Nevertheless over the last 10 years air transport movements at Tauranga have increased at a rate greater than the regional and national average while those for Rotorua and Whakatane have increased at less than these averages.

7.1.4 The Bay of Plenty represents a quite small part of the national (domestic) air transport system. Its contribution to this system has declined over the past 15 years. There are some routes to and from the Bay of Plenty region that are of doubtful value or importance to the larger airlines. But the Wellington links and the Rotorua-Christchurch sector are important.

7.1.5 General aviation within the Bay of Plenty region represents about 10% of total general aviation in New Zealand. This proportion fell to about 7% in the early 1990s and since then increased back up to 10%, which has been solely attributable to the growth in general aviation at Tauranga.

7.2 Regional Airports

7.2.1 Rotorua and Tauranga are certificated aerodromes able to serve scheduled air transport operations with aeroplanes of 30 or more passenger seats. Whakatane is a non-certificated aerodrome and is limited to serving aeroplanes with less than 30 passenger seats, like the Beech 1900D, Jetstream 32 and Metroliner III.

7.2.2 Airports are required to be operated and managed as a commercial undertaking. But this does not mean that they are required to be operated for profit. Airports can be operated as not-for-profit organisations. Thus an airport can either be managed as a business for profit or as a not-for-profit organisation.

7.2.3 As a general comment Bay of Plenty airports lack credible data on their operations and this makes airport planning less reliable.

7.2.4 The economic impact of the three airports in the Bay of Plenty region is in the order of $42 million per year, 70% of this is attributable to Rotorua airport. This compares with the $1.5 billion per year economic impact that the Port of Tauranga has on the region and an additional $1.8 billion per year for the rest of New Zealand. There is a loss in the economic value added (EVA™) for the three airports of about $6.2 million over the last five years of which almost 90% is attributable to Tauranga. The economic impact of the airports needs to be measured against this loss in EVA™.

7.3 Tauranga Airport

7.3.1 A review and clarification of the *raison d'être* for Tauranga airport will be to the advantage of the owner, TDC, and help to ensure that the airport will in the long run best meet the requirements of the Tauranga and Western Bay of Plenty districts and the air transport system.

7.3.2 Tauranga airport has the operational capability to handle all types of aircraft likely to be used for domestic air transport up to 2021 and well beyond (2051).

7.3.3 The existing airspace conflict between aerodrome requirements and those of the Port of Tauranga are certain to be of future concern to both the airport and the seaport. At some stage during the next 20 years the Port of Tauranga is likely to be looking to extend the wharf at Sulphur Point to the south. So at some future date a choice will need to be made in favour of the airport or in favour of the seaport. Such a decision could only sensibly be made on the basis of the relative costs and benefits to economic and social development of the district and region (and nation) as a whole.

7.3.4 Tauranga has three scheduled daily air services: to Auckland, Hamilton and to Wellington. The Tauranga-Auckland link is not considered to be a vital or important component of the domestic network and competes head on with road transport. The Tauranga-Wellington link is important and the airlines see this sector as having growth potential. Overall, in terms of the national air transport system it is the Tauranga-Wellington sector that is of importance.

7.3.5 Tauranga is currently the third busiest general aviation aerodrome in New Zealand. General aviation accounts for 85% of air movements at Tauranga. The future growth in general aviation is likely to be of particular concern to air transport operations as general aviation could affect their effectiveness.

7.3.6 Tauranga airport, in terms of its runway use, has an optimum and reduced capacity of 15 movements (take offs and landings) per hour. Present air transport movements do not exceed four per hour, less than 27% of the airport capacity. General aviation movements do not exceed six per hour but there can be up to 22 'touch and goes' per hour.

7.3.7 There has been a loss in the economic value to the owner (TDC) of Tauranga airport of between $5.5 and $7.3 million over the last three years. The size of this economic loss depends on whether the non aviation activities are considered to be properly part of the airport operations.

7.3.8 Tauranga airport has ample capacity to cater for air transport requirements up to and well beyond 2021. The issue for Tauranga is the growth in general aviation activity. Even at a high growth rate air transport movements average less than three movements per hour and would peak at about six movements by 2021; compared to an optimum capacity of 15 movements per hour this is still low. The concern is the level of general aviation movements. By 2021 general aviation movements are likely to be in the order of 140,000 movements per year, which equates to an average of 32 movements per hour with peaks possibly in the order of 50 per hour. If the high growth scenario eventuates these levels will be reached before 2016. Unless air transport operations are given strict priority at Tauranga there will be a loss of efficiency.

7.3.9 Land for commercial and industrial purposes in the Western Bay of Plenty is in short supply and 2013 will deplete reserves of land. Land that will produce employment is important to the economic and social development of the district and also the Bay of Plenty region as a whole. Tauranga aerodrome occupies 225 hectares that would provide for the land needs past 2021. The question of best land use and whether the aerodrome should be forfeited to other purposes is a matter that involves more than civil aviation and air transportation and is best determined in an economic cost-benefit framework. We note, however, that land ownership issues involving the airport are complex.

7.4 Rotorua Airport

7.4.1 Rotorua airport with its 1,375m runway has the capability and capacity to service turbo prop aeroplanes commonly and likely to be used in New Zealand for air transport operations over the next 30 years or so. Rotorua does not presently have the capability and capacity to handle jet aircraft other than BAe146s; specifically it cannot handle the B737-300 operated by Air New Zealand. For this reason the airport company has decided to extend the runway to 1,805m. This will enable unrestricted, in terms of payload, domestic air services through Rotorua. But the question remains whether jet aircraft will use Rotorua. In our opinion this is unlikely within the next 15 years or so.

7.4.2 Rotorua airport, for a variety of reasons, is not situated in the most ideal location for an airport. While it presents few (or lesser) problems for turbo prop operations, jet aircraft operations are demanding because of the surrounding geography, more narrow than normal runway, the climatology of the area and its short runway. An extension to the runway will do little to alleviate the other problems, but it will help. Of concern are the obstacles presented by the clump of trees 1,200m to the north of the airport. If these are not permanently dealt to then, in our opinion, the airport will be unable to

properly operate in the future – these obstacles will create more than a loss of effectiveness.[51]

7.4.3 History suggests that air services into Rotorua have always been a stop-start affair. This is a result of the less than ideal operating environment and the nature of the demand for air transport. The district has fared better in terms of air services when two airlines competed head-on. This competition was for the tourism market. So for the future it is evident that a buoyant tourism market is a prerequisite to good air services and vice-versa. Local tourism interests would like to see jet services into Rotorua. A regular jet service is unlikely in the next 15 years or so unless a new entrant airline introduces one. In which case existing airlines would match the service.

7.4.4 The design and layout of Rotorua aerodrome does not lend itself to a mix of air transport and general aviation operations – simultaneous operations are prohibited. This means that there are frequent conflictions between general aviation and air transport operations. When sky diving is in operation air transport movements are reduced to seven movements per hour, which is manageable.

7.4.5 The optimum capacity of Rotorua airport is 15 to 18 movements per hour depending on the runway in use. The reduced capacity is 12 movements per hour – this is for non-precision approaches and instrument departures. Present air transport movements are less than six per hour and general aviation does not exceed three movements per hour. Flying training 'touch and goes' are on average no more than four per hour. There is ample capacity at Rotorua.

7.4.6 Rotorua has reported an annual net profit after taxation that has averaged $242,000 over the last six years. Shareholder value, however, has declined $620,000 over the last three years. Depending on the corporate objectives of the airport company this situation could be either alarming (from a commercial perspective) or merely of some concern (from a transport infrastructure perspective).

7.4.7 The proposal to spend more than $16 million on airport developments at Rotorua can not be justified on normal commercial criteria. The requirements of the national air transport system would not support these developments. The proposed airport developments will be unable to be supported from aviation activities alone.

7.4.8 Rotorua airport has ample capacity to handle future (turbo prop) air transport movements up to 2021 and beyond. This includes general aviation.

[51] We understand that a solution has now been arrived at for the next 20 years or so.

7.5 Whakatane Airport

7.5.1 At Whakatane the non-aviation revenue from grazing subsidises the airport operation to the tune of about $47,000 per year which is 34% of its revenue. In terms of economic value added (EVA™) the economic loss in value to the WDC is in the order of $50,000 per year.

7.5.2 Present passenger numbers measured by arrivals and departures is about 26,000 per year and this number has been static over the last six years. If passenger numbers fell to 20-22,000 per year then Beech B1900 services may not be commercially viable – at best the frequency would reduce.

7.5.3 There is more than ample capacity at Whakatane for future air transport movements.

7.6 The Main Issues

7.6.1 The demand for airport infrastructure is a derived demand that relies on the fleet and network plans of the airlines. That is, the decisions made by airlines impact on airport facilities and services they need. Airports, however, carry the risk of over investment. Unless airports closely monitor trends in aircraft movements and passengers it is likely that they could over invest in facilities that are not needed. The consequence of this would at least be of some concern to the efficiency of the regional air transport system and possibly loss of effectiveness.

7.6.2 It can be argued that overall the Bay of Plenty region is becoming less significant to the national air transport system but is an important centre for general aviation. If this is not properly planned for then it is possible that general aviation could be of some concern for the airports in providing airport requirements for air transport.

7.6.3 The three airports in the Bay of Plenty region should clarify their *raison d'être* and in turn review, with advantage, their corporate objectives. Unless this is done it is likely that the airports may suffer somewhat more than merely a loss of efficiency and effectiveness.

7.6.4 We have analysed the financial statements of the airports as commercial enterprises. This was done on two counts. Rotorua and Tauranga considered themselves as 'true' commercial enterprises while Whakatane saw their airport as more of a public amenity (or good) to the district but adopted commercial practice in ts management. The second count was simply that airport owners, the district councils, could expect to receive a financial return at least equal to that, which would be received elsewhere. All airports failed to provide their owners with an adequate financial return and each sustained an economic loss in value over the years examined. In the case of Tauranga the loss would be regarded with concern, as being serious, except that much of that economic loss is due to the revaluation of assets at the time the TDC acquired total ownership.

7.6.5 Non aviation activities subsidise the Whakatane airport operations and in terms of economic value there is an *overall* annual loss of about $50,000 to the WDC. At Tauranga, for the three years post acquisition, the economic loss in value of the airport totals $5.5 million – and this includes significant non-aviation revenue. The evaluation of the economic performance for Rotorua airport over the last three years shows that there has been a loss in shareholder value of $620,000 for this period.

7.6.6 The economic impact of the three regional airports outside of the transportation benefits is in the order of $52 million, which when reduced by the loss in EVA™ from their financial operation suggests that the overall economic impact on the region is currently about $50 million per year.

7.6.7 Tauranga airport has the capability and capacity to provide for air transport operations for the next 20 years and well beyond. General aviation activity could interfere with this from 2014 onwards and so will require continuation of the operating procedures and priorities favouring air transport.

7.6.8 In terms of the economic and social development of the Tauranga and Western Bay of Plenty districts and also the Bay of Plenty region the main issues concerning Tauranga aerodrome are questions of airspace and land use and priorities.

7.6.9 A cost-benefit analysis would resolve whether it would be in the interests of the surrounding districts and the greater Bay of Plenty region to relocate Tauranga aerodrome and airport. Such an analysis would establish whether the net benefits arising from future seaport development and the additional commercial and industrial land is greater than any net economic loss in transportation benefits arising from a relocation. It is possible that if a relocation of the aerodrome (airport) resulted in the development of a regional airport there could be net benefits to the Western Bay of Plenty, Tauranga districts as well as to the region as a whole. These benefits would arise from better air services (more frequent), the use of larger aeroplanes on some sectors and the overall facilities and services of a bigger airport. The establishment of a regional airport would ensure airlines continued to service the region. Separate consideration would need to be given to general aviation, which at Tauranga has become an important part of the regional and national civil aviation system.

7.6.10 In terms of airport capacity Rotorua has sufficient to cater for air transport operations and general aviation for the next 20 years and beyond. There are two issues, however, that question the ongoing viability of the present airport. One of these issues is the need for and, if there is a need, the timing of extensions to the existing runway to cater for future air services. There is also the related question of paying for these extensions. The recently introduced passenger charge of $5 per passenger will provide less than half the indicative amount to service the proposed $16 million expenditure. The other issue is that the geographic location of Rotorua airport is not ideal, certainly for jet aircraft operations. As well there is the longer term problem of obstacles presented by the trees located 1,200 to the north of the current airport.

7.6.11 Whakatane can more than provide for the air transport requirements of the Eastern Bay of Plenty districts.

7.6.12 Overall the three airports in the Bay of Plenty region each have the capability and capacity to cater for the future regional and national air transport requirements. Notwithstanding this, however, the present airport infrastructure presents risks that in our opinion are of concern to the future economic and social development of the region. These risks involve the airspace and land issues surrounding Tauranga aerodrome and airport plus the question of the need for and suitability of Rotorua as an airport to support jet aircraft operations, with and without runway extensions.

8. Conclusions

8.1 Given the existing safety regulatory regime[52] all three regional airports could continue to support air transport services and general aviation well past 2021. The question is whether they should.

8.2 All three airports are not viable commercial entities and generate an economic loss in value to their owners.

8.3 For Whakatane there are no operational limitations attached to the airport except it is not certificated for scheduled air services by aeroplanes of 30 seats or more. But the question overhanging Whakatane is the limited or nil growth in the demand for air transport. So there is a question-mark over whether the airlines will continue to provide scheduled services. In our opinion it is possible that over the next 20 years or so scheduled services could be discontinued.

8.4 The big question for Tauranga is the impact on economic (and social) development on the region if the airport remains where it is. It is likely that the economic benefit to Tauranga and the Western Bay of Plenty, alone, is sufficient to warrant the airport being relocated. In other words, regardless of the benefits that may arise from a regional airport to Whakatane, Kawerau, Opotiki or Rotorua, or them all, the benefits to Tauranga and the Western Bay of Plenty are likely to be sufficient to merit the relocation of Tauranga airport.

8.5 The horns of a dilemma might be a good phrase to describe the questions before Rotorua. Tourism is very important to the economic development of the district (and region). Tourism operators prefer aeroplanes with a capacity to accommodate a full bus load of passengers and jets. The geographic location of Rotorua airport will continue to place constraints on jet operations whether or not there is an extension. Flight safety will not be compromised but payload and operational limitations may be restricted. If Tauranga decided to "go it alone" and relocate the airport to another location, this could have a detrimental impact on air services to and from Rotorua. The present population of Tauranga alone is 30% greater than Rotorua and before 2011 the Tauranga-Western Bay of Plenty will have more than twice the population of Rotorua. And over the forecast period Tauranga is likely to have a greater frequency of air transport flights than Rotorua. A combination of these factors suggest that there would be a certain impact on air transport services for Rotorua. With these issues in mind it would be prudent for Rotorua to have an interest in any examination of the benefits to the region from a regional airport.[53]

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[52] The introduction of runway end safety areas (RESAs) could limit operations for Tauranga and Rotorua, depending on the standard adopted (*viz* 90m or 240m RESAs).

[53] The merits or otherwise of a regional airport are not part of this study and so the location of a relocated 'Tauranga airport' or a potential regional airport would likely be in a location relatively equidistant to Rotorua, Tauranga and Whakatane (*eg* Maniatutu area).

8.6 There is no doubt that the airlines would prefer a regional airport as this would enable them to consolidate their network and route structure, offer larger more efficient aeroplanes and, overall, better services to passengers. In our opinion jet services to Wellington and probably Christchurch are more likely sooner, rather than later, with a regional airport. But, unless air transport services ceased at Rotorua and Tauranga, the airlines would not support a regional airport.

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