Swedavia – McGregor Report

Review of Civil Aviation Safety Regulations and the Resources, Structure and Functions of the New Zealand Ministry of Transport Civil Aviation Division

APPENDICES

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APPENDIX I

AVIATION SAFETY REVIEW

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1.0 INTRODUCTION

The purpose of this report is to give a broad statistical review of civil aviation safety. Safety levels for various types of operation are presented as well as major cause factors for two types of operation. Safety levels are compared with those for Swedish ground transportation and Swedish military aviation.

Safety levels are normally presented as "static" average over recent years. Safety trends are shown for airlines and private/club flying.

The statistical review is preceded by a discussion of how safety is measured.

It may be interesting to compare safety levels achieved by various nations all over the world. However, comparable data are not readily available. Therefore, data chosen for some advanced aviation nations (of which we consider Sweden one) for which data are available, as well as data for all ICAO nations combined. Safety levels for the more advanced nations may be chosen by less advanced nations as achievable, albeit maybe with difficulty, due to less fortunate economic conditions. A word of caution, however. Lower safety levels do not necessarily indicate inferior safety efforts. For example, severe terrain or weather conditions may be major safety reducing factors in some nations.

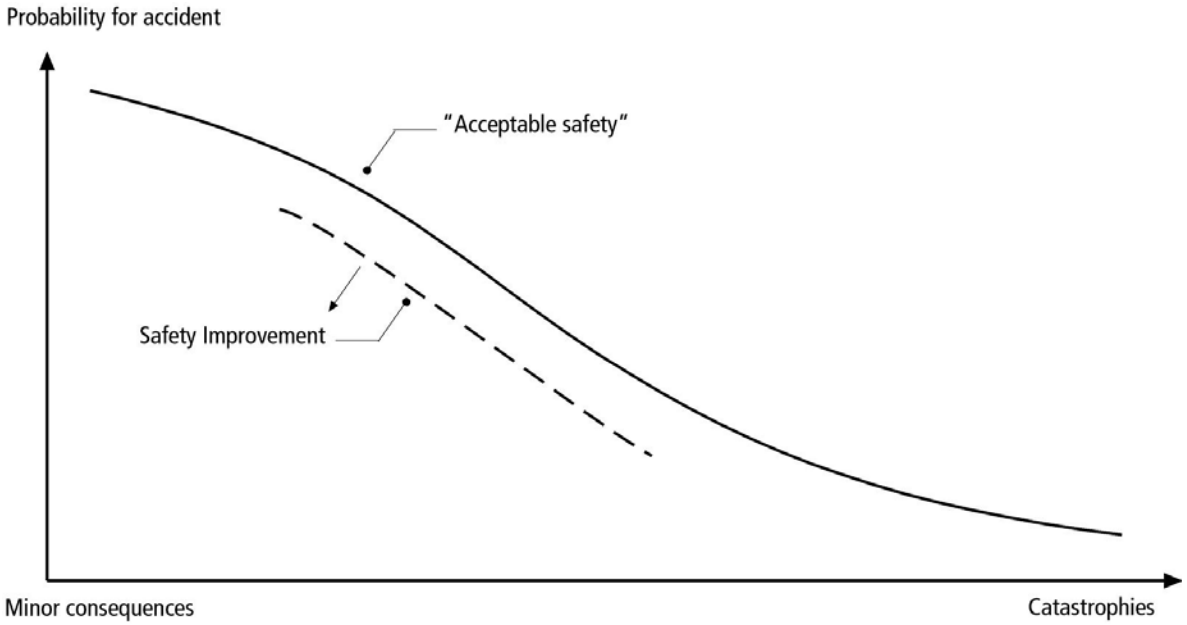
2.0 HOW SAFETY IS MEASURED

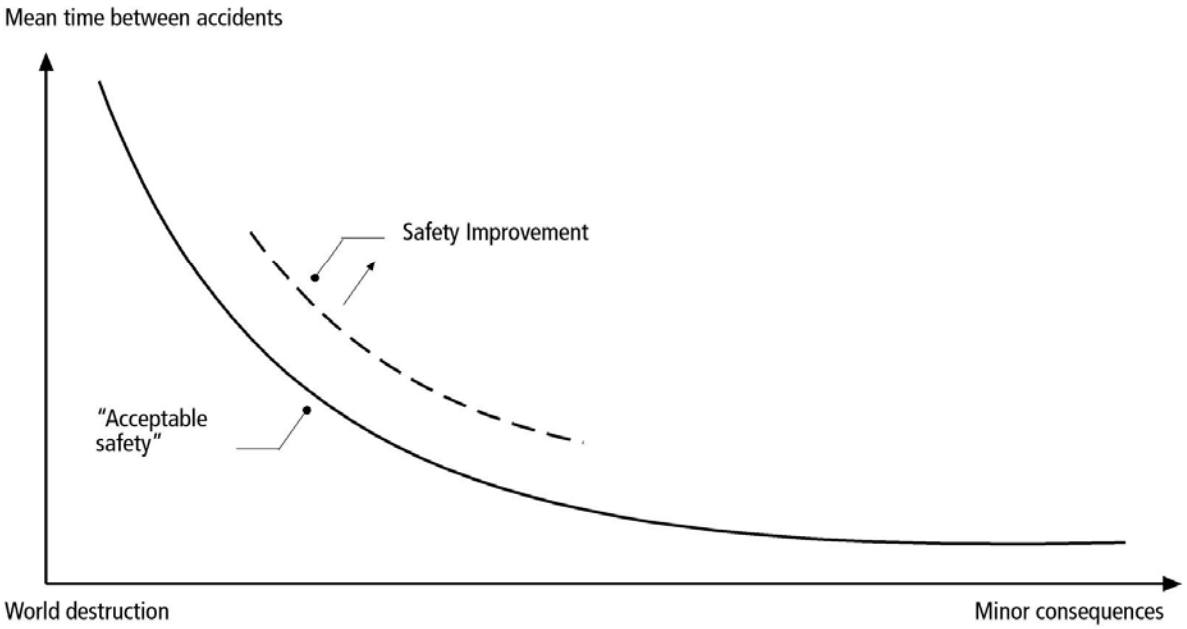
2.1 GENERAL

Our language is filled with words hard or impossible to define in a direct (positive) way. Safety is one of them. A religiously inclined person may have a notion of safety as a protecting hand, which in a way is a positive view, but when it comes to measuring safety, we must always measure the opposite of safety somehow (what the hand protects against), ie. Different kinds of unwanted occurrences, from minor incidents to major catastrophes. As a matter of fact, "safety" is only a more practical and selling way of expressing "a low probability for an accident to happen, or a low probability for an accident to be serious, or both".

Figure 1 expresses what we indirectly mean when we talk about high and low safety. If the consequences (physical and economic) of an accident always are minor, we accept a rather high probability for the accident. If, on the other hand, the consequences always are catastrophic, we want the probability for the accident to be very low. If the consequences can be either minor, catastrophic or in between, we accept probabilities in reverse proportion to the seriousness of the outcome.

Figure 1 : What “Safety” Means





To be meaningful, the probabilities must be activity (exposure) or production related. It is almost inevitable that more activity will cause more accidents. If the flying activities are doubled in a short time, it is only natural that the number of accidents will double.

Activity and production in aviation are generally measured in numbers of flights, flight hours, aircraft kilometres, passenger-kilometres or tonne-kilometres.

2.2 SOME SAFETY MEASURES

The most common measurements of safety based on accidents and activity are the following "accident rates":

- number of accidents (total or fatal) per so many flight hours (generally 10,000, 100,000 or 1 million);
- number of accidents (total or fatal) per so many flights (or departures);
- number of hull losses per so many flight hours.

Less common is:

- number of accidents per so many aircraft kilometres.

For passenger services, the number of passenger fatalities are often used in measurements or safety. However, they should not be related to flight hours or flights. Large aircraft are penalised by such measurements. For large aircraft credit must be given for the large number of passengers transported, ie. the number of fatalities must be related to the "people moving production", eg. number of passenger-kilometres produced.

The most commonly used measurement of safety based on fatalities and production is the following "fatality rate":

- passenger fatalities per so many passenger-kilometres (or passenger miles).

Less common is:

- passenger fatalities per so many passenger-flights or passenger-departures (as opposed to aircraft flights or departures).

Measurements of safety are normally used in retrospect. Then they are based on hard facts. They may also be used as targets for the future. However, a target of zero accidents is unusable for all practical purposes. When a target is set, it is often set as a maximum of one accident per so many flight hours, eg. One per one million flight hours or one per 10 million flight hours.

Accidents are crude and sometimes slow indicators of safety trends. If accidents were the only indicators of weakness in the aviation system, we would miss important information usable for improving safety. By counting and relating

incidents as well we have additional indicators of what is going on in the aviation world. However, in the following discussion only safety measurements based on number of accidents and fatalities will be used.

2.3 ALTERNATIVE OR INVERSE MEASUREMENTS OF SAFETY

Above, the most commonly used measurement of safety were presented. Invariably, the accident or fatality rates are given as two numbers, eg. 0.27 fatal accidents per 100,000 flight hours. When exposed to such an expression, most people immediately start to calculate the corresponding number of flight hours per fatal accident or its inverse. They want to have only one figure to contemplate in the end. For most people, maybe all, it is easier to understand 370,000 flight hours per fatal accident, or one fatal accident per 370,000 flight hours than 0.27 fatal accidents per 100,000 flight hours, which means the same.

All measurements of safety in this report are presented with one number, such as:

- number of (aircraft) flight hours per fatal accident.

In all diagrams and tables a higher figure represents higher safety than a lower one, as opposed to the common way of presentation. The rates may now be called "safety rates" rather than "accident rates" and "fatality rates".

There is a problem with this approach, however. A year with no accident gives an infinite "safety rate", which is against everybody's notion of actual safety. To avoid infinite rates, averages over a sufficient number of years are calculated. In trend diagrams in this report moving five (5) year averages are used. Thus, the safety rate for 1982 is based on the years 1980 through 1984. Compared to one rate for each single year, this also gives a smoother and more useful diagram, adjusting for the fact that accidents don't come evenly distributed over time, even if the theoretical probability for an accident per flight would be exactly the same for all years and the number of flight hours were evenly distributed over time.

3.0 WHY DIFFERENT RATES?

There are several reasons for having more than one rate expressing safety or lack of safety. Here are some:

- for a particular interest group or a particular type of operation, one rate may constitute a better measurement of safety than another rate, and vice versa;
- one rate usually doesn't cover all aspects. The best idea of the safety level of an aviation activity may be obtained by studying more than one rate;
- suitable data are not always easily available. For example, for a small taxi operator, it is much easier to keep track of the number of flight hours per year than the number of passenger-kilometres produced.

For the average airline passenger, who is not concerned with details, the most interesting rates are:

- number of passenger-flights per passenger fatality (or injury), "all" aircraft types and operators combined. This rate takes care of the survival aspect, ie. that statistically not all passengers are killed in a fatal accident;
- number of passenger-kilometres per passenger fatality (or injury), "all" aircraft types and operators combined. Same comment as above.

Of course, if the passenger knows with what particular aircraft type or with which operator he or she is going to fly, he/she may be interested in the rates for that particular aircraft or operator.

For the average pilot, the most interesting rates (for his own safety), are:

- number of aircraft flights per accident (total and fatal), especially for the particular type of operation and aircraft he is flying; and
- number of flight hours per accident (total and fatal), especially for the particular type of operation and aircraft he is flying.

For operators, manufacturers and insurance companies "number of flight hours per hull loss" is of interest, in addition to the above rates.

When comparing very different types of operation within aviation, the best rates are probably "number of flights per accident" and "number of flights per accident". The number of passenger-kilometres has no meaning for agricultural flights and are generally of minor interest for recreational flights.

4.0 COMPARISON BETWEEN "SAFETY RATES" FOR VARIOUS TYPES OF OPERATION

Safety rates vary with at least the following factors:

- type of operation,
- operator,
- area of operation (terrain, weather, facilities, etc.),
- type of aircraft, and
- pilot experience.

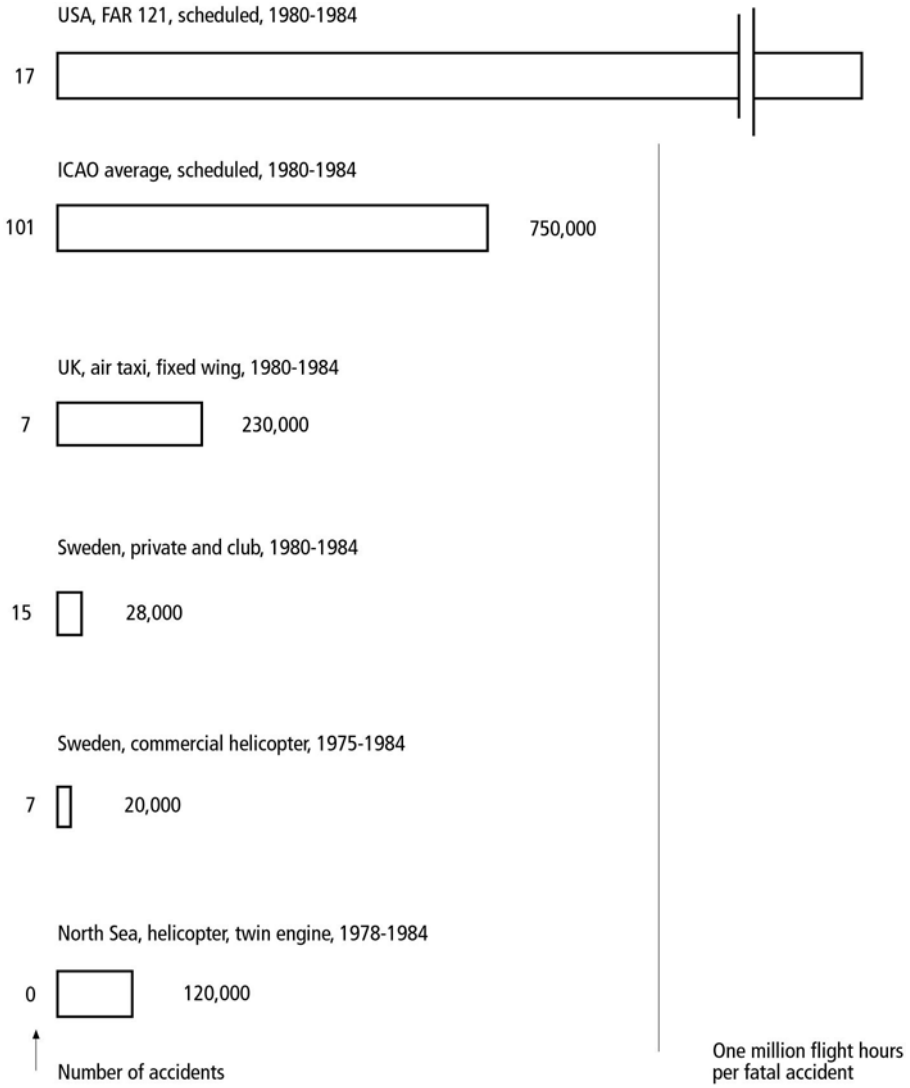
The first factor is of major interest in a general statistical survey such as this one. Differences between different types of operation are partly a reflection of safety authority requirements, since minimum requirements may vary with type of operation. The other mentioned factors and others are of major interest when going deeper into accident prevention work.

Figure 2 gives an idea of the large differences that exist between the rates for different types of operation. The safety rates in this figure are based on flight hours and fatal accidents. US scheduled passenger operations are almost four (4)

times safer than the average ICAO scheduled services (including USA). Scheduled services are considerably safer than air taxi (represented by UK), which is safer than private and club flying (represented by Sweden). North Sea operations with twin-engined helicopters are safer than commercial helicopter operations in Sweden (mainly one-engined).

Since safety requirements for the same type of operation are very much the same all over the world, the safety levels are quite similar in nations with similar aviation structure and with similar economic conditions. Therefore, if reliable rates cannot be calculated for a small nation due to few accidents, rates for similar larger nations can be used as approximate values. For example, in Sweden we expect that the probability for a major fatal Swedish airline accident to occur is approximately 1 in 20 per year, which corresponds to 20 years between accidents. This is partly based on previous experience and partly on rates for USA and Western Europe, with which nations we compare ourselves. (An accident where a passenger is killed when falling from an aircraft staircase does not constitute a major fatal accident).

Figure 2: Comparison of Safety Between Different Types of Operation



5.0 MILITARY AVIATION SAFETY (PEACETIME)

Military flying is "by definition" rather dangerous, particularly combat flying. This is true also for peacetime, since the pilots need to practise under warlike conditions, except that they are not fired upon by an enemy.

Military safety statistics are generally not readily available and Luftfartsverket (The Swedish Civil Aviation Administration) does not devote any effort trying to find pieces of information on the subject in the aviation press. However, we are receiving some information regarding aviation safety for the Swedish Armed Forces from the Swedish Air Force.

Table 1 compares Swedish military flying with Swedish private and club flying.

Table 1: Comparison of Swedish Military Flying with Swedish Private/Club Flying, 1980-1984

	Number of Flights hours per fatal accident	Number of Flights hours per destroyed accident
Private and club flying	38,000	15,000
Swedish Armed Forces, all aircraft	38,000	13,000
Swedish Air Force, combat aircraft		7,000

As can be seen, all military flying combined (airplanes and helicopters: combat, transport, training, etc.) has safety rates similar to private and club flying. Safety for combat aircraft alone is lower, as can be expected.

6.0 COMPARISON WITH GROUND TRANSPORTATION

In **Table 2** a comparison is made between the safety of scheduled airlines, represented by the ICAO average, and different means of ground transportation in Sweden.

Table 2: Comparison Between Safety of Airline and of Different Means of Ground Transportation in Sweden

Traveller Category	Person-kilometre per fatality (000,000,000)	Times around the world per fatality[1]
Passenger, scheduled airline, ICAO average 1980-1984	1.665	42,000
Passenger, Swedish state Railways, (SJ) 1980 -1984	1.076	27,000
Automobile occupant 1978	0.136	3,400
Pedestrian 1978	0.017	435
Cyclist 1978	0.017	430
Motor cyclist 1978	0.003	85

Note:
1 sum of all individual distances travelled per fatality, represented by number of times around the world per fatality.

Except for trains, exposure or production data (eg. passenger-kilometres or person-kilometres) are not available each year. The last time exposure data were estimated in Sweden was 1978. New data will probably be available in the fall of 1986.

Unfortunately, data for bus transportation are not available.

For airlines and trains safety rates are presented as passenger-kilometres per passenger fatality, and for private transportation as person-kilometres per fatality.

In addition, corresponding figures are presented regarding how many times around the world this represents per fatality.

As can be seen motor cyclists don't come very far per fatality compared with other traveller categories. Cyclists and pedestrians come equally far. Since cyclists travel faster than pedestrians, this means that there are less exposure hours per fatality for cyclists than for pedestrians.

Automobile occupants travel in order of $1/10^{th}$ as far per fatality as airline and train passengers.

7.0 SAFETY TRENDS

7.1 AIRLINES (ICAO)

Figure 3 shows how the safety of scheduled and non-scheduled passenger services has improved since the beginning of the seventies.

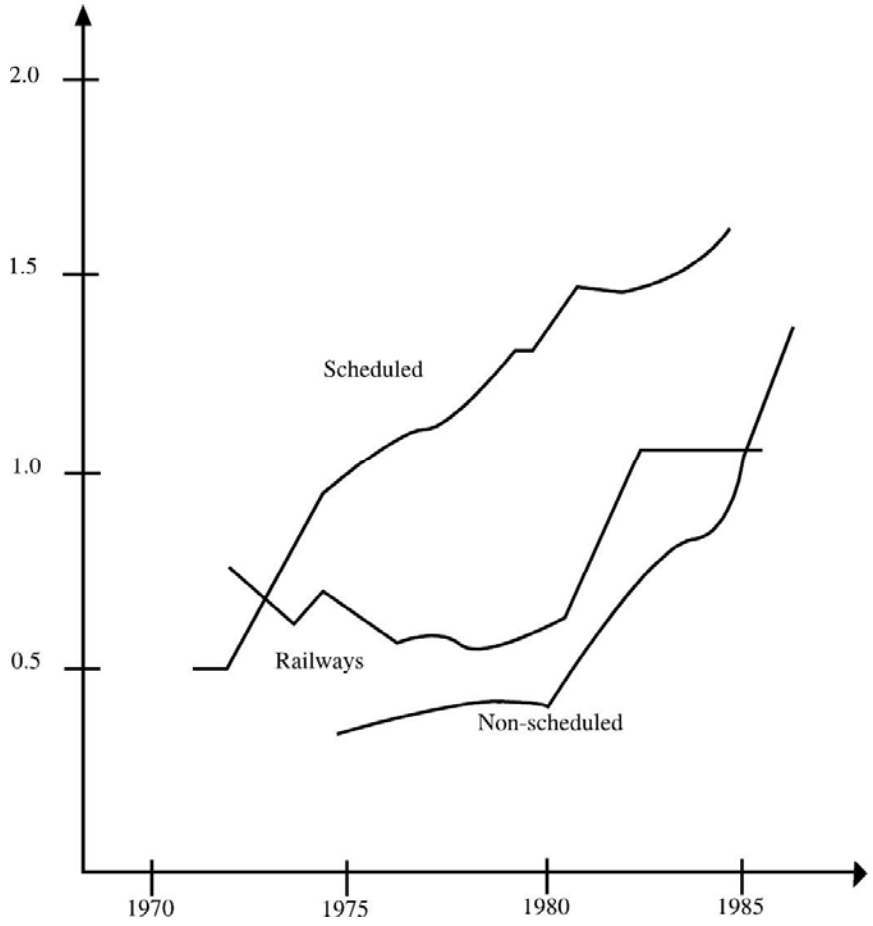
The safety trends are presented as 5 year moving averages.

For comparison, the safety trend for Swedish railways is presented.

The figure shows that scheduled services on the average are safer than non-scheduled services. The particularly low safety rate for non-scheduled services for the average years 1975-1979 is explained by the Tenerife catastrophe in 1977, when 552 passengers were fatally wounded.

The safety of Swedish railways has been lower than for ICAO scheduled services a few years. However, preliminary figures indicate that railway safety for the average year 1983 surpassed safety for ICAO scheduled services.

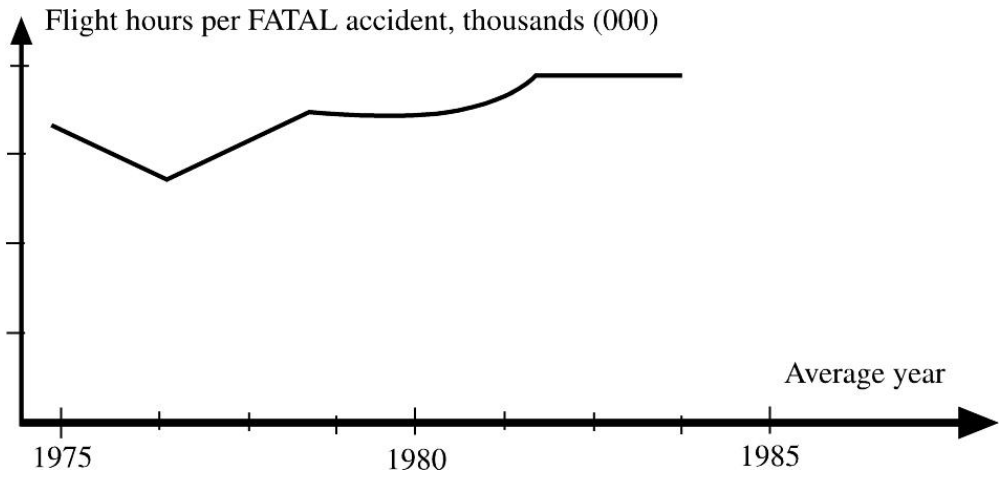
Figure 3: Safety Trends of Scheduled and Non-Scheduled Passenger Services (ICAO) Compared with that for Swedish State Railways



7.2 PRIVATE AND CLUB FLYING (SWEDEN)

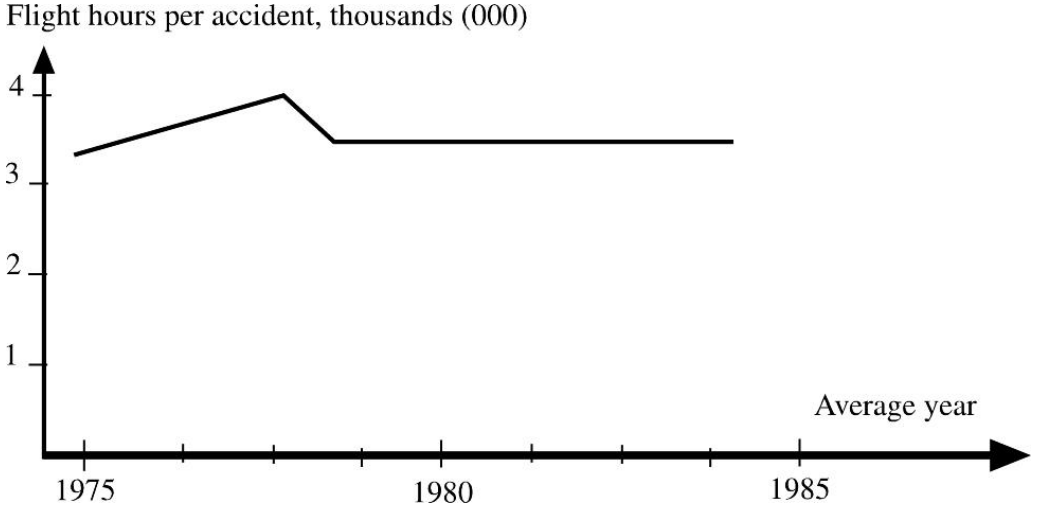
Figure 4 shows that the safety of private and club flying in Sweden has improved somewhat since the middle of the seventies.

Figure 4: Safety Trend of Private and Club Flying in Sweden, Fatal Accidents



The trend is presented as 5 year moving averages of the number of flight hours per fatal accident. However, the number of flight hours per accident (independent of severity) has not improved, which can be seen in **Figure 5**.

Figure 5: Safety Trend of Private and Club Flying in Sweden, All Accidents



8.0 MAJOR CAUSE FACTORS

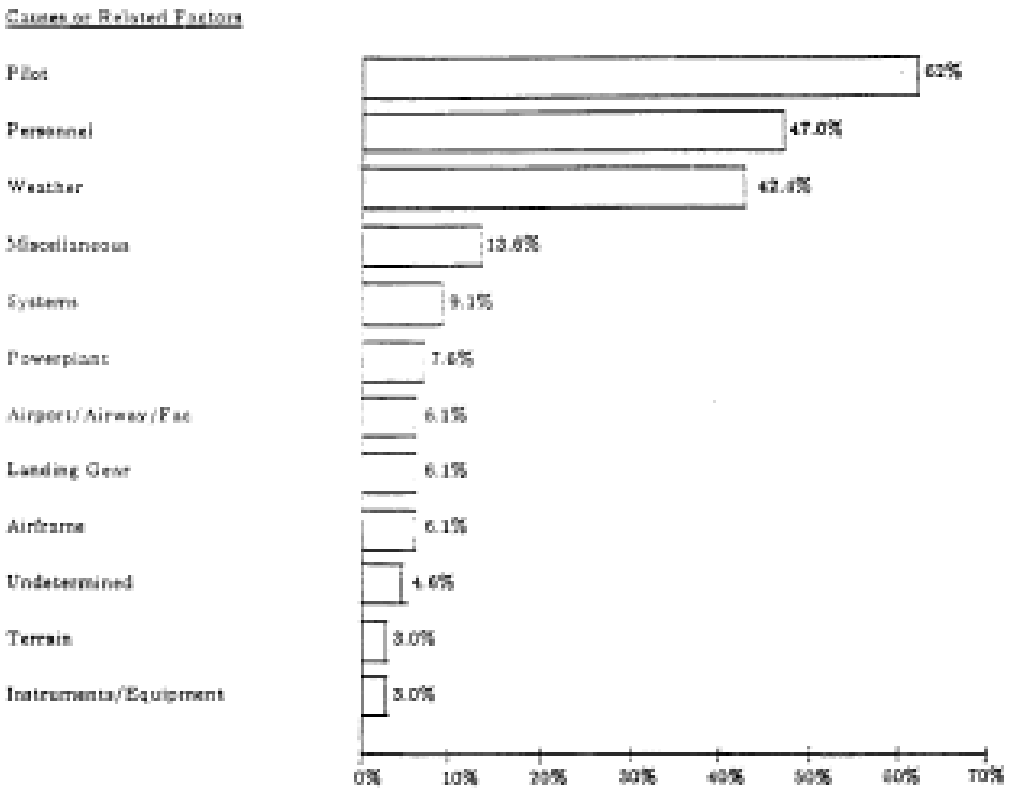
8.1 AIRLINES (USA)

An accident is usually not caused by one single factor. More often than not, several cause factors, of varying importance, are found by accident investigators.

Figure 6 shows how often different cause factors (correctly: causes and related factors) were found in fatal accidents with US certificated route air carriers.

As can be seen, pilot error was present in more than half of the accidents. Other types of personnel contributed also to a significant degree. Weather was an important factor. Systems, landing gear and powerplant together contributed to less than 25% of the fatal accidents.

Figure 6: Fatal Accidents Causes or Related Factors Percentage Distribution US Certificated Route Air Carriers



8.2 PRIVATE AND CLUB FLYING (SWEDEN)

For airline operation **broad** factors were presented. For private and club flying the most common **detailed** factors are presented. A detailed factor is not subdivided further in statistical data. To go further with the analysis combinations of factors and individual accident reports have to be studied.

Table 3 shows the ten most common detailed factors for **all** accidents. All of these are pilot factors.

Table 3: Swedish Private/Club Flying Top Ten Detailed Factors in All Accidents 1973-1982
(from the data bank NORDAIDS)

Factor	In percent (%) of accidents
Inadequate pre-flight preparation or planning	16
Selected unsuitable take-off, landing or taxiing area	12
Failed to obtain/maintain flying speed	11
Failed to follow procedures, instructions etc	10
Improper compensation for wind	9
Failed to see or avoid objects	8
Improper operation, power plant controls	7
Attempted operation beyond experience/ability	7
Improper in-flight decision or planning	6
Failed to maintain directional control	6

(Total number of accidents for the period: 349)

Table 4 shows the ten most common detailed factors for **fatal** accidents. All of these, except “low ceiling”, are pilot factors. However, “low ceiling” is often an alternate way of saying “Initiated or continued VFR flight in adverse weather”, which is a pilot factor.

Table 4: Swedish Private/Club Flying Top Ten Detailed Factors in Facto Accidents 1973-1982

Factor	In percent (%) of FATAL accidents
Failed to obtain/maintain flying speed	28
Failed to follow procedures, instructions etc	28
Inadequate pre-flight preparation or planning	16
Attempted operation beyond experience/ability	16
Continued VFR into adverse weather	14
Improper in-flight decision or planning	14
Low ceiling	14
Exercised poor judgement	12
Initiated flight in adverse weather	9
Became lost/disoriented	7

(Total number of fatal accidents for the period: 43)

Addition to paper "Aviation Safety Review" (by Eskil Wiklund)

ICAO defines an accident as follows:

Accident: An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked in which:

a) a person is fatally or seriously injured as a result of:

- *being in the aircraft, or*
- *direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or*
- *direct exposure to jet blast.*

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

b) the aircraft sustains damage or structure failure which:

- *adversely affects the structural strength, performance or flight characteristics of the aircraft, and*
- *would normally require major repair or replacement of the affected component.*

except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tyres, brakes, fairings, small dents or puncture holes in the aircraft skin; or

c) the aircraft is missing or is completely inaccessible.

Note 1 - For statistical uniformity only, an injury resulting in death within thirty days of the date of the accident, is classified as a fatal injury by ICAO.

Note 2 - An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.

It follows that an accident is defined as a fatal accident if at least one person was fatally injured and died within 30 days.

This means that the rate "Number of flight hours per fatal accident" would be the same if only one person of many onboard died in each fatal accident or if all onboard died in each fatal accident.

On the other hand, the rate "Number of passenger-km per passenger fatality" takes account of the survival aspect. Improved crash-worthiness of aircraft may therefore improve this rate by reducing the number of fatalities in partly survivable accidents or by transferring normally, fatal accidents into the non-fatal category.

The "Number of flight hours per fatal accident" will improve due to improved crashworthiness only if normally fatal accidents are transferred into the non-fatal category.

APPENDIX II

INTERNATIONAL CIVIL AVIATION ORGANISATION (ICAO)

and

THE OBLIGATIONS OF MEMBER STATES

1.0 THE INTERNATIONAL CIVIL AVIATION ORGANISATION (ICAO)

With the signing of the Chicago Convention 1944, ICAO was erected as an inter-governmental organisation. In 1947 ICAO became a specialised agency in relationship with the United Nations. In 1987 ICAO has 157 contracting States which have ratified the Convention.

Although ICAO provides the machinery for the achievement of the necessary international standardisation in aviation it must be borne in mind that successful results within ICAO, to a high degree, depend on the willingness of States to cooperate within the organisation and to support it.

This is manifested in Article 37 of the Convention by which each contracting State **undertakes to collaborate** in securing the highest practicable degree of uniformity in regulations, standards, standards, procedures, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation.

The organisation ICAO is formed by Part III (Articles 43-66) of the Chicago Convention. It is made up of an Assembly, a Council, an Air Transport Committee, an Air Navigation Commission, a Secretariat and such other bodies as may be necessary from time to time.

The Assembly, in which all contracting States are represented, is the sovereign body of ICAO. It meets not les than one in three years to review the work of the Organisation to take action on the reports of the Council, to set policies and approve the work programme and budgets for the upcoming three-year period, to elect the contracting States to be represented on the Council, etc.

The Council is the governing body of ICAO. It is a permanent body responsible to the Assembly and is composed of 33 contracting States. The Council shall carry out the directions of the Assembly and discharge the duties and obligations which are laid on it by the Convention. Among other things the Council shall adopt Standards and Recommended Practices in the Annexes to the Convention.

The Air Navigation Commission (ANC) is the principal body concerned with the development of Standards, Recommended Practices and Procedures in the technical and operational field. The Commission thus shall recommend to the Council modifications of the Annexes to the Convention.

ANC is composed of 15 persons with appropriate qualifications and experience in the technical field. The members are nominated by States but are expected to function as independent experts and not as representatives of their States.

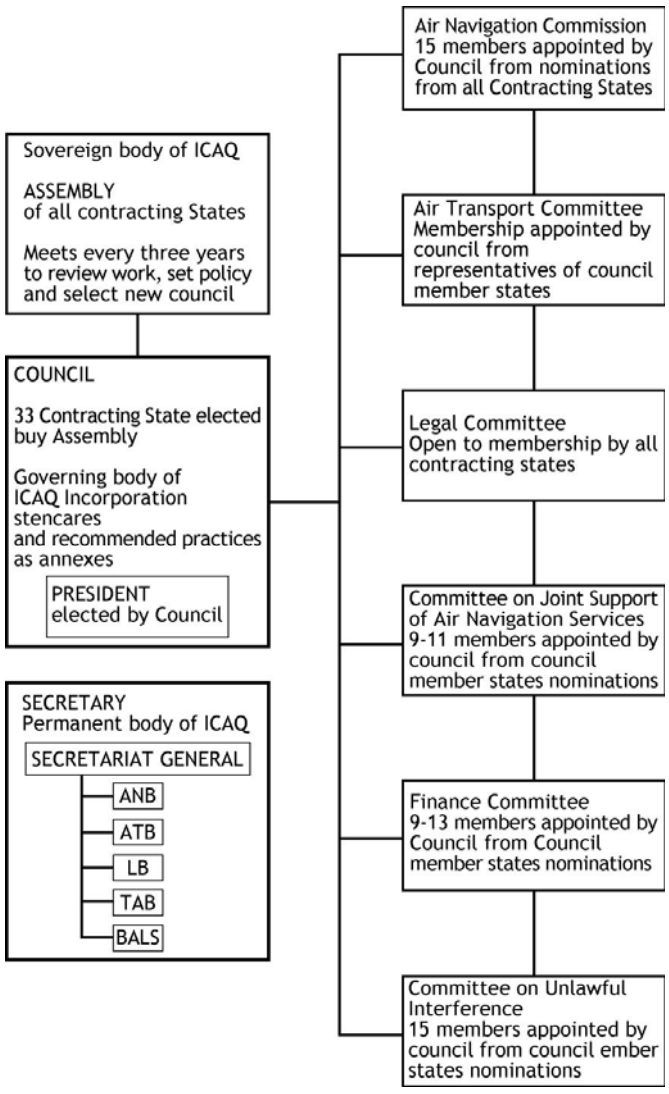
The Secretariat is a permanent body supporting the Council and the total organisation. The personnel in the secretariat are international civil servants employed by ICAO. The main part of the secretariat is located at the ICAO headquarters in Montreal, Canada, but there are personnel at seven regional offices throughout the world to assist in implementation of the Air Navigation Plans.

Regional offices are located at: Lima, Peru; Mexico City, Mexico; Dakar, Senegal; Paris, France; Cairo, Egypt; Nairobi, Kenya; and Bangkok, Thailand.

In addition to the above described bodies there are five permanent committees with specific work programmes. These are the Air Transport Committee, Finance Committee, Legal Committee, Committee on Unlawful Interference and Committee of Joint Support of Air Navigation Services. The **Air Transport Committee** advises the Council on air transport matters. Its members are chosen from among the representatives on the members of the Council.

The organisational structure of ICAO is illustrated at Figure 1.

Figure 1: The Organisational Structure of ICAO



2.0 INTERNATIONAL CIVIL AVIATION INSTRUMENTS WITHIN THE ICAO FRAMEWORK

CONVENTION/ PROTOCOL	IN FORCE	RATIFIED BY NZ	REMARKS
BASIC CONVENTION			
Convention on International Civil Aviation (Chicago 1944) with amendments and annexes	Yes	Yes	The basic convention by which governments agree on certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically. International standards and recommended practices are designated as 18 Annexes to this Convention
International Air Services Transit Agreement (Chicago 1944)	Yes	Yes	Contracting State grants other contracting States in respect of scheduled international air services the privilege to fly across its territory without landing and the privilege to land for non-traffic purpose.
International Air Transport Agreement (Chicago 1944)	Yes	No	Contracting State grants to other contracting States freedom of their air in respect of scheduled international air services through five specific privileges. This agreement is no of little value and is in practice superseded by bilateral agreements.
Protocol on authentic trilingual text of the Convention on International Civil Aviation (Buenos Aires 1968)	Yes	Yes	The text of the basic convention in English, French and Spanish.
Protocol on the authentic quadrilingual text of the Convention on International Civil Aviation (Montreal 1977)	No	No	The text of the basic Convention In English, French, Spanish and Russian
AIRLAW CONVENTIONS			
Liability			
Convention for the unification of certain rules relating ot international carriage by air (Warsaw 1929)	Yes	Yes	The convention provides for the presumed liability of the air carrier, when, during international carriage by air, a passenger is killed or injured or there is loss or delay of, or damage to, cargo and baggage.
Convention regarding damage to third parties on surface (Rome 1952)	Yes	No	The convention provides for the liability in case an aircraft causes damage to third parties on surface. Rather a few States have ratified the convention and a complete revision was made 1978. See protocol amending the Rom Convention (Montreal 1978)

Protocol to amend the Warsaw Convention (Hague 1955)	Yes	Yes	The protocol amended the Warsaw Convention by doubling the passenger limit and modifying the circumstances under which a carrier would lose the protection of liability limitations. The provisions on document is simplified.
Convention supplementary to the Warsaw Convention (Guadalajara 1961)	Yes	Yes	This convention supplements the Warsaw regime by stipulating that it applies to international carriage by air performed by a person other than the contracting carrier.
Protocol amending Warsaw Convention as amended by the Hague protocol (Guatemala City 1971)	No	No	Is intended to amend the Warsaw regime by subjecting the carriage of passengers and baggage to the principle of absolute liability coupled with the defence of contributory negligence of the person claiming compensation. See protocol No 3, Montreal 1975
Protocol No. 1 amending Warsaw Convention (Montreal 1975)	No	No	The amendment mainly translates the carriers liability from gold francs to “Special Drawing Rights” and raises the limits
Protocol No. 2 amending Warsaw convention as amended by the Hague protocol (Montreal 1975)	No	No	“
Protocol No. 3 amending Warsaw convention as amended by the Hague protocol and Guatemala City protocol(Montreal 1975)	No	No	“
Protocol No. 4 amending Warsaw convention as amended by the Hague protocol (Montreal 1975)	No	No	“
Protocol amending the Rome Convention (Montreal 1978)	No	No	This protocol also amends the rules for transport and cargo and mail. Revision of the liability rules in case an aircraft causes damage to third parties on surface
SECURITY			
Convention on offences and certain other acts committed on board aircraft (Tokyo 1963)	Yes	Yes	
Convention for suppression of unlawful seizure of aircraft (Hague 1970)	Yes	Yes	
Convention for the suppression of unlawful acts against the safety of civil aviation (Montreal 1971)	Yes	Yes	An international conference on Air Law will meet in Montreal in February 1928 to modify this convention.
MISCELLANEOUS			
Convention on the international recognition of right sin aircraft (Geneva 1948)	Yes	No	Convention on recognition of property right in aircraft

2.1 CHICAGO CONVENTION 1944

Convention on International Civil Aviation

This is the basic Convention by which governments agree on certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically. International standards and recommended practices are designated as 18 Annexes to this Convention, which supersedes "the Convention relating to the Regulation of Aerial Navigation" (Paris 1919) and "the Convention on Commercial Aviation" (Habana 1928).

Chapter I, General principles, recognises that every State has exclusive sovereignty over the airspace above its territory. The Convention only applies to civil aircraft and not to state aircraft (military, customs, police).

The Contracting States **undertake**, when issuing regulations for their state aircraft, that they will have due regard for the safety of navigation of civil aircraft.

Chapter II deals with the rights to operate over the territory of a Contracting State, and prescribes that the regulations shall be applied to the aircraft of all contracting States without distinction. Entry and clearance regulations (immigration, passports, customs, quarantine) shall be complied with and measures to prevent the spread of disease by means of air navigation be taken. Rules for airport and similar charges are given.

This chapter prescribes that each contracting State shall undertake to adopt measures to ensure that every aircraft flying over or manoeuvring within its territory and that every aircraft carrying its nationality mark, wherever such aircraft may be, shall comply with the rules and regulations relating to the flight and manoeuvre of aircraft there in force. Each contracting State undertakes to keep its own regulations in these respects uniform, to the greatest possible extent, with those established under this Convention. Over the high seas, the rules in force shall be those established under this Convention. Each contracting State undertakes to ensure the prosecution of all persons violating the regulations applicable.

Chapter III deals with the nationality of aircraft, registration, display of marks and the States' responsibility to report to ICAO or registration and ownership.

Chapter IV deals with measures to facilitate and expedite air navigation especially in the administration of the laws relating to immigration, quarantine, customs and clearance. Basic rules are given for investigation of accidents to an aircraft of a contracting State occurring in the territory of another State.

Under Article 28 each contracting State undertakes to provide air navigation facilities and operational rules in accordance with the Annexes to the Convention.

Chapter V sets out the basic rules for documents to be carried in the aircraft, aircraft radio equipment, certificate and licences, log books, photographic apparatus and cargo restrictions.

Chapter VI deals with adoption of international standards and recommendations and with regulations for notification to ICAO by States of the differences between its own practice and that established by the international standard. Each contracting State **undertakes** to collaborate in securing the highest practicable degree of uniformity in regulations, standards, procedures and organisation. This applies to aircraft, personnel, airways, auxiliary services and to all other matters in which uniformity will facilitate and improve air navigation.

To this end ICAO has adopted 18 Annexes to the Chicago Convention. The contents of these are outlined in Section 3.0.

The objectives and organisation of ICAO and detailed provision for the organisation and work procedures of the Assembly, Council, Air Navigation Commission and Secretariat are given in Chapters VII – XIII. The organisation is described in Section 1.0.

Chapter XIV states that each contracting State **undertakes** that its international airlines **shall**, in accordance with requirements laid down by the Council, file with the Council traffic reports, cost statistics and financial statements showing, among other things, all receipts and the sources thereof.

Chapter XV describes the role of the Council in improving air navigation facilities and in the programme of technical assistance.

Regulations for joint operating organisations and pooled services are prescribed in Chapter XVI.

Chapter XVII – XXII are the final provisions of the Convention which deal with other aeronautical agreements, disputes and default, war, the Annexes, ratifications, amendments and denunciations, and definitions.

2.2 INTERNATIONAL AIR SERVICES TRANSIT AGREEMENT, CHICAGO 1944

This is one of the two original multilateral agreements regulating freedom of the air.

The main agreement is the first part of section 1 of the International Air Services Transit Agreement thus: “each contracting State grants to the other contracting States the following freedom of the air in respect of scheduled international air services:

(1) the privilege to fly across its territory without landing; and

(2) the privilege to land for non-traffic purposes.”

The freedom shall be exercised in accordance with the provisions in the Chicago Convention.

Section 4 prescribes that each contracting State may designate the route to be following within its territory and the airports which may be used. Each State may also impose just and reasonable charges for the use of such airports and other facilities. The agreement gives certain provisions for those charges.

2.3 INTERNATIONAL AIR TRANSPORT AGREEMENT, CHICAGO 1944

Along with the International Air Services Transit Agreement, the International Air Transport Agreement is one of the two original multilateral agreements regulating freedom of the air, sometimes called the five freedoms.

The main agreement is set out in Section 1 thus: "each contracting State **grants** to the other contracting States the following freedoms of the air in respect of scheduled international air services:

(1) the privilege to fly across its territory without landing;

(2) the privilege to land for non-traffic purposes;

(3) the privilege to put down passengers, mail and cargo taken on in the territory of the State whose nationality the aircraft possesses;

(4) the privilege to take on passengers, etc. (see 3); and

(5) the privilege to take on passengers, mail and cargo destined for the territory of any other contracting State and the privilege to put down passengers, mail and cargo coming from any such territory."

This agreement is to all intents and purposes obsolete and this area is now regulated by bilateral agreements. (It may be mentioned that Sweden, who earlier ratified the agreement, denounced it 1983.)

2.4 WARSAW CONVENTION 1929

This Convention is still the basic document in the so called Warsaw regime and unifies certain rules relating to international carriage by air:

Part I gives definitions and objectives. The Convention is limited to the carriage of passenger, baggage and cargo in commercial international aviation.

Part II establishes the detailed requirements for documents of carriage such as passenger tickets, baggage checks and air waybill.

Part III establishes the liability of a carrier for any damage.

The Warsaw Convention 1929 is supplemented and amended by the Hague protocol 1955, the Guadaljara Convention 1961, the Guatemala protocol 1971 and the Montreal protocols Nos 1-4, 1975.

2.5 HAGUE PROTOCOL 1955

This protocol is an amendment to the Warsaw Convention, 1929. It simplifies and modernises the requirements for documents such as passenger tickets, baggage checks and air waybills. The protocol also updates the limit of liability sums and modifies the circumstances under which a carrier could lose the protection of liability limitations.

2.6 GUADALAJARA CONVENTION 1961

This convention supplements the Warsaw Convention by establishing rules in cases where an "actual carrier" performs the whole or part of the carriage. An actual carrier means a person other than the contracting carrier, who, by virtue of authority from the contracting carrier, performs the carriage.

This convention does not change the Warsaw Convention in any other way.

2.7 GUATEMALA PROTOCOL 1971

This protocol is a modification and modernisation of details in the requirements for passenger tickets and baggage checks, it also amends liability rules and raises the limit of liability sums.

The protocol is a supplement to the Warsaw/Hague regime and is amended by Protocol No 3, Montreal 1975. The Guatemala Protocol is not yet in force.

2.8 MONTREAL PROTOCOLS 1975

Protocols to amend the Convention for the unification of certain rules relating to international carriage by air (Warsaw 1929) as amended by the Hague Protocol (Hague 1955) and the Guatemala City Protocol (Guatemala 1971).

There are four Montreal Protocols 1975 all amendments to the "Warsaw regime", dealing with carriers' liability during international carriage by air.

Protocols Nos 1-3 are updatings of liability sums an air carrier has to pay when, during international carriage by air, a passenger is killed or injured or there is a loss or delay of or damage to, cargo and baggage. The principles of using Special Drawing Rights (SDR) instead of gold francs is introduced.

Protocol No 4, like the others, updates liability sums and transforms them to Special Drawing Rights. It also recognises the high degree of automatic data handling that is now available, by changing formats, etc. on passenger tickets, baggage checks and air waybills.

2.9 ROME CONVENTION 1952

This Convention deals with damage caused by foreign aircraft to third parties on the surface.

Chapter I establishes the principles of liability. The liability for compensation shall attach to the operator of the aircraft.

Chapter II establishes the extent of the liability in monetary terms.

Chapter III deals with guarantee for operators' liability. Any contracting State may require that the operator of an aircraft shall be covered by insurance or guaranteed by other security in respect of his liability.

Chapter IV establishes rules of procedure and limitations of actions regarding compensation.

2.10 MONTREAL PROTOCOL 1978

This Protocol is an amendment to the Rome Convention. The Rome Convention and the Montreal Protocol 1978 shall be read and interpreted as one single instrument, known as the Rome Convention of 1952 as amended at Montreal in 1978. The amendment is primarily an adjustment of Chapter II by raising the limits of liability sums.

2.11 TOKYO CONVENTION 1963

This Convention deals with offences and certain other acts committed on board aircraft.

Chapter I presents the scope of the Convention. It shall apply in respect of offences against penal law and in respect of acts which may or do jeopardise the safety of the aircraft or of persons or property therein or good order and discipline on board.

Chapter II defines the State of registration to be competent to exercise jurisdiction over offences and acts committed on board. Each State shall take measures to establish its jurisdiction over offences committed on aircraft registered in the State.

The chapter also establishes those cases in which a State, not being the State of registration, may interfere with an aircraft in flight in

order to exercise its criminal jurisdiction over an offence committed on board.

Chapter III presents the powers of the aircraft commander to take actions necessary to protect the safety of the aircraft or of persons or property therein.

Chapter IV covers unlawful seizure of aircraft. Contracting States shall take all appropriate measures to restore control of the aircraft.

Chapter V covers powers and duties of States. Any State shall allow the commander of an aircraft to disembark any person whom the aircraft commander believes has committed or is about to commit an act described under Chapter I.

The chapter further describes circumstances under which any contracting State shall take custody, communicate with the State of which the person is a national, make enquiry, notify other States, etc.

Chapter VI describes some provisions for extradition. In exercising jurisdiction in connection with any offence on board, States shall pay due regard to the safety and other interests of air navigation and shall so act as to avoid unnecessary delay of the aircraft, passengers, crew or cargo.

2.12 HAGUE CONVENTION 1970

The Hague Convention deals with the suppression of unlawful seizure of aircraft.

Article 1 defines what is to be considered as an offence in this Convention.

Article 2 states that each contracting State undertakes to make the offence punishable by severe penalties.

Article 3 describes to what kind of aircraft, flight, territory, etc. the Convention is applicable.

Article 4 describes the cases where each contracting State shall take such measures as may be necessary to establish its jurisdiction over the offence.

Article 5 prescribes that States which establish a joint air transport organisation or international operating agencies shall designate the State among them which shall exercise the jurisdiction for the purpose of this Convention.

Article 6 prescribes the procedures a State has to follow in taking an offender into custody, make enquiry, notify other States concerned and report its findings to those States etc.

Article 7 states that a contracting State is obliged to submit the case to its competent authorities for the purpose of prosecution, unless the offender is extradited.

Article 8 prescribes how States shall treat an offence for the purpose of extradition.

Article 9 prescribes that States shall take all appropriate measures to restore control of the aircraft to its lawful commander or to preserve his control of the aircraft. The article also prescribes that States shall facilitate the continuation of the journey of the passengers and the crew and return the aircraft and its cargo.

Article 10 prescribes that States shall afford one another the greatest measure of assistance in connection with criminal proceedings brought in respect of the offences.

Article 11 prescribes the obligation States have in reporting to the Council of ICAO.

2.13 MONTREAL CONVENTION 1971

The Montreal Convention deals with the suppression of unlawful acts against the safety of civil aviation.

Article 1 defines what is to be considered as an offence in this Convention.

Article 2 defines the expressions “to be in flight” and “to be in service” in connection with this Convention.

Article 3 prescribes that each contract State undertakes to make the offences mentioned in Article 1 punishable by severe penalties.

Article 4 describes to what kind of aircraft, flight, territory, etc. the Convention is applicable.

Article 5 describes the cases when “each contracting State shall take such measures as may be necessary to establish its jurisdiction over the offence”.

Article 6 prescribes the procedure a State has to follow in taking an offender into custody, making an enquiry, notifying other States concerned and reporting its findings to those States, etc.

Article 7 states that a contracting State is obliged to submit the case to its competent authorities for the purpose of prosecution, unless the offender is extradited.

Article 8 prescribes how States shall treat an offence for the purpose of extradition.

Article 9 prescribes that States which establish joint air transport operating organisations or international operating agencies shall designate the State among them which shall exercise the jurisdiction for the purpose of this Convention.

Article 10 states that contracting States shall endeavour to take all practicable measures for the purpose of preventing offences mentioned in Article 1, and shall facilitate the continuation of the journey of passengers and crew.

Article 11 states that contracting States shall afford one another the greatest measure of assistance in connection with criminal proceedings brought in respect of the offences.

Article 12 prescribes that any State having reason to believe that an offence will be committed shall furnish any relevant information in its possession to States concerned under Article 5.

Article 13 prescribes the obligation States have in reporting to the Council of ICAO.

An international conference on Air Law will meet in Montreal, February 1988, to modify this convention.

2.14 GENEVA CONVENTION 1948

The Geneva Convention 1948 deals with the international recognition of rights in aircraft. In this Convention the contracting States undertake to internationally recognise, among other things, rights of property in aircraft, mortgages, hypotheques and similar rights. It prescribes rules for recording of those rights and for sale of an aircraft in execution.

3.0 ANNEXES TO THE CHICAGO CONVENTION

According to Article 37 of the Chicago Convention each contracting State undertakes to collaborate in securing the higher practicable degree of uniformity in regulations, standards procedures, and organisation in relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation.

Article 37 also states that ICAO shall adopt international standards and recommended practices and procedures regarding safety, regularity and efficiency of air navigation. The Standards and Recommended Practices (SARPS) which are adopted are designated as Annexes to the Convention. At present there are 18 Annexes.

A **Standard** is a specification recognised as necessary for the safety or regularity of international air navigation.

A **Recommended Practice** is a specification recognised as desirable in the interest of safety, uniformity or efficiency of international air navigation.

Under Article 38 of the Convention any State which finds it impracticable to comply in all respects with any Standard, shall give immediate notification to ICAO of any differences between their national regulations and practices and the Standards in the Annexes.

States are also invited by the ICAO Council to extend such notification to any differences from the Recommended Practices in the Annexes, when the notification of such differences is important for the safety of air navigation.

In Annex 15 to the Convention is a provision that the national Aeronautical Information Publication (AIP) shall include a list of differences between the national regulations and practices and related ICAO Standards and Recommended Practices.

Under Article 28 of the Convention each State **undertakes**, so far as it may find practicable, to provide airports, radio services, metrological services and other air navigation facilities to facilitate international air navigation, in accordance with the standards and recommended practices pursuant to the Convention.

Each State likewise under the same article **undertakes** to adopt and put into operation the appropriate standard systems of communications procedure, codes, marking, signals, lighting and other operational practices and rules which may be recommended pursuance to the Convention.

Under Article 12 regarding rules of the air, each State **undertakes** to keep its own regulations uniform, to the greatest possible extent, with those established under the Convention.

The Air Navigation Commission assisted by the Secretariat, is the principal body concerned with the development of the specifications in the Annexes. Depending upon the importance and complexity of the matter the process of developing a specification can be rather length. It can take several years from the initiation of an idea to the date the specification becomes applicable as a worldwide Standard.

During this process the Commission and the Secretariat may submit the subject to different temporary bodies like Technical Panels, Technical Committees, Working Groups, Study Groups, Division Meetings, Air Navigation Conferences, etc. States and international organisations in the aviation field are asked to participate

with experts in those different bodies. This participation should cover different regions of the world and different technical and operational levels in order to ensure worldwide application.

The process also involves repeated consultation of States in order to seek their opinions and in the final stage to get their comments before the Commission submits its proposal to the Council. Thus ICAO expects States to share in the process by having experts participate in temporary bodies and by active involvement in preparing answers to State Letters whereby the Commission seeks the opinions of States. These are ways in which States "collaborate in securing the highest practicable degree of uniformity in air navigation".

The following table presents the title and the content of the present Annexes.

ANNEX NO.	TITLE	CONTENT
1	Personnel Licensing	Licensing of flight crews, air traffic control officers and maintenance personnel
2	Rules of the air	Rules relating to the conduct of visual and instrument flights
3	Meteorological Service for International Air Navigation	Provision of meteorological services of international air navigation and reporting of meteorological observation fro aircraft.
4	Aeronautical Charts	Specifications for aeronautical charts for use in international aviation.
5	Units of Measurement to be used in Air and Ground Operations	Dimensional systems to be used in air and ground operations
6	Operations of Aircraft Part I – International Commercial Air Transport – Aeroplanes. Part II – International General Aviation – Aeroplanes. Part 111 – International Operations – Helicopters	Specifications which will ensure in operations throughout the world a level of safety above a prescribed minimum.
7	Aircraft Nationality and Registration Marks	Requirements for registration and identification of aircraft.
8	Airworthiness of Aircraft	Certification and inspection of aircraft according to uniform procedures.
9	Facilitation	Specification for the free passage of an aircraft, its passengers, crews, baggage, cargo and mail across international boundaries.

10	Aeronautical Telecommunications	Standardisation of communication equipment and systems (Vol I) and of communications procedures (Vol II)
11	Air Traffic Services	Establishment and operation of air traffic control, flight information and alerting services.
12	Search and Rescue	Organisation and operation of facilities and services necessary for search and rescue.
13	Aircraft Accident Investigation	Uniformity in the notification, investigation of and reporting on aircraft accidents.
14	Aerodrome	Specification for the design and equipment of aerodrome
15	Aeronautical Information Services	Methods for the collection and dissemination of aeronautical information required for flight operations.
16	Environmental Protection	Specifications for safeguarding international civil aviation against acts of unlawful interference.
17	Security	Specifications for safeguarding international civil aviation against acts of unlawful interference.
18	The Safe Transport of Dangerous Goods by Air	Specifications for the labelling, packaging and shipping of dangerous goods.

3.1 ANNEX 1: PERSONNEL LICENSING

Article 32 of the Chicago Convention states that the members of the operating crew of every aircraft engaged in international navigation shall be provided with licences issued or rendered valid by the State in which the aircraft is registered.

Article 39 prescribes that any person holding a licence who does not satisfy in full the conditions laid down in the international standard relating to the class of licence which he holds shall have endorsed on or attached to his licence a complete enumeration of the particulars in which he does not satisfy such conditions. Article 40 adds that no personnel having licences so endorsed shall participate in international navigation, except with the permission of the State or States whose territory is entered.

Pursuant to Article 37(d) of the Convention the ICAO Council has adopted Standards and Recommended Practices for Personnel licensing. These are designated as Annex 1 to the Convention and are established for licensing of flight crew, air traffic controllers, flight operation officers, aeronautical station operators and aircraft maintenance personnel.

The general rules in the Annex states, among other things, that contracting States shall designate medical examiners to conduct medical examinations of fitness of applicants. Medical examiners shall have had, or shall receive, training in aviation medicine.

If the medical examination is carried out by a constituted group of medical examiners, State shall appoint the head of the group to be responsible for coordinating the results of the examination and signing of the report. States shall use the services of physicians experienced in the practice of aviation medicine when it is necessary to evaluate reports submitted to the Licensing Authority by medical examinees.

The Annex details the States' obligations regarding the validity of licences issued by the State. The State shall ensure that the privileges granted by the issue of a licence, or by related ratings, are not exercised unless the holder maintains competency and meets the requirements for recent experience established by that State.

The Annex prescribes in detail the requirements for licences and ratings in respect of age, knowledge, experience, skill and medical fitness for all categories or personnel concerned. One chapter describes in great detail the medical provisions for licensing.

The Annex also prescribes in detail the specifications to which a licence issued by a State shall conform regarding content, form, size, colour, etc.

3.2 ANNEX 2: RULES OF THE AIR

Article 12 of the Chicago Convention prescribes that each contracting State **undertakes** to adopt measures to ensure that every aircraft flying over or manoeuvring within its territory and every aircraft carrying its nationality mark, wherever such aircraft may be, shall comply with the rules and regulations relating to the flight and manoeuvre of aircraft there in force.

Each contracting State also **undertakes** to keep its own regulations in these respects uniform, to the greatest possible extent, with those established from time to time under this Convention. Over the high seas, the rule in force shall be those established under this Convention.

Each contracting State **undertakes** to ensure the prosecution of all persons violating the regulations applicable.

Pursuant to the provision of Article 37(c) of the Convention the ICAO Council has adopted international Standards dealing with rules of the air. These Standards are designated as Annex 2 to the Convention and constitutes rules of the air within the meaning of Article 12 of the Convention. Over the high seas, therefore, these rules apply without exception.

The Annex specified general rules, visual flight rules and instrument flight rules to be applied. It also established the responsibility and authority of the pilot-in-command to comply with the rules of the air. Signals for use in different situations are prescribed.

The Annex also pays special attention to interception procedures. It states that interception of civil aircraft shall be governed by appropriate regulations and administrative directives issued by Contracting States in compliance with the Chicago Convention, and in particular Article 3(d), under which Contracting States undertake when issuing regulations for their State aircraft (ie. Military), to have due regard for the safety of navigation of civil aircraft. Accordingly in drafting appropriate regulations and administrative directives due regard shall be had to the provisions of Appendix A and B to the Annex where principles to be observed by States regarding interception of civil aircraft are prescribed.

Considering that interception of civil aircraft are potentially hazardous, the Council has also formulated special recommendations which Contracting States are urged to apply in a uniform manner. These are contained in Attachment A to the Annex.

3.3 ANNEX 3: METEOROLOGICAL SERVICE FOR INTERNATIONAL AIR NAVIGATION

According to Article 28 of the Chicago Convention, each contracting State undertakes, so far as it may find practicable, to provide in its territory meteorological services to facilitate international air navigation, in accordance with the standards and practices recommended or established from time to time, pursuant to the Convention.

Pursuant to Article 28 and Article 37(g) of the Convention the ICAO Council has adopted Standards and Recommended practices for meteorological service for international air navigation. These are designated as Annex 3 to the Convention.

The regulatory material contained in Annex 3 is identical with the Technical Regulations (Chapter C 3.1) of the World Meteorological Organisation.

The Annex prescribes that each Contracting State shall determine the meteorological service which it will provide to meet the needs of international air navigation. This determination shall be made in accordance with the provisions of this Annex and with due regard to regional air navigation agreements. It shall include the determination of the meteorological service to be provided over international waters and other areas which lie outside the territory of the State concerned.

It also prescribes that each Contracting State shall designate the authority, referred to as the Meteorological Authority, to provide or to arrange for the provision of meteorological service for international air navigation on its behalf.

A Contracting State having accepted the responsibility for providing a regional area forecast centre within the framework of the area forecast system (ie. Wellington) shall arrange for that centre to operate and comply in accordance with the detailed rules in this Annex.

Annex 3 further states that each Contracting State shall establish one or more aerodrome and/or other meteorological offices which shall be adequate for the provision of the meteorological service required t satisfy operational needs. The functions to be carried out by these offices are listed.

A Contracting State having accepted the responsibility for providing air traffic services within a flight information region or a control area, shall establish one or more meteorological watch offices, or arrange for another Contracting State to do so. The functions to be carried out by these watch offices are listed.

The Annex prescribes that each Contracting State shall establish at aerodromes and other points of significance to international air navigation, in its territory, such aeronautical meteorological stations as it determines to be necessary. The functions to be carried out by the stations are listed.

Each Contracting State shall arrange, according to the provisions of the Annex, for observations to be made by aircraft of its registry operating on international air routes and for the recording and reporting of these observations.

Aeronautical climatological information required for the planning of flight operations shall be prepared and supplied to users as agreed between the Meteorological Authority and those users. The same Authority shall designate a meteorological office to be associated with each air traffic services unit and suitable telecommunications facilities shall be made available to supply required meteorological information to air traffic services units.

The Annex contains detailed provisions, mainly in the form of Recommendations, for all kinds of meteorological observation, reports forecasts, documentation, etc.

3.4 ANNEX 4: AERONAUTICAL CHARTS

Pursuant to the provision of Article 37(i) of the Convention the ICAO Council has adopted international Standards and Recommended Practices dealing with aeronautical charts. These are designated as Annex 4 to the Convention.

According to the Annex a Contracting State shall on request by another State provide all information relating to its own territory that is necessary to enable the Standards of the Annex to be met.

Contracting States shall, when so specified in the Annex, ensure the availability of charts either by producing the chart or arranging for its production by another State or agency.

States shall take all reasonable measures to ensure that the information it provides and the aeronautical charts made available are adequate and accurate and that they are maintained up to date by an adequate revision service.

The Annex establishes detailed operational requirements for all charts concerned and specifies which charts shall be made available.

Aerodrome Obstacle Charts shall be made available for all aerodromes regularly used by international civil aviation with few exceptions.

Precision Approach Terrain Charts shall be made available for all precision approach runways Categories II and III at aerodromes used by international civil aviation.

Enroute Charts shall be made available for all areas where flight information regions have been established.

Area Charts shall be made available where air traffic services routes or position reporting requirements are complex and cannot be adequately shown on an Enroute Chart.

Standard Department Charts – Instrument – shall be made available wherever a standard departure route-instrument has been established and cannot be shown with sufficient clarity on the Area Chart. Similarly, Standard Arrival Charts – Instrument shall be made available wherever a standard arrival route – instrument has been established and cannot be shown with sufficient clarity on the Area Chart.

Instrument Approach Charts shall be made available for all aerodromes used by international civil aviation where instrument approach procedures have been established by the State concerned.

Visual Approach Charts shall be made available for all aerodromes used by international civil aviation under certain conditions. Aerodrome Charts shall be made available for all aerodromes regularly used by international civil aviation.

World aeronautical Charts shall be made available with certain exemptions.

3.5 ANNEX 5: UNITS OF MEASUREMENT TO BE USED IN AIR AND GROUND OPERATION

Pursuant to the provision of Article 37 of the Convention the ICAO Council has adopted international Standards dealing with units of measurement to be used in air and ground operations. These Standards are designated as Annex 5 to the Convention.

The Standards in Annex 5 shall be applicable to all aspects of international civil aviation air and ground operations. The standardised system of units is based on the International System of Units (SI) and certain non-SI units considered necessary to meet the specialised requirements of international civil aviation. The application of units for certain quantities used in international civil aviation air and ground operations shall be in accordance with a table in the Annex.

3.6 ANNEX 6: OPERATION OF AIRCRAFT

Pursuant to the provisions of Article 37 of the Chicago Convention the ICAO Council has adopted international Standards and Recommended Practices for operation of aircraft. These are designated as Annex 6 to the Convention. The Annex consists of 3 separate documents. Part I Aeroplanes. Part II General Aviation. Part III Helicopters.

Part I contains the minimum Standards applicable to the operation of aeroplanes in scheduled international air services and in non-scheduled international air transport operations. The purpose of the Annex is to provide criteria of safe operating practice and thereby also facilitate the passage over a State's territory of aeroplanes belonging to other States that operate in conformity with the Standards.

The Annex prescribes in detail the flight operations responsibilities of the operator and the operating supervision a State shall perform.

An operator shall establish and maintain a method of supervision of flight operations. The method shall be approved by the State of the Operator.

An operator shall provide an Operations Manual in accordance with the detailed provisions in the Annex. The State of the Operator shall be provided with a copy of this manual and shall incorporate in it such mandatory material as the State may require. Among other things the State of the Operator shall approve the method of determination of aerodrome operating minima to be established by an operator and approve rules limiting the flight time and flight duty periods of flight crew members.

For aeroplane performance operating limitations the Annex states that aeroplanes shall be operated in accordance with a comprehensive and detailed code of performance established by the State of Registry in compliance with the applicable Standards of the Annex. The State of Registry shall take such precautions as are reasonably possible to ensure that the general level of safety, contemplated by these provisions, is maintained under all expected operating conditions including those not covered specifically by the provision of this Annex.

The Annex further details instruments, equipment, flight documents and aeroplane maintenance required for the operation of aircraft. For flight crew and cabin attendants the State of the Operator shall approve a training programme.

Part II of Annex 6 covers international operations by General Aviation aircraft. The provisions of Part II are less stringent than those in Part I but are, as nearly as practicable, equivalent in scope and conform as closely as possible to Part I.

Part III of Annex 6 covers the operation of helicopters in international air navigation. So far, the content in this part is limited to provisions for flight recorders.

3.7 ANNEX 7: AIRCRAFT NATIONALITY AND REGISTRATION MARKS

Article 20 of the Chicago Convention prescribes that every aircraft engaged in international air navigation shall bear its appropriate nationality and registration marks. Pursuant to the provisions of Article 37(f) the ICAO Council has adopted Standards dealing with registration and identification of aircraft. These Standards are designed as Annex 7 to the Convention. All provisions in this Annex are Standards.

The Annex provides detailed specifications for nationality marks, common marks and registration marks to be used and specifications for how they shall be selected, how they shall be located and affixed on the aircraft and specifications for the measurements and for the type of characters of the marks.

Each Contracting State or common mark registrating authority shall maintain a current register showing for each aircraft, registered by them, the information recorded in the certificate of registration. The form of the certificate is prescribed in a Standard. The certificate shall be carried in the aircraft at all times.

An aircraft shall also carry an identification plate inscribed with at least its nationality or common mark and registration mark. The Annex gives detailed provisions for the properties of the plate and its position in the aircraft.

3.8 ANNEX 8: AIRWORTHINESS OF AIRCRAFT

Article 31 of the Convention states that every aircraft engaged in international navigation shall be provided with a certificate of airworthiness issued or rendered valid by the State in which it is registered. Article 33 states that certificates of airworthiness issued or rendered valid by the contracting State in which the aircraft is registered shall be recognised as valid by the other contracting States under certain provisions mentioned.

Pursuant to the provisions of Article 37(e) of the Chicago Convention the ICAO Council has adopted international standards for the Airworthiness of Aircraft. These Standards are designated as Annex 8 to the Convention. All provisions in this Annex are Standards.

The ICAO Council declared that the objective of the Standards in Annex 8 is to define the minimum level of airworthiness. This minimum level constitutes the international basis for the recognition by States (Article 35) of certificates of airworthiness to allow aircraft of other States to fly into or over their territories.

The Council also recognises that the Standards in Annex 8 are broad specifications stating the objectives rather than the means of realising these objectives. ICAO recognises that national codes of airworthiness are required as the basis for the certification by individual States of airworthiness of aircraft. These national codes will contain the full scope and extent of detail considered necessary by individual States.

Annex 8 Part II 2.2 states that a State shall not issue or render value a certificate of airworthiness (for which it intends to claim recognition pursuant to Article 33 of the Convention) unless the aircraft complies with a comprehensive and detailed national airworthiness code established for that class of aircraft by the State of Registry or by any other Contracting State. This national code shall be such that compliance with it will ensure compliance with the Standards of Part II of the Annex and where applicable, with the Standards of Part III. Guidance to States in developing this detailed national airworthiness code is found in the Airworthiness Technical Manual issued by ICAO.

The Standards in Annex 8 cover the administration of the "airworthiness process" and establishes the airworthiness codes for flight, aircraft structures, design and construction, engines, propellers, powerplants, instruments and equipment, operating limitations and information.

3.9 ANNEX: FACILITATION

Article 22 of the Chicago Convention expresses the obligation, accepted by each Contracting State, to adopt all practicable measures, through the issuance of special regulations or otherwise, to facilitate and expedite navigation by aircraft between the territories of Contracting States, and to prevent unnecessary delays to aircraft, crews, passengers, and cargo, especially in the administration of the laws relating to immigration, quarantine, customs and clearance.

Article 23 of the Convention expresses the undertaking of each State, so far as it may find practicable, to establish customs and immigration procedures affecting international air navigation in accordance with the practices which may be established or recommended pursuant to this Convention.

A number of other articles of the Convention have pertinence to facilitation and have been taken into account in the preparation of Annex 9. These are: Article 10, Landing at Customs Airport; Article 11, Applicability of Air Regulations; Article 13, Entry and Clearance Regulations; Article 14, Prevention of Spread of Disease; Article 16, Search of Aircraft; Article 24, Customs Duty; and Article 29, Documents carried in Aircraft.

Pursuant to all articles above and to the provisions of Article 37(j) of the Chicago Convention the ICAO Council has adopted international Standards and Recommended Practices for Facilitation. These are designated as Annex 9 to the Convention.

The provisions of the Annex take a negative and a positive form, eg. that States shall not impose more than certain maximum requirements in the way of paper work, restrictions of freedom of movement, etc., and that States shall provide certain minimum facilities for passenger convenience, etc.

As a general rule it is stated that governmental regulations and procedures applicable to the clearance of aircraft shall be no less favourable than those applied to other forms of transportation. Contracting States shall make provision

whereby procedures for the clearance of aircraft will be applied and carried out in such a manner as to retain the advantage of speed inherent in air transport.

The Annex gives detailed provisions for entry and departure of aircraft, persons, baggage and cargo and for traffic passing through the territory of a State. In general it prescribes that States shall take all necessary steps to secure the cooperation of operators and airport administrations in ensuring that satisfactory facilities and services are provided for rapid handling and clearance.

3.10 ANNEX 10: AERONAUTICAL TELECOMMUNICATIONS

Standards, Recommended Practices and Procedures for Air Navigation Services – Aeronautical Telecommunications have been adopted by the ICAO Council pursuant to the provisions of Article 37(a) of the Chicago Convention and designated as Annex 10 to the Convention. This Annex has two volumes:

Volume I Equipment and systems – Radio frequencies.
Volume II Communications procedures.

Volume I includes Standards and Recommended Practices for certain forms of equipment for air navigation aids and its radio frequencies. The provisions are very detailed and to a high degree directed to experts and to manufacturers of equipment. Of special interest and with great economic impact is the Standard that applies to non-visual aids for final approach and landing. From 1 January 1998, the standard non-visual aid to be used for final approach and landing shall be the microwave landing system (MLS) conforming to the specifications in the Annex. ILS installations shall not be retained beyond 1 January 2000.

The Annex prescribes utilisation of frequencies in the different frequency bands.

Volume II contains detailed procedures for the international aeronautical telecommunication service, including fixed service and mobil service. It has to be noted that the Radio Regulations Annex of the International Telecommunications Convention is all-embracing in character and should be applied in all pertinent cases.

Each State shall designate the authority responsible for ensuring that the international telecommunication service is conducted in accordance with the procedures in the Annex.

Each State shall ensure that there is no wilful transmission of unnecessary or anonymous signals or correspondence by any station within the State.

3.11 ANNEX 11: AIR TRAFFIC SERVICES

Annex 11 became effective in 1950 pursuant to Article 37 of the Chicago Convention stating that ICAO shall adopt and amend from time to time, international standards and recommended practices and procedures dealing with

air traffic control practices. Since 1950 thirty two amendments have been introduced to the Annex, the last in November 1987.

Annex 11 pertains to the establishment of airspace, units and services necessary to promote a safe, orderly and expeditious flow of air traffic. It covers air traffic control service, flight information service and alerting service. Its purpose is to ensure that flying on international air routes is carried out under uniform conditions designed to improve the safety and efficiency of air operations.

According to the Annex, Contracting States shall determine those positions of the airspace and those aerodromes where air traffic services will be provided. They shall thereafter arrange for such services to be established and provided in accordance with the provisions of the Annex.

Those portions of the airspace over the high seas where air traffic services will be provided shall be determined on the basis of regional air navigation agreements. A Contracting State having accepted the responsibility to provide air traffic services in such portions of the airspace (note: applicable in New Zealand) shall thereafter arrange for the service to be established and provided in accordance with the provisions of the Annex.

When it has been determined that air traffic services will be provided, the States concerned shall designate the authority responsible for providing such services. This authority may be a State or a suitable Agency.

Annex 11 contains standards and recommended practices for the organisation of the airspace and of air traffic services (ATS) units and also procedures to be applied by ATS units in providing the various services. It also contains provisions for coordination between ATS units and operators, military authorities and meteorological services authorities and provisions for coordination of activities potentially hazardous to civil aircraft and for in-flight contingencies (strayed or unidentified aircraft and interception of civil aircraft).

This Annex further establishes ATS requirements for communications and for information.

Complementary to Annex 11 (and Annex 2) is the document “The Procedure for Air Navigation Services–Rules of the Air and Air Traffic Services” (PANS-RAC) which is approved by the Council and recommended to Contracting States for worldwide application. This document specifies in greater detail than the Annex the actual procedures to be applied by ATS units. Subsidiary procedures of regional application, as approved by the Council of ICAO, are published in the document “Regional Supplementary Procedures-Rules of the Air and Air-Traffic Services”.

3.12 ANNEX 12: SEARCH AND RESCUE

Pursuant to the provision of Article 37(k) of the Convention the ICAO Council has adopted international Standards and Recommended Practices dealing with search and rescue. These are designated as Annex 12 to the Convention.

The Annex is applicable to the establishment, maintenance and operation of search and rescue services in the territories of Contracting States and over the high seas, and to the coordination of such services between States. The Annex also governs subsidiary procedures of regional application (Regional Supplementary Procedures – Search and Rescue).

The basic provision of the Annex is that Contracting States shall arrange for the establishment and provision of search and rescue services within their territories. Such services shall be provided on a 24-hour basis. A Contracting State having accepted the responsibility to provide search and rescue service in portions of the high seas or areas of undetermined sovereignty shall arrange for the service to be established and provided in accordance with the provisions of the Annex.

Contracting States shall delineate the search and rescue regions within which they will provide search and rescue services and shall establish a rescue co-ordination centre in each search and rescue region.

In each search and rescue region States shall designate as rescue units, elements of public or private services suitably located and equipped for search and rescue. The States shall, in turn, define the relative function of these rescue units and of the respective rescue coordination centre. Requirements for communication for search and rescue units are established in the Annex.

States shall coordinate their search and rescue organisations with those of neighbouring States. States shall also arrange for all aircraft, vessels and local services and facilities which do not form part of the search and rescue organisation to cooperate fully with the latter in search and rescue. Each State shall publish and disseminate all information necessary for the entry of rescue units of other States into its territory.

Each rescue coordination centre shall prepare a detailed plan for the conduct of search and rescue operations within its search and rescue region.

The Annex provides detailed operational procedures and signals to be used in search and rescue actions.

3.13 ANNEX 13: AIRCRAFT ACCIDENT INVESTIGATION

The Chicago Convention addresses the subject of investigation of accidents in Article 256.

This Article states that in the event of an accident to an aircraft of a State occurring in the territory of another State, and involving death or serious injury, or

indicating serious technical defect in the aircraft or air navigation facilities, the State in which the accident occurs will institute an inquiry into the circumstances of the accident, in accordance, so far as its laws permit, with the procedure which my be recommended by ICAO. The State in which the aircraft is registered shall be given the opportunity to appoint observers to be present at the inquiry and the State holding the inquiry shall communicate the report and findings in the matter to that State.

Although Article 26 is the basic article on this subject it does not preclude the taking of further action in the field of accident investigation which does not contravene the express terms of Article 26. The further action taken by the ICAO Council has been to develop the Standards and Recommendations in Annex 13, bearing in mind that a State may, according to Article 38 of the Convention, deviate from any provision of Annex 13 but not from the basic commitments covered in Article 26 of the Convention.

The specifications in Annex 13 apply to accidents occurring in the territory of a Contracting State to aircraft registered in another Contracting State. According to the Annex the State of Occurrence shall take all reasonable measures to protect the evidence and to maintain safe custody of the aircraft and its contents for such a period as may be necessary for the purposes of an investigation. The State of Occurrence shall also forward a Notification with a minimum of delay and by the most suitable and quickest means available to the States of Registry, Operator and Manufacture. The format and content of this Notification are specified in the Annex and so too are the responsibilities of the States of Registry, Operator and Manufacture regarding information and participation.

The Annex prescribes the responsibility for instituting and conducting an investigation, the organisation and conduct of an investigation and the rights of States involved in any way to participate in the investigation by accredited representatives and advisers. The basic responsibility is up to the State of Occurrence which shall institute an investigation into the circumstances of the accident. Such State shall also be responsible for the conduct of the investigation. When the location of an accident cannot definitely be established as being in the territory of any State, the State of Registry shall institute and conduct say necessary investigation of the accident.

The Annex prescribes three different kinds of reports which the State conducting the investigation has to forward to other States and organisations (Preliminary Report, Accident/Incident Data Report and Final Report).

3.14 ANNEX 14: AERODROMES

Pursuant to the provisions of Article 37(a, b) of the Chicago Convention the ICAO Council has adopted international Standards and Recommended Practices for aerodromes. These are designated as Annex 14 to the Convention. This Annex prescribes the physical characteristics and obstacle limitation surfaces to be provided for at aerodromes, and certain facilities and technical services normally provided at an aerodrome.

The interpretation of some of the specifications in the Annex expressly requires the exercising of discretion, the taking of a decision or the performance of a function by the Appropriate Authority. The responsibility for whatever determination or action is necessary shall rest with the State having jurisdiction over the aerodrome.

The Annex describes in great detail aerodrome data, physical characteristics for runways, taxiways, aprons and for visual aids for navigation like indicators and signalling devices, markings, lights, signs and markers. It also establishes specifications for obstacle restriction and removal. Most of the specifications in this Annex are classified as Recommended Practices.

The Annex requires that an aerodrome emergency plan shall be established at an aerodrome. This plan shall provide for the coordination of the actions to be taken in the event of an emergency occurring at an aerodrome or in its vicinity. Examples of emergencies are aircraft emergencies, sabotage, bomb threats, unlawfully seized aircraft, dangerous goods occurrences, building fires and natural disasters. The plan shall coordinate the response or participation of all existing agencies which, in the opinion of the Appropriate Authority, could be of assistance in responding to an emergency. These could be agencies on the aerodrome and off the aerodrome.

Rescue and fire fighting equipment shall be provided at an aerodrome, the level of protection depending on the dimensions of the aeroplanes using the aerodrome and frequency of operations.

3.15 ANNEX 15: AERONAUTICAL INFORMATION SERVICES

Pursuant to the provisions of Article 37 of the Chicago Convention the ICAO Council has adopted Standards and Recommended Practices for Aeronautical Information Services. These are designated as Annex 15 to the Convention.

According to the Annex each Contracting State shall provide an aeronautical information service or delegate the authority for the provision of the service to a non-governmental agency, provided the Standards and Recommended Practices of the Annex are adequately met. The State concerned shall remain responsible for the information published.

An aeronautical information service shall collect, collate, edit and publish aeronautical information concerning the entire territory of the State as well as areas in which the State is responsible for air traffic services outside its territory and this shall include the preparation of Aeronautical Information Publications (AIP), the organisation of NOTAM and the origination of Aeronautical Information Circulars (AIC).

Each Contracting State shall take all reasonable measures to ensure that the information it provides relating to its own territory is adequate, accurate and timely.

Aeronautical information published for and on behalf of a State shall clearly indicate that it is published under the authority of that State.

Each State shall designate its office to which AIP, NOTAM and AIC originated by other States should be addressed and States shall, wherever practicable, establish direct contact between aeronautical information services.

Aeronautical Information Publications shall include a statement of the authority responsible for the air navigation facilities, services or procedures covered by the AIP, a list of significant differences between the national regulations and practices of the State and the related ICAO Standards, Recommended Practices and Procedures and the choice made by a State in each significant case where an alternative course of action is provided for in ICAO Standards, Recommended Practices and Procedures.

At any aerodrome normally used for international air operations, aeronautical information essential for air navigation and relative to the route stages originating at the aerodrome shall be made available.

The Annex specifies in detail the content, format, distribution, etc., of AIP, NOTAM and AIC.

3.16 ANNEX 16: ENVIRONMENTAL PROTECTION

Standards and Recommended Practices for Environmental Protection have been adopted by the ICAO Council pursuant to the provisions of Article 37 of the Chicago Convention and designated as Annex 16 to the Convention. This Annex has two volumes. Volume I Aircraft noise and Volume II Aircraft engine emissions.

Volume I of the Annex contains specifications and evaluation methods for noise certification applicable to the classification of aircraft engaged in international air navigation and specifications to promote uniformity in measurement of noise for monitoring purposes. It provides an international noise exposure reference unit for land use planning and establishes noise abatement operating procedures.

Noise certification shall be granted by the State of Registry of an aircraft on the basis of satisfactory evidence that the aircraft complies with requirements which are at least equal to the applicable Standards specified in the Annex. States shall recognise as valid a noise certification granted by another State provided that the requirements under which such certification was granted are at least equal to the applicable Standards specified in the Annex.

The Annex prescribes that aircraft operating procedures for noise abatement shall not be introduced unless the regulatory authority, based on appropriate studies and consultation, determines that a noise problem exists.

Volume II of the Annex contains Standards relating to vented fuel and relating to emissions certification.

Certification related to the prevention of international fuel venting shall be granted by the certificating authority on the basis of satisfactory evidence that either the aircraft or the engines comply with the requirements in Annex 2.

Emissions certification shall be granted by the certificating authority on the basis of satisfactory evidence that the engine complies with requirements which are at least equal to the stringency of the provisions of the Annex.

Contracting States shall recognise as valid certifications granted by another State provided that the requirements are not less stringent than the provisions of the Annex.

3.17 ANNEX 17: SECURITY – SAFEGUARDING INTERNATIONAL CIVIL AVIATION AGAINST ACTS OF UNLAWFUL INTERFERENCE

This Annex was developed by the Council pursuant to resolutions of the ICAO Assembly under Article 37 of the Convention. A security manual for safeguarding civil aviation against acts of unlawful interference provides detailed procedures to assist States in the implementation of their respective security programmes required by the Annex.

Annex 17 requires that each Contracting State shall:

- establish an organisation, develop plans and implement procedures providing a standardised level of security in normal operating conditions, capable of rapid expansion to meet any increased security threat;

- establish a national civil aviation security programme;

- designate an appropriate authority within its administration to be responsible for the development, implementation and maintenance of the national civil aviation security programme;

- require the appropriate authority to establish means of coordinating activities between the departments, agencies and other organisations of the State concerned with, or responsible for, various aspects of the national civil aviation security programme;

- require the appropriate authority to define and allocate the tasks for implementation of the security programme as between agencies of the State, airport administrations, operators and others concerned;

- keep under constant review the level of threat within its territory taking into account the international situation and adjust relevant elements of its national civil aviation security programme accordingly;

- develop and implement training programmes to ensure the effectiveness of its national civil aviation security programme;

- as necessary, cooperate with other States in the development and exchange of information concerning training programmes;

- ensure the establishment of an airport security programme;

- arrange for the establishment of airport security committees;

- ensure that contingency plans are developed and resources made available to safeguard airports and ground facilities;

- ensure that duly authorised and suitably trained officers are readily available for deployment at their international airports;

- ensure that the appropriate authority arranges for the supporting facilities required by the security services at each airport;

- establish measures to prevent weapons or any other dangerous devices which may be used to commit an act of unlawful interference from being introduced on board an aircraft engaged in international civil aviation.

The Annex further prescribes that each Contracting State shall arrange for surveys and inspections of security measures and to require operators providing service to or from that State to adopt a security programme and to apply it.

The information and reports regarding acts of unlawful interference, to be provided by a State to other States concerned and to ICAO, are specified in the Annex.

3.18 ANNEXI 18: THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR

This Annex was developed in response to a need expressed by contracting States for an internationally agreed set of provisions governing the safe transport of dangerous goods by air. The provisions are based on the Recommendations of the UN Committee on the Transport of Dangerous Goods and the Regulations for the Safe Transport of Radioactive Materials of the International Atomic Energy Agency.

The broad provisions of Annex 18 are amplified by the detailed specifications of the Technical Instructions for the Safe Transport of Dangerous Goods by Air.

The Standards and Recommended Practices of this Annex shall be applicable to all international operations of civil aircraft. In certain cases the States concerned may grant exemptions. The States concerned are the States of Origin, transit, overflight and destination of the consignment and the State of the Operator.

Each Contracting State shall take the necessary measures to achieve compliance with the detailed provisions contained in the Technical Instructions for the Safe Transport of Dangerous Goods by Air. Where a Contracting State adopts different provisions from those specified in the Technical Instructions it shall notify ICAO promptly of such State provisions for publication in the Technical Instructions.

The transport of dangerous goods by air shall be forbidden except as established in this Annex and the detailed specifications and procedures provided in the Technical Instructions.

The Annex (and the Technical Instructions) provides rules and instructions for packing, labelling and marking for packages of dangerous goods. It further establishes the responsibilities of the shipper and the operator and establishes regulations for provisions of information regarding the dangerous goods proper to pilot-in-command, flight crew members, passengers, aerodrome authorities, etc.

Each Contracting State shall establish inspection surveillance and enforcement procedures with a view to achieving compliance with its dangerous goods regulations. Dangerous goods training programmes shall be established and updated as provided for in the Technical Instructions.

APPENDIX III

LIST OF PEOPLE VISITED AND WRITTEN SUBMISSIONS RECEIVED FROM ORGANISATIONS AND INDIVIDUALS IN THE NEW ZEALAND CIVIL AVIATION INDUSTRY

Written Submissions From

New Zealand Gliding Association
Mr R G Henderson, Chairman, NZGA Technical Committee

AALEDA Systems Limited
Mr N J Barclay, Consulting Engineer (Aeronautical)

The NZ Flying Schools Association Inc
Mr W J Wagtendonk, President

Mr R J Martin, private pilot, aircraft owners, Tauranga

Messrs R R Dawson & M A Talbot, commercial pilots, Auckland

Wright Products & Services (microlights)
Mr M J Wright, Proprietor

Royal New Zealand Aero Club
Mr R J Girdlestone

Aircraft Owners' & Pilots' Association (NZ) Inc
Mr B G Ferguson, President

Hele Travel
Mr C B Lewis

Mr W S Bell, Owner-pilot, Tauranga

Mr John Aitken, Airways Corporation of New Zealand Ltd

Fieldair Holdings Ltd
Mr W D Olsen, Managing Director

Meetings With

State Services Commission
Mr David Swallow, Commissioner

Auckland Regional Authority
Mr A G Dibble, Airport Manager
Mr T D Leadbeater, Operations Manager

Wellington International Airport
Mr G Moore, Assistant Manager

Christchurch Airport Authority
Mr H G McCarroll, Airport Director

Nelson Airport Authority
Mr T F Horne, Chairman
Mr P H Malone, Deputy Chairman
Mr M L Brown, Member
Mr E L Krammer, Member
Mr C Rennie, Airport Users Association
Mr M Clarkson, Airport Manager
Mr A Rose, Administration Officer

New Zealand Amateur Aircraft Constructors Association (Inc)
Mr Alistair McLachlan, Technical Director

Tauranga Aero Club
Mr Harry Scott, Manager & CFI
Mr Wally S Bell, Member

Nelson Aero Club
Mr Wayne Brown, President
Mr John Pearce, Vice President
Mr Brian Stevenson, Member Executive

Aircraft Owners & Pilots Association
Mr Brent Ferguson

Microlight Aircraft Association of NZ (Inc)
Mr Malcolm Wright

F A Brittain, MEB, Esq, Palmerston North

Mr R R Dawson, Kawakawa, Auckland

SunAir Aviation
Mr Daniel Power, Managing Director

Mr Peter Lacey, LAME, Nelson

AALEDA Systems Limited
Mr N J Barclay

Mr Gordon Willets, LAME, Auckland

Motor Holdings (Aviation) Limited
Mr B Sutherland, Operations Manager – Engineering
Mr B B Martin, Manager Engineering
Mr C Woolf, Marketing Services Manager

Pacific Aerospace Corporation
Mr A Hyde, Chief Executive
Mr N H Cribb, Engineering Manager
Mr H Clarkson, Quality Assurance Manager
Mr G Kettle, Manager Airframe Parts
Mr S Cartie, Design Assistant

Flightline Aviation
Mr M F Young, Manager

Flight Care Ltd
Mr M R Forster-Pratt, Managing Director

The Helicopter Line (Alpine)
Mr Don Spary, Executive Director
Mr Tony Hill, Regional Manager – Southern
Mr Tom Middleton, Corporate Pilot (Whirl-wide)
Mr Keith Mitchell, General Manager (Whirl-wide)

Marine Helicopters Ltd
Mr B C Barrow, Managing Director
Mr Lex Linklater, Operations Manager & Chief Pilot

Helicopters (NZ) Ltd
Mr Peter A Tait, General Manager

Commercial Helicopters Ltd
Mr Keith McKenzie, Governing Director
Mrs Robyn McKenzie, Director

Barr Bros Limited
Mr J T Barr, Managing Director

Griffin Ag-air Ltd
Mr H M Griffin, Owner Chief Pilot

Manawatu Aerial Topdressing Co Ltd
Mr B J R Forster-Pratt, Managing Director
Mr M R Forster-Pratt, General Manager

Fieldair Holdings Ltd
Mr W D Olsen, Managing Director

Airwork (NZ) 1984 Limited
Mr Craig Baker, General Manager

Air Policy Branch Policy Division, Ministry of Transport
Mr N G Mouat, Controller Domestic Aviation Policy

Air Services Licensing Authority
Mr Richard George, Secretary

Cookson Air
Mr B W Watson, General Manager

Corporate Flight Services
Mr D A Thompson, Chief Executive
Capt P A G Harris, Chief Pilot

Sea Bee Air Limited
Mr Murray Pope, Managing Director
Capt Norm Samson, Chief Pilot
Capt Michael Foster, Chief Helicopter Pilot

Air Safaris
Mr R C Rayward, Managing Director – Operations

Airline Pilots Association
Capt T E Watts, Technical Director
First Officer M A Talbot, Member

Ansett New Zealand
Mr Ken McDonald, General Manager, Airline Operations
Capt Colin Smith, Director of Flight Operations
Mr Ian Craib, Manager Engineering
Mr Bryan Costello, Quality Assurance Manager

Safe Air Ltd
Mr W R Tannock, General Manager
Capt Ian Pirie, Flight Operations Manager
Capt R A Guard, Training & Standards Captain
Mr J S Wilks, Engineering Manager

Eagle Air
Mr Don Good, General Manager
Capt Paul Wright, Chief Pilot
Mr Graeme Policy, Assistant General Manager Engineering
Capt Don Sinclair, Assistant Chief Pilot

Mount Cook Airline

Mr M L Corner, General Manager
Mr D M Walker, Chief Inspector
Mr E G Parry, Engineering Manager
Capt J G Jones, Operations Manager

Air New Zealand Limited

Mr James McCrea, General Manager Airline Operations & Personnel
Mr Peter Clayton, Consultant
Mr Ian Diamond, Manager Airline Operations – Technical Division
Mr Michael Neville, Company Solicitor
Mr V C M Dennehy, Contract Handling & Government Charges Manager
Mr Campbell Butcher, Government Charges
Mr Ross Anderson, Manager Security
Mr George Oldfield, Manager Safety
Mr Mike Flanaghan, Aircraft Maintenance Manager
Mr Don Hammond, Quality Assurance Manager
Mr Normal Taylor, Technical Services Manager
Mr John Mounce, Aircraft Maintenance Manager (CHC)
Mr Mel Payne, Quality Assurance Manager (CHC)
Mr Gerry Glover, Airline Operations Control Manager
Capt David Eden, Manager Flight Operations
Capt John Tanner, Flight Operations Administration Manager (Technical)
Dr Len Thompson, Principal Medical Officer

Airways Corporation of New Zealand Limited

Mr J F S Baldwin, Chief Executive Officer
Mr J F Shore, General Manager Operations
Mr I Oldham, Manager Corporate Quality Assurance
Mr G Spencer, Airways Modernisation
Dr R Edwards, Chief Engineer
Mr P Woodrow, Chief Air Traffic Service Officer
Mr H Grieve
Mr K Campbell
Mr S Quayle
Mr L Norrish
Mr Mc Sparham, Central Region Manager

Aviation Safety Board

Capt R Puttick, Auckland
Capt G B Williams, Christchurch

New Zealand Aviation Federation (Inc)

Mr J D Cook, President

Office of Air Accidents Investigation

Mr R Chippendale, Chief Inspector
Mr M B Wylie, Senior Inspector

Ministry of Transport

Mr W McCarroll, Director Corporate Services
Mr D M Smith, Officer Solicitor
Mr F Stewart, Assistant Director, Aviation and Marine Economics Division

APPENDIX IV

COMMENTS MADE BY THE CIVIL AVIATION COMMUNITY, THEIR ASSESSMENT, EXPECTATIONS AND REQUIREMENTS OF CIVIL AVIATION DIVISION AND THE REGULATORY SYSTEM

WRITTEN SUBMISSIONS TO THE REVIEW TEAM

Altogether 13 written submissions were received from organisations and individuals, some of these were also visited by the review team.

The following paragraphs contain extracts from written submissions. These extracts have been quoted word for word and we have made every effort to ensure these quotations are in the context of the whole submission.

A written submission from a company involved in air transport and aerial work lists a number of concerns and issues relating to the role and function of CAD:

"- The regulations and operation of the CAD must be directed towards the ensurance of safety as a prime role.

- The extent of involvement must, however, reflect economic and commercial viability.

- CAD's present philosophy is very strongly biased towards involvement in the day to day activities of the industry rather than as a regulatory and surveillance role and the system has become very bureaucratic.

- CAD has in place a licensing system to cover both engineers and pilots and ASLA has control over operators' licensing.

  Currently, however, the CAD issues licences to appropriately qualified personnel and then goes about monitoring their day to day activities or telling them how to do what they have already licensed them to do.

- To obtain economy and efficiency a system of self policing must be introduced with harsh penalties for non-compliance or substandard activities.

- CAD will, of course, use the old bogy of safety to justify their high cost activities arguing that prevention is better than cure, but prevention can be gained in other ways, albeit in a manner which will require a heavier hand from time to time.

- The obsession for officers of CAD to be "current", both engineering and operations, on all types and for pilots in CAD to maintain recent experience is also questionable. A traffic officer cannot necessarily drive or operate a 40 tonne "B" train Mack truck but he can police its activities.

- Due to the direct public involvement in air transport operations a reasonably regular surveillance is probably required to ensure standards are maintained.

  However, due to the generally very isolated operation of agricultural aircraft and lack of public involvement, surveillance is not only unjustified but is completely impossible. The requirement in this area is probably for no more than one competent officer operating throughout the country to cover complaints from the general public.

Harsher penalties for substandard activities would need to be available.

- One of the major problems with CAD is the system of recruitment and promotion. Personnel are recruited from general aviation and are in many (most) cases those people who are of average or mediocre ability. The promotion system ensures these people progress "through the ranks" and their lack of ability and competence is then reflected in the department's activities.

- The compiling of statistics to the **extent** required is also of dubious benefit. The cost to the operator and CAD is surely not justified.

- An added cost to CAD's activities is the "Flight Safety" magazine. In spite of the "safety" argument, I doubt it is of much value. If required, however, I suggest a contract by CAD with the "Wings" magazine to include in each issue say a 2-4 page section on Flight Safety to be contributed by CAD. Costs would be minimal and circulation would far exceed the present publication's most optimistic forecast.

- Although the department currently has a policy of consulting with industry prior to regulation, it is really a lip service only and what is required is a monitoring or "watch-dog" body representing CAD and the industry with authority to veto. Such a body would only require say two representatives from industry and two from CAD with a specialist representative co-opted to both sides as required. The body could be chaired by the Director but probably more appropriately by an impartial person.

- With respect to Ministerial control over the department's activities, there is little expertise in this area and the department needs only expound safety, either justified or not, to send the bureaucrats scurrying for cover under further regulation or requirement.

  It would therefore be only a matter of time before many advantages of a restructure were eroded."

A written submission from an air charter and aerial work operator suggests that:

"The present civil aviation regulations are unclear and ambiguous, therefore they are open to challenge by operators. The percentage of successful prosecutions taken is very low. The number of proposed prosecutions that are rejected within CAD prior to reaching the Crown Solicitor is very high.

There appears to be a proliferation of secondary and tertiary legislation in various civil aviation safety orders, aeronautical information publications, civil aviation information, circulars, *etc*. Such orders appear to be made with no consideration given to how they can be put into practice or enforced. If they cannot be sensibly enforced or put into practice, why should they be made? They certainly cause a lot of confusion and heartache to the operators who try and comply.

CAD officers should be there to assist and educate the operators. Invariably, these officers do not understand the rulings themselves, as the rulings are made at head office without any discussion with the regional or front line officers."

and further states that:

"Civil aviation regulation 1331 deals with basically three types of operations, namely, private, commercial work and air transport. As helicopter operations are so varied, I see it as being sensibly two operations, private and commercial. Private operations can clearly be defined so everything else must be commercial. As such, all commercial helicopters should be certificated to the same standard and operated to the same standards.

How the operation is conducted should be the responsibility of the operator and should be shown in the company approved operations manual. If this is not done, CAD should have clear power to suspend that operation for a period of investigation, without an injunction being taken out against them.

You have no doubt been made well aware of the views of the user, so I will not go on about those. What does worry me is the miniscule return to civil aviation of taking a successful prosecution. I would hazard a guess that the return on a successful prosecution is about 5% or less of the actual costs involved in making that prosecution. I can refer to numerous cases where the cost to CAD has been many thousands of dollars and the fine (if the case is successful) has been in the order of $75 to $150. Unfortunately, I can also remember cases where the Ministry has had to pay costs after unsuccessful prosecutions.

I strongly recommend that:

- the regulations be brought up to date for present day aircraft;
- they be simplified, particularly on helicopter operations;
- more responsibility be put on the operator for flight safety; and
- if fines cannot be appropriately increased, alternatively, the operation or licence be suspended for a period of time."

Owner-pilots in their written submission make the following comments:

"The Civil Aviation Division is a regulatory body, the same as the IRD, Police Department, Health Department, *etc.* We do not accept the need for any of its function except initial licensing paper work. The protection of the fare paying public is the prime reason for its existence. Let the fare-paying public pay for it.

If Government decrees we must abide by certain regulations to satisfy internal and international obligations, we are happy to so abide, provided they are reasonable and we are not expected to meet the costs.

Licensing: There is no need for any renewals. The licence should remain valid for ever, provided a current medical is held. (As in USA pilots' licences and NZ drivers' licences).

So far as non professional licences are concerned, we see no need for recurrent testing. Aero clubs, flying schools, *etc* will establish their own minimum requirements but it should not be a regulatory mandatory function of Government.

Airworthiness: Requirements for maintenance of aircraft are well laid down by the manufacturer. It is up to each operator to ensure his aircraft is airworthy in all respects and he is required by law to do so.

We see no need to protect the private individual on private non revenue operations from himself or his appointed engineer.

In all areas it is not sufficient for the New Zealand CAD to hide behind ICAO recommendations. These recommendations are adopted or ignored as the department sees fit."

The Royal New Zealand Aero Club (Inc) in its written submission suggests current aviation law is:

- vastly over burdened with detail;
- uncertain in its objectives with altogether excessive and paternalistic interest in non commercial activities;
- not in accordance with accepted traditional, judicial and constitutional process;
- too changeable and is therefore poorly understood;
- unable to offer compensatory benefits of significantly greater safety by international comparison; and
- has arguably resulted in a costly bureaucracy, a non innovative industry and decreased utility and economy."

The RNZAC goes on to say:

"In general we believe all classes of air operations should be restrained appropriately by operating rules and prohibitions that have minimal reliance on approvals, registration, licensing, inspection or other administrative interpretations.

Any systems for guidance, explanation, information, education, *etc* should be published in a format that is entirely separate from measures to have statutory affect.

Procedures for changing statutory requirements need improvement. Government should recognise that a technically complex field needs a recognised routine of review and that failure to achieve this will inevitably be backed to complex bureaucracy with a tendant demand for unwise delegation of legislative authority. There is a need also for a statutory requirement for notification of rule changes to include full information including estimated costs for the compliance and opportunity for comment.

In a regime as contemplated by RNZAC the present system of "orders, instructions and requirements" would be swept aside and indeed there is some doubt as to whether or not they have the effect of law.

There would be a return to a system of succinct regulations that stand with minimal reliance on bureaucratic interpretation.

To base the need for new laws and retaining of old laws on an objective test based on mathematical probability using local or foreign data bases and not utilising a subjective "possibility" test.

We consider that New Zealand should be able to establish a stable body of law that is more legally and practically effective, is more widely known and respected by aviators, and which is in accordance with normal constitutional practice."

A written submission from professional pilots as individuals suggests that:

"Many aspects of the Act and Regulations are becoming progressively, "shells" acting only to delegate further legislative authority. Rule substance has disappeared into a morass of "orders, instructions, requirements, information, and educational" material.

Minimum delegation of rule making authority (certainly no lower than the Executive Council) when combined with a clear understanding of the technical nature and application of valid administrative acts by officers of the department, is *not* consistent with the needs of a technically complex and changeable industry such as aviation.

On the other hand, delegation of tertiary legislative authority, particularly when parallelled with broad administrative responsibilities, is *inevitably* antagonistic to the prospect of a cost-effective, non-paternalistic bureaucracy and an innovative industry.

Section 29 of the current Act and Regulation 8A are the main sources of delegated authority. They are totally defective. Rules should be established using statistical probability from international domestic data bases, or alternative *objective* criteria. They should generally conform with ICAO recommendations but that should not be an excuse to avoid compliance with accepted New Zealand legal conventions. A statutory requirement should be included to ensure an appropriate emergency and routine system of rule modification encompassing the need for notice of change and consultation procedures.

If one department is to be given the responsibilities of administering the regulations, we believe it is important to clearly identify in the statute, the various roles of authority… *ie* policing, inspection, administration, licensing registration and approval, information services, educational services, promotion of industry activities, *etc.* The department organisation should be clearly consistent with such separate roles."

A written submission from people involved in flying training suggests that:

"The issue and renewal of aircrew licences, apart from having to show evidence of practical and theoretical ability, is essentially a medical matter.

Experience has shown an unwillingness by the authorities to accept this maxim and rely on expert opinion from the CAD's designated medical examiners.

Considering the issue of a licence, insufficient use is made of experienced talent within the industry. Theoretical training is provided by a number of schools and organisations, virtually

no use is made of their combined expertise. It would seem that the dogma of keeping training and examining well apart, is an entrenched attitude within the CAD. This is surprising because many professional qualifications in universities, polytechnics, *etc* are often taught by "outside" tutors and examined by them.

The matter is all the more surprising because practical flight tests "the other part" of licences, are frequently conducted by industry personnel. If these people can be trusted in one aspect of the issue, why not the other, theoretical, part?

The use of Massey University, in search of curriculum development, changes in examinations and possibly tutorial methods, is strong questioned. So-called research has been conducted for some years now and it seems that the pace is so slow that developments have overtaken the researchers by the time they feel they have come to some conclusions.

Research should involve an industry team, assisted by a university, not a university working in isolation by and large, and using personnel whose practical civil aviation experience is little to nil.

Considering the renewal of a licence/rating, the current method is hopelessly outdate, messy and expensive. We see no reason why an applicant for a renewal cannot just present him/herself to a DME, and, having been assessed fit for flying duties, simply continue in his/her career. The medical form could contain a paragraph to certify that minimum practical experience has been carried out, if renewal asks for such information. Apart from the medical fee, there should thus be no other charge.

Industry has for years impressed on government the need to re-establish the Ministry of Civil Aviation, operating on its own and not as part of another Ministry such as the MOT. Even at this late stage it would be desirable that a complete re-think be done on the establishment of an independent Ministry of Civil Aviation which should gobble up the present CAD and the Corporation. What a wonderful development we would see if the personnel in that Ministry were to be industry people running the department on a part-time basis!!"

A written submission from an aeronautical engineer suggests that:

"The first role of CAD is to publish **minimum** safety standards.

This requires that CAD publish up to date standards, standards that *do not re-invent the wheel,* but make the fullest use of overseas published material. Up to date standards will help restore credibility to CAD, minimise the difficulties with interpreting legislation and standards not applicable to some of the current aircraft. An additional benefit of up to date standards will be the dramatic reduction in the different interpretations of the existing standards.

The standards should recognise that aviation safety is dealing with events that have a very *low statistical probability.* New Zealand often does not have sufficient data to justify differences from leading overseas airworthiness authorities.

The standards should recognise that imported aircraft reflect the airworthiness and operational standards of the country of manufacture, and we should not require changes to aircraft from these countries whose aviation experience exceeds that of New Zealand.

The second role of CAD is to ensure these standards are met.

This requires that CAD act as *auditor to the aviation industry*, rather than try to act as an unpaid accountant. Significant guidance material is required to ensure the standards are uniformly applied.

The present over provision of free services by CAD reduces the willingness of industry to invest and provide the resources, relieving CAD of that burden and allowing it to concentrate on its standards function."

A submission from the New Zealand Gliding Association states:

"The Executive believe that the New Zealand Gliding Association has the capability to accept responsibility for airworthiness standards as well. this would require the NZGA to undertake the following activities:

- type acceptance of imported gliders
- type acceptance of homebuilt gliders of overseas origin
- the issue of certificates of airworthiness
- approval of repairs and modifications
- setting maintenance procedures and standards
- supervising homebuilding projects
- running an inspector education programme
- preparing and issuing airworthiness directives
- maintenance of a glider register
- issuing of engineer ratings.

The NZGA would employ a suitably qualified engineer as a full-time chief technical officer (CTO) to fulfil these responsibilities. He would be assisted by the airworthiness members of the regional technical committees.

The NZGA believes that it can establish examination and flight test requirements, satisfactory to CAD, to permit the issue of a CPL(G) for operators who wish to set up a commercial gliding activity. The NZBGA would accept the responsibility for the conduct of the testing and would recommend the issue of the CPL(G) to CAD.

To enable the NZGA to have full control over **all** gliding activities, it will be necessary to require all operators and owners of gliders to be affiliated to the NZGA. The intention of such legislation must be to making gliding activities by persons not affiliated to the NZGA illegal.

In summary, the NZGA believes that the present partial control of gliding operations in New Zealand can be expanded to provide the NZGA autonomous control of all gliding activities.

The NZGA would employ a full-time chief technical officer with responsibility for Airworthiness standards.

A number of regulatory changes will be necessary before this autonomy can be realised."

RESPONSE FROM INDUSTRY – VISITS

The following are a series of comments made by individuals during the review team's visits to various organisations and individuals. The comments are grouped into the following general headings:

- quality of regulations
- appraisal of CAD
- specific areas of concern
- industry prospects
- what should be done about the regulatory system
- airports/Airways Corporation/air traffic services
- enforcement.

It will be evident that there is a degree of repetition in the following comments. This merely indicates that more than on individual or organisation has made the same comment, sometimes using similar words.

QUALITY OF REGULATIONS: DUPLICATION, (IN)CONSISTENCY, LEGALITY LANGUAGE, LEVEL OF DETAIL, ENFORCEABILITY, RECOGNITION OF FOREIGN REQUIREMENTS

The present regulations do not reflect the fact that different parts of the aviation system operate on different safety levels.

CASO No 3 is an example of a good standard (Flight & Duty time limitations).

Fight & Duty time limits are set by industrial agreements and CAD rules. They overlap differently on domestic and international operations.

Certification of third-level operators with sophisticated equipment is made in the wrong category. It should belong to a separate group with more stringent requirements.

We need simplified regulations that can be enforced. The complexity today is such that no one can overcome it.

The current regulations are out of date. Requirements must be clear. Today it takes too much time to process anything.

The department insists on separate licences for each workshop within our organisation. Why? This means extra costs.

We do our own interpretation of the rules. Accomplish the job and take on the argumentation afterwards.

The regulations are so complicated that they are unteachable from an instructor's point of view.

All regulations are based on fixed wing aircraft and make little or no allowance for rotary wing helicopter operations.

CASO 3, Flight & Duty time limitations, does not give enough flexibility to utilise our equipment. It would be more practical to have a more flexible rule requiring each company to develop its own system within the framework set by CAD.

CASO 19 (Operation of Microlight Aeroplanes) is great. It should be amended to also include operations with ultralight gyrocopters.

We cannot get the flight standards people to agree with the airworthiness people… they have different interpretations as to their requirements.

There are a number of interpretation problems throughout CAD… maintenance releases is just one, flight defect reporting is another.

We want flexible Regs not rigid Regs.

There is a lack of sophistication and a good degree of technical difficulty in interpreting the Regs.

There is not enough consultation with the industry on drafting Regs.

Flight standards?... the Auckland region is the worst, the Wellington region is okay.

We don't like ICAO on the domestic scene.

Third level operations are governed as a general aviation operation not as an airline and so there are, to some extent, double standards being promoted by CAD… GAIs inspect third level operators rather than AIs.

CAD are too quick to adopt ICAO recommendations, practices and standards.

Until recently no-one really knew how to write or produce a flight ops manual properly… CAP 36 has tidied up a lot of the procedures.

CASOs should not exist… there should be just one book like the old AIP.

Ops Specs put out by CAD consisting of 22 pages should be burnt.

Airworthiness aspects of the Regs are okay but on the flight standards side we (*ie* helicopter operator) are continually having to go back to Civil Aviation to get an interpretation on many aspects like altitude, weather, etc… the problem is often in the interpretation of CASOs.

Customers expect a total safe operation so everything must be written down.

I now do it my way… but agree with CAD first, then do it my way; especially where the Regs and Orders require interpretation.

CASO hours of operation are simply ridiculous.

The airlines cannot (should not) be given total responsibility for flight safety.

The IFR network ceases south of Christchurch.

You cannot write global rules and regulations for helicopter operations and expect them to be used NZ wide… There is an absolute need to get helicopters into their own classification… If the regulations are to make sense then it is best to make the pilot responsible, he is unlikely to endanger himself.

For new entrants with no experience, the philosophy should be – let the buyer beware… The crafty operator will always beat the regulators.

Responsibility should be delegated to the pilot… The same philosophy should apply to airworthiness; it should be left to the manufacturer who is responsible for design and is responsible to maintain maintenance and other specifications for the aircraft.

In the regulation of helicopters you only need:

- a commercial pilots licence
- some general rules for flying
- the manufacturer's flight operations manual
- the manufacturer's maintenance manual.

There are far too many documents associated with the regulations.

There are a lot of grey areas in the regulations at present.

The IFR rules have more commonsense in them than the VFR rules.

Aviation law and the AIP documents are a shambles.

A simplification of the Regs and a simpler philosophy was supposed to be behind the changes to the 1983 Air Services Licensing Act… The idea being to free everything up and allow us to do our own thing, to make the operators responsible for their own operations and their own maintenance… This intention has been undermined by a raft of tertiary regulations. The situation is now worse than it was before the 1983 (ASL Act) changes… Now CAD seems to be making new rules and tying down the system and making it overall more restrictive for the operator.

Why does there need to be two standards for different types of civil aviation operations?... For example, take-off length for air transport operations versus private operations, same aircraft, same airfield, same pilot – also similarly for airworthiness and maintenance requirements.

CASO 19 is great – it is the envy of a lot of other countries.

The industry should be self-regulating.

Civil Aviation Regs get left behind… we have men on the moon but the Regs apply to the Wright Bros.

If the Regs do not say you cannot do it, then we go ahead and do it… we don't ask CAD whether we can do it.

The main problem relating to Civil Aviation Regulations are that the current regulations are out of date and the industry needs more user friendly regulations.

The regulations are only parts of the civil aviation machinery that are legal. All the rest are outside the law.

We ought to get away from the present NZ Civil Aviation Requirements, CASOs, CAICs. A new system should be easy to understand and not easy to misinterpret…

The emphasis in the Regs should be safe practice in the air not to make them (the Regs) perfect in court.

Regs, CASOs, *etc* have little to do or to contribute or to fit in with helicopter operations.

The thrust of regulations ought to focus on self-disciplining.

The flight ops manual is the guide… drawn up by the company and approved by CAD… if the company works outside the flight ops manual then the company should be stopped from operating by CAD.

The regulations are totally useless for helicopters.

There is a whole paraphernalia of tertiary stuff (CASOs, CAICs, CARs, etc.) that could be done away with.

There are major difficulties between helicopters and fixed wing as far as the Regs are concerned.

CAD should go for sensible regulations, a professional staff and the teeth to administer the regulations.

Far too many regulations.

Regs are contradictory.

The approach to drafting civil aviation regs should be similar to section 61 of the Queen's Regs – conduct prejudicial to good military discipline.

Politicians are scared of allowing public safety to be prejudiced but people will continue to be killed no matter what is done in the regulations.

At the moment the system in NZ is such that the operators are spending their time defending themselves against the system.

The system in NZ seems to avoid the flaunters but spends an inordinate amount of time on those who observe the rules.

The industry should be self-policing… you simply cannot legislate against (for) idiots.

If the Regs were to be simplified, fine, but there would need to be some safeguards to stop a proliferation of tertiary regulations like CAICs and CASOs.

APPRAISAL OF CAD: Working methods, efficiency, organisation, staffing, qualifications

CAD has a duty to provide the industry with a basic structure and information to enable those in the industry to do their job.

We had a formal CAD audit last year. Before that it went three years.

We have never had a reason to complain over the CAD performance.

We would never pay for CAD services. The costs are transferred to our customers.

CAD Head Office is doing a lot of engineering design work free of charge for the industry today.

It took two years to get our MEL approved by CAD.

Inflight Defect reporting system: CAD Ops and airworthiness people have different interpretations of the requirement. They seem to be two separate organisations.

Our relationship with CAD gets out of kilter when we have any dealings with CAD head office, its okay and satisfactory at a regional level.

We have no difficulties with our CAD general aviation inspectors. The cooperation is based on personal relationship.

When the requirement to install underwater locating beacons was imposed on us, the equipment was not available in the country.

Too many ex Air Force men within CAD lacking commercial experience. We did not have a qualified CAD inspector (Ops) here for 2.5 years.

CAD is too top-heavy.

The flying schools' performance is checked by a Cad inspector every six months.

The amount of unnecessary money spent by CAD on postage fees must be enormous. No coordination of routine mailing seems to take place.

Why must CAD operate their own aircraft? It must be more cost-effective to hire aircraft when needed from flying clubs, *etc.*

The people at the department are not acting as managers. They work as engineers.

The greatest problem with the department is the people. They are too much influenced by either the British system or the Air Force.

If the CAD people don't know, they have a tendency to say no.

We have had two base inspections in four years. No feedback or report was given the last time they were here.

The regional airworthiness engineer did not get any delegated authority of use. Worked only as a post office.

"Chief inspector authorisation" NZCAR section G5 was revised 15 Dec 1982. This was a major change without consultation or proper lead time.

Engineering support from CAD is not provided as expected.

The Ministry looks after the general aviation. Air New Zealand looks after itself.

The interpretation of regulations is different between regions. Total cooperation in the South Island.

We see nothing but additional costs coming out of the system at this stage.

The district surveyor is the person we deal with. We talk to him daily. This procedure is accepted by Wellington to be convenient. Fighting the bureaucracy takes a lot of effort.

The promotion within CAD is based on seniority instead of performance. A good inspector is promoted into a poor manager.

The people within the CAD are generally pretty good. The engineering side causes the most trouble.

Security. Cost analysis done some years ago. The outcome was that all organisations involved were overstaffed. We would not like to see more than one organisation (except the Police) to perform security services.

The anti-terrorism protection is very costly to implement (Annex 17). This experience cannot be borne by the airline alone. The user pay concept cannot be applied to treatment of terrorism.

If we are to pay for CAD services then we would expect service:

We don't mind paying for what we specifically want from CAD.

There is a major communication problem between CAD head office and the regions… they appear to be two completely different organisations.

CAD people, resources and organisation?...

- the people are OK
- the resources are not so good
- the organisation is not so good.

A civil aviation regulatory body should be:

- efficient
- answerable (in the sense of preventing the authority from getting out of hand)
- fair.

It takes months and months to get a major rating examination and two years to get an approved MEL.

We have a good relationship with the GAIs.

There is a lack of airline standards.

Flight standards costs of surveillance should not be paid for by the operator – spread the cost through the system.

We see surveillance as checking on the chief pilot and training captain – we need surveillance to ensure we are doing the right thing.

Are airline inspectors necessary?

CAD needs to change its profile.

CAD tend to use safety as a lever for getting into the mechanics and day-to-day operation of a company. What is required is surveillance, not involvement… for example, CAD approve LAMEs then place two surveyors at Palmerston North to survey the local operation – instead they should monitor the engineers on an *ad hoc* basis… Under this system the company should pay for the specific visits which would mean that the bad guys pay more…

One of the major problems with CAD is the system of recruitment and promotion.

The Department seem to be their own auditor and if something happens, perhaps additional activity or whatever, they simply get another GAI without looking as to how their resources might be best deployed.

CAD are trying to cover themselves with the detail of regulation because of the spate of recent accidents.

On some commuter operations the experience level is very low and so some operators require a detailed degree of regulation.

CAD do not have enough GAIs.

The AIP is now a cover rather than a book… CAD issue many, many pieces of paper, much of which are irrelevant, to be filed under the cover of the AIP.

CAD retain too much power in head office.

The competency of CAD airline inspectors has not been too good in the past.

Airline inspectors don't need a licence or rating.

The maintenance release does nothing for us… if the owner of the aeroplane is not the maintainer then there may be a need for a maintenance release.

The maintenance release and annual inspections should be combined into one document.

CAD should not be involved in MEL approvals.

There is also the "Air Force thing" which comes through CAD[1].

The end result of paying for CAD people to get a type rating and for them to attend a mechanics course (overseas) was that the introduction of the aircraft into New Zealand was very smooth and we also go a great deal of assistance from CAD.

The Government should put money into obtaining the top people in their field… the system is only as good as the individual… However, money is only part of the attraction, job satisfaction is a large part of it too.

CAD spend hours getting their priorities wrong!

CAD need the ability to change things quickly.

CAD suffers from a lack of practical experience in civil aviation.

There is a perception in CAD that CAD people are the leaders and managers of the civil aviation industry in New Zealand.

CAD should be an autonomous self-contained organisation.

Audit control is something that should be introduced more widely whereby surveillance is carried out by looking at the paper work only.

It's not CAD's function to fly or maintain aircraft – so why do they send a pilot plus an airworthiness engineer to an overseas company to train on the aircraft?

[1] "Air Force thing" refers to a perceived Air Force and Air New Zealand old boys club.

We do not have the facilities in New Zealand to recertify aircraft already certified… recertification of aircraft already certified is a complete waste of time.

CAD general aviation inspectors have a negative attitude… They don't want to rock the boat… if they are not sure they say, no!

GAIs should be a career job and enable pilots to work up through the whole system.

The civil aviation industry gets different answers from different people within CAD… no-one wants to make a decision.

If things are hurried through CAD the answer is NO… They have their priorities upside down.

CAD need to be more flexible and to show urgency… our frustrations are more to do with the paper work.

There is a lot of confusion within the civil aviation industry on the interpretation and there is a lack of consistency between regions.

CAD lack an appreciation of the commercial consequences of what CAD are asking the industry to do.

There is difficulty in flight testing… this relates to lack of consistency in standards in the grey area.

CAD staff are good and approachable people. They do, however, need more practical people and in recent years they now have more practical people in the organisation… CAD used to be a bit like the Kremlin but it is now more democratic (*eg* flight operations)… On the engineering side everything seems a struggle and this provides more hassles for the industry.

There are two roles for CAD: one policing and one inspection.

If CAD are to be part of the decision making process in civil aviation then CAD must be capable of making a decision.

CAD is very short on industry experience.

There would be much benefit to be gained from an exchange posting in the airworthiness area between CAD and the airline industry.

There is a gulf of knowledge within CAD that either needs to be fixed or recognised: so CAD must let us get on with it and give the airlines greater autonomy… but the problem here is that smaller operators cannot be autonomous.

There are a lot of people in CAD who are very good and trustworthy but senior positions are not managed properly…

Our main frustration has been, and is, that no-one in CAD would put anything in writing (*eg* flight operations).

There appears to be a lack of standardisation in (personnel) licensing… every time we put up a licence there seems to be a new set of rules.

There is no sense of urgency or timing within CAD.

There seems to be a lot of confusion in civil aviation about how things should be handled that are not in black and white.

The CAD problem is that they are all ex air force, or those that aren't can't cut it with the airlines… all airline inspectors should be training captains at least.

There is lots of flight ops documentation that is not up to date… we no longer rely on CAD… we will in future survey ourselves.

The people employed by CAD should be of like experience to those whom they are regulating.

CAD people should be alerted that they are responsible for licensing and administering and servicing a commercial operation… they knock off at 4.30 pm on a Friday.

There is a need to get CAD out of the public service mentality.

There is no enough consultation with new requirements.

CAD should have a more flexible policy.

The flight ops area of CAD appears to regulate by immediate reaction… rather than looking closely at the global situation.

The GAIs and airline inspectors just do not have the relevant experience for our operation.

There is a shortage of people in CAD with design and modification experience.

The calibre of airworthiness people in CAD in our region is okay.

Degree engineers really haven't got much of a clue on the practical side of airline operations.

Nine out of 10 NOTAMs issued don't apply to us… we receive 16 pages of NOTAM information prior to a flight to Queenstown or Wellington.

CAD must delegate.

CAD tends to manage in detail… The Regs are such that they do not allow the regulators to deal with problems – they don't have the regulations which will allow CAD to deal with specific problems… The idea of managing is to solve problems… not going around searching for problems.

CAD should adopt the philosophy of management by exception… if the operation goes okay then leave them alone; if not then fix the problem.

The best side of CAD is the reporting of faults for airworthiness and the feedback.

CAD head office use ICAO like a club. ICAO should not be used to hammer VFR operations or general aviation.

Over the years CAD have eroded the freedom and delegation of authority for flight tests, gradually taking it away.

CAD is doing its best to stay away from microlights – we like that.

CAD are stepping back further from microlights and we (*ie* MAANZ) are happy to pick up additional responsibility… but there are some aspects that need to have an eye kept on them, like first of types.

SPECIFIC AREAS OF CONCERN: Pilot licensing including medical assessment, mechanics licensing, import of new aircraft types

We feel that renewal of an engineers licence is not worth NZ$150.

We know of no fatalities in NZ during single engine IFR private operations. More accidents occur VFR. Minimum safe altitude in mountainous terrain is normally higher than the single engine performance of no-turbocharged twin-engined aircraft. Why not accept commercial single engine IFR operations?

No foreign approved system like STC seems to be acceptable to CAD. This is costly for the industry (and CAD).

Foreign training facilities well recognised like the US "Flight safety" are not approved by CAD without a costly exercise including visits to the US.

Corporate jet aircraft can operate N-registered "forever" without surveillance. The operators keep the aircraft on US register because the time and costs involved for import to NZ are unacceptable.

The cost figures mentioned for the Flight Safety magazines seem too high. Alternate methods for publishing of flight safety related information should be investigated.

The surveillances by CAD is necessary. The pricing should reflect that "bad guys pay more".

The department should be established as a totally independent body. Make sure that flight standards and airworthiness meet within the organisation. This is not the case today.

Make sure that the "aviation inspector" will be respected based on formal training requirements and job rotation with the industry.

The department has a limited travel budget. The result is very long intervals between visits to survey the delegated approval given.

The industry should have an impact on what people go into the "new" CAD.

We do not have the facilities in NZ to recertify all aircraft imported into this country. All first of type data is provided to CAD. The processing takes too much time.

Recovery of CAD training costs when introducing a new aircraft to NZ is unfair. In addition CAD officials travel overseas to approve the training. A reasonable system would be to provide familiarisation training in NZ.

Our license system is only there to provide an opportunity to collect money. Why don't we accept the well proven FAA licensing system?

The department must be more user friendly. Make people accountable and qualified – not from the Air Force.

LAMEs licensing should be done by technical institutes.

CAD do not have the capability to set LAME subjects or the syllabus.

There is no structured education for LAMEs in NZ.

Airline manpower planning has been very poor.

Pilot training syllabus is outdated for CPL.

ATPL flight planning exams are still based on DC8 operations… aircrew are no longer doing flight plans.

This pilot training curriculum review is too difficult and wordy for the industry to understand.

There is a shortage of both LAMEs and tradesmen.

There is a need for examination on demand.

There are too many accidents relating to helicopter operations after dark… there must be a set of rules and the rules must be policed.

Wire marking is mot unsatisfactory… there is no one legislative body responsible for marking wires… on the other hand, CAD accepts lights on aerials but not on wires… There is no requirement for power boards to do anything to mark wires… "think wires".

Third level operators have taken all our instructors.

The accident rate for IFR operations appears to have diminished in recent years – certainly for private flying.

There is support for no CPL without an instrument rating.

Aviation security should be linked to the customs and police rather than being contracted out.

I don't see any difficulty with the issuing of a LAME by a polytechnic provided CAD have the ability to lift the licence at any time.

Since 1983, with every hour logged, there are two hours not logged (airworthiness).

The Amateur Aircraft Constructors' Association could be responsible for safety, quality assurance and aircraft surveillance during the whole of the amateur aircraft construction phase.

The best thing is to have no air transport licence at all and not have the GAI sitting on your shoulder.

To renew a PPL one should only need a medical.

A licence should be forever, subject only to a medical.

The new LAME rating system could have been eased even further to allow LAMEs to do what they think they can do in terms of aircraft maintenance.

At the moment an exam determines whether you have a minor or major licence; rather experience and tooling should be the determining factor… Why not attach major licences to company approvals, whilst individual engineers maintain minor licences?

There is a need for ultralight gyrocopters to be included in CASOs; they could come under CASO 19.

The department has no understanding on the commercial aspect of delays due to paper work. The aeroplane may stay on ground waiting for a formal approval of a crash axe.

The documentation provided by CAD is incomplete. Probably because the processing is based on old manual technology.

In the transition between the present and the new licensing system for engineers, some privileges held for a number of years have been taken away.

The public has to be protected. Getting the right people for the job is essential. To keep them, job satisfaction comes before money. When you hear the blokes laughing, you know they are happy.

Every aircraft has to have an amendment to the approved flight manual including new performance diagram. Why cannot CAD accept the original flight manual approved by the state of manufacturer?

18 months ago the CAD changed policy not accepting draft modifications anymore which were not substantiated by engineering calculations.

CAD has trouble coming up with questions for written exams. They are either not up to date or wrong. We have offered our help to write questions for the CAD data bank.

Pilot criteria should be set by the CAD based on a strong industry support. In general, CAD has had a predetermined decision in the past, calling in a committee to justify its view.

Flying clubs are increasing their training activities. Hard to get instructors. The instructor's true objective is to accumulate enough hours to fulfil Air NZ's entry requirements.

Many extra requirements have been forced on the operators like operations manuals and maintenance manuals. Why must the ops-manual duplicate information that is already published in the approved Flight Manual?

PRESENT SITUATION AND PROSPECTS FOR THE AVIATION INDUSTRY

We must maintain a manufacturing capability in NZ to produce spare parts. We are looking for alternate work from the Army and Air Force.

We do not provide in-house formal training to be an engineer. Difficult to get trained people.

Our rate of production is not large enough to justify quality monitoring by statistical methods.

It appears that the engineering trade does not attract people today. Hard to get licensed engineers. Turnover 18 months.

Lots of applications for pilot positions but turnover also great, which creates high training costs.

The quality and experience level of pilots coming through the system in the future will decrease.

The promotion of airline pilots is too fast in the industry today. This may affect the level of experience at captain level. This is a result of poor manpower planning within the airlines.

Training of new agricultural pilots must be organised. The experienced pilots available today will not last forever. New pilots should start under supervision.

Research and development within the Ag-sector has been dramatically reduced. The potential to cope with a future increase of aerial work ahs been reduced.

The operator should be approved. If the individual pilot does not perform, the operator should be addressed and brought into line. The internal Ops-manual should describe what kind of operations the company is allowed to perform.

Within the agricultural industry, since 1983, probably for every hour logged an additional two hours have been flown unlogged.

For safety reasons we must have one common policy fleetwide. It is not possible to differentiate between domestic and international operations with the same type of equipment.

It should be realised that general aviation is not an unlimited market… if costs increase and if general aviation can't afford the increase, they simply will not operate.

As an airline we recognise we have to pay for the “image of safety”.

CAD cannot be given a profit target as far as their pricing policy is concerned because they are in a monopoly position.

CAD is dealing with an industry which operates and lives off small margins.

Because farmers want a total cost this tends to put more pressure on (topdressing) pilots to cut corners.

We must now learn to play by the rules… know the system… it is a hard line of business, aerial work operations.

There has ceased to be corporate type organisations carrying out aerial work and associated aeronautical engineering… today we have a gaggle of one-man bands.

The *volume* of aerial work has decreased in total by 75% since 1982/83… the number of licences may have increased but the volume has decreased.

Flying training is on the way up… activity increased 30-40% over 1986.

There is a problem with flying training and that is the availability, or rather non-availability of instructors.

Safety in aviation should take a low profile… There are two types of operators in civil aviation: those who have had accidents and those who are going to.

General aviation does what is adequate… whatever works is adequate… general aviation will never have the money to do what it wants to do.

There is a lack of technical discipline in the NZ aviation industry from both pilots and engineers… to correct this there needs to be good basic training plus a far better management input.

The economic factors are very important to the civil aviation industry and these are not understood by CAD… they are not commercially attuned.

If the general aviation industry was deregulated then the fly-by-nighters would threaten aviation safety.

The introduction of the qualitative licensing system has:

- stopped R & D
- scaled down the whole industry, especially aerial work
- resulted in exporting qualified people from NZ.

Another overhaul of the Air Services Licensing Act is due…

If the flight ops manual is comprehensive enough and approved by CAD then this would do in lieu of licensing.

The main thing about aviation is maintaining standards… the industry does not want to let standards go…

The department hasn't given much recognition to the economics of the industry, *eg* the switch to 1000 MHZ DME about 20 years ago… There was no dialogue on technology, the quality of transponders.

We would like to see more of CAD in an audit situation.

As far as safety is concerned, the country, individual companies and operators should have what they can afford… These are the expectations… My wife has all sorts of expectations I cannot afford.

WHAT SHOULD BE DONE TO THE REGULATORY SYSTEM?

No renewal should be required for pilot's licences. A simple medical check like in the US system would be sufficient.

Being a helicopter operator, we have a great deal of doubts about the present regulations applicability to helicopter operations. The helicopter review committee did a lot in the early eighties. Its effort fell flat in 1981. The present regulations should exclude helicopters. New regs should be drafted for helicopters.

The way must be to start with the Act. The Act today enables people downstream to issue quasi-regulations such as CASOs and CAICs. More power should be given to corporate types. Private pilots should be policed by the law.

A system similar to the US "Notice to proposed rulemaking" should be introduced in NZ to facilitate industry participation in changing of the regulations.

Whatever changes that will be introduced, the most important thing is a proper implementation.

Civil Aviation Regs should be simplified and the Regs should be capable of being enforced.

We should get rid of all the peripheral documents like CASOs.

There should be specific regulations for air transport operators, air work operators and balloons.

For the safe operation of aircraft there is a need for very simple rules… Civil Aviation

Regulations, however, are currently:

- complicated
- antiquated
- duplicated
- contradictory.

A prescription for better and more effective civil aviation regulations is:

- to take note of ICAO
- more accountability
- better qualified people
- not people from the Air Force (you don't have civilians running the military)
- the people administering their departments must be responsible for the action of their departments.

The industry view is that more responsibility should be placed on the individual involved in the operations.

The systems needs to have much greater delegation to enable us to police our own operation.

There can be a single catch-all philosophy for aviation safety. That is due consideration must be given to other parties and to property and total good aviation discipline and sense.

The regulatory body should:

- set the standards
- monitor the standards
- publish a book that tells what the standards are.

One has to decide whether the regulation should be written for the practical people to improve safety or to be written to be used in court.

There needs to be a better quality of regulation in order to lower the ambition level.

Civil Aviation Regulations should be in the middle ground between complete deregulation and total regulation; perhaps biased towards regulation.

The system is there to protect the fare paying passenger… how much money do you have to pay to protect yourself from yourself?

The Act and Regulations should be:

- orderly: that is stitching up the requirements of the various sectors in a way that reflects the expectations of the participants;
- safe: the expertise is already available within the industry and so use it… don't be unduly influenced by the "big boys"; and

- economic: the system at present is wasteful… the system has merely been reregulated or relicensed.

It is time the whole aviation industry, including general aviation, did a lot more of their own administration and to take a lot more responsibility for their operations and actions.

I see nothing but additional cost coming out of the system and the environment in which we are operating.

I hope the revision of Civil Aviation Regulations will widen the extent of delegated authority in flight operations as well as airworthiness, provided always the travelling public's interests can be protected, and I hope we can have greater acceptance of this principle (of more delegation).

The grey area is the exact point of delegation.

The ICAO framework probably provides the minimum level of regulation.

The consultative process needs to be improved… Time is needed to consult with the industry on proposed changes to the rules and regulations and also time is then required for industry to put forward its own views.

AIRPORTS/AIRWAYS CORPORATION/AIR TRAFFIC SERVICES

We believe that CAD has created an industrial problem by reducing the fire brigade. They should resolve the reduction before the responsibility is handed over to us at the airport.

If an airport licence means standards, we want a licence. Today we don't know what standards we have to meet.

The line of responsibility between the airport and Airways Corporation is unclear. We don't know enough about the future.

The partnership with the policy division of MOT does not work properly. One partner is dragging behind.

The airport standards are well defined based on ICAO standards and recommendations.

The air traffic system is now becoming inadequate in terms of capacity.

The MET system is good.

The minimum standards for air traffic control services are not written down anywhere.

Airways Corporation sees itself as an autonomous body which thinks it sets its own standards.

Must have a body setting the regulations and policing the system and setting the standards.

NZ's standards are lower than ICAO.

ATC in NZ is 20 years out of date.

There are non standard (ATC) procedures evident between regions… and there are even non standard procedures evident between shifts in the same region.

Procedures are based on a DC3 or F27… even with new equipment, the Airways Corporation won't overcome the majority of its problems.

ATC tower controllers are responsible for too much.

ATC procedures are terrible.

In the past the airport authority was very much a land side responsibility. Now, with the airport company, things might change.

We (the airport company) do not know who is responsible for (aeronautical) publications.

The current security arrangements on airports are totally inefficient – it is absolutely ridiculous to have a great concentration of men on the international side of the airport and none on the domestic side.

Equipment that could be maintained by an electrician should belong to the airport while equipment maintained by electronic people should belong to the Airways Corporation.

The movement control on the tarmac is an unclear area. We have no delegated authority in our aerodrome licence to take appropriate action.

The aerodrome is inspected every year. The only thing checked seems to be the medical kit.

There is a lack of standards within the air traffic system, there are a lot of air misses.

Pricing of services provided by Airways Corporation must not be built around a profit target.

The mix of traffic IFR-VFR during approach to Wellington creates situations where pilots don't know if the approach will be visual or performed as an instrument approach.

The policy for which operations require ATC service versus aerodrome flight information services is unknown. The same goes for unattended airports.

Heaps of pages of NOTAMs have to be reviewed when planning a flight from Christchurch to Wellington. Some of the information has been valid for 18 months. This is unacceptable and dangerous.

There is no protection provided to handle a monopoly situation if the Airways Corporation and/or an airport company abuses its position.

The NZ Aeronautical Information Publication (AIP) has deteriorated to a book without value.

ENFORCEMENT: CAD SUCCESS RECORD, GENERAL COMMENTS ON ENFORCEMENT, ENFORCEMENT METHODS

The regulatory function has not the teeth required to enforce the regulations.

The courts have not been sympathetic to safety philosophy. If nothing serious has happened, the case is thrown out.

Half the trouble is that CAD does not have the power to enforce its own regulations.

There have been very few cases of disciplining offenders within the civil aviation system in civil courts.

To obtain economy and efficiency a system of self-policing must be introduced with harsh penalties for non-compliance or sub-standard activities.

The Regulations are unenforceable and so they are useless.

The reality is that CAD do not have the authority to get past their front door… compare CAD to the FAA and the US$30 million fine dished out by the FAA to Delta Airlines.

CAD need the teeth to enforce the regulations.

The enforcement of civil aviation regulation sin NZ is a farce… to date the record is 446:2 in terms of convictions, in our favour, and we pleaded guilty to the two charges we were hit with.

If the industry is going to have a regulation then it should be enforceable for everyone.

CAD lack the teeth to enforce the regulations.

Any aircraft operator who wants to cheat can find it easy to cheat the system.

APPENDIX V

CONTACTS WITH AND SUBMISSIONS FROM THE CIVIL AVIATION DIVISION MINISTRY OF TRANSPORT

WRITTEN SUBMISSIONS FROM

R J Bailey	(Senior Standards Officers
P L McDermott	(Air Traffic Services (Standards)
R W Phillips	(Airways Operations Branch)
M C Hingston	Technical (Standards) Airways Operations Branch
David L Yeomans	General Aviation Inspector Flight Operations Auckland
Ian H Gemmell	Airline Inspector Flight Operations Auckland
D Taylor	Senior Computer Operations Officer Information & Special Projects Airways Operations Branch
J F Snow	Controller of General Aviation Standards Flight Operations Branch
E T Labett	Chief Airworthiness Engineer Airworthiness Branch
P E Sargeant	Assistant Chief Airworthiness Surveyor (Operations) Airworthiness Branch
R J Doggett	Airworthiness Engineer Airworthiness Branch
J A G Bruce	Senior Airworthiness Surveyor Airworthiness Branch
W N Moffatt	Manager Information & Special Projects Airways Operations Branch
S G Blair	Systems Engineer Airways Operations Branch
N G Osborne	Controller Aerodrome Requirements and Navigation Services Airways Operations Branch
T J C Joy	Chief Controller Aviation Security Airways Operations Branch
K J B Cranston	Controller Airline Standards Flight Operations Branch

A W Schischka	Airworthiness Surveyor Airworthiness Branch

PEOPLE VISITED

NORTHERN REGIONAL OFFICE

T Masters	Regional Civil Aviation Manager
B T Farrell	Regional Airworthiness Superintendent
E S Watts	Superintendent Flight Operations
D L Yeomans	General Aviation Inspector
I H Gemmell	Airline Inspector
R Harman	Airline Standards Officer
P N Hayes	Airworthiness Surveyor
B L Crook	Investigating Officer
M G Good	District Airworthiness Surveyor (Ardmore)
D M L Kertel	Airworthiness Surveyor (Ardmore)
B Morris	Airworthiness Surveyor (Ardmore)
A R Lee	District Airworthiness Surveyor (Hamilton)
I S Black	Airworthiness Surveyor (Hamilton)

CENTRAL REGIONAL OFFICE

W Griffiths	Regional Civil Aviation Manager
L O Hodgson	Superintendent Flight Operations
I F Stobba	Regional Airworthiness Superintendent

SOUTHERN REGIONAL OFFICE

C Payne	Regional Civil Aviation Manager
V Carter	Regional Airworthiness Surveyor
N R Kennard	Superintendent Flight Operations
R L Crooks	Chief Aviation Security Officer

HEAD OFFICE

S McIntyre	Director of Civil Aviation
R G Roberts	Deputy Director Civil Aviation
E Evans	Manager Flight Operations
P J G Hollier	Manager Airways Operations
W R Heald	Manager Airworthiness
W N Moffatt	Manager Information & Special Projects
T J C Joy	Chief Controller Aviation Security
G C W Watson	Controller Civil Aviation Administration
R Griffiths	Principal Medical Officer
P Dodwell	Medical Officer

E T Labett	Chief Airworthiness Engineer
M J Baker	Chief Reliability Engineer
G T Lee	Chief Airworthiness Surveyor
P J Davey	Chief Airworthiness Surveyor
N G Osborne	Controller Aerodrome Requirements and Navigation Services
K J B Cranston	Controller Airline Standards
J F Snow	Controller General Aviation
O V Batchelor	Controller Flight Test Standards
B Stanley-Hunt	Controller Personal Licensing
I R Fergusson	Operations Manager Flying Unit
P J Nalder	Senior Airline Standards Officer
C Crook	Flight Crew Examiners (Curriculum Development)
R L Randal	Chief Examiner (Flight Crew)
J J Leech	Airline Standards Officer
A Kenworthy	Chief Maintenance Engineer
H J Coventry	Special Projects Officer
M P Smith	Chief Examiner (AME)

APPENDIX VI

COMMENTS MADE BY CIVIL AVIATION DIVISION STAFF ON THE REGULATORY SYSTEM AND THE ORGANISATION, ADMINISTRATION AND RESOURCES OF THE CIVIL AVIATION DIVISION, MINISTRY OF TRANSPORT

Written Submissions To The Review Team

Sixteen written submissions were received from 18 people; two were from people based in the regional offices. The following are extracts from written submissions received from CAD personnel. The extracts are quoted in precisely the same words used in individual submissions and we have tried to maintain the context of their meaning.

> "CAD is tied down by being a minority in the MOT. Does not have control of its admin staff (typing, records, etc).
>
> Regulations and requirements require rewrite to bring into the world of 20th century technology. Need writing in plain language.
>
> Management of CAD requires critical reappraisal. Terms of reference for incoming managers must include satisfactory demonstration of management skills and organisation ability.
>
> Chief surveyor should have ultimate control of all surveyors regardless of location. Direction of regions (survey) should be from HO to ensure NZ wide standards."
>
> "To allow CAD to be effective it should be operated as an independent authority divorced from the direct control of any Government Ministry.
>
> The legality of NZCARs and CAICs is doubtful. They should be introduced in a similar form to the Australian Air Navigation Orders and American Federal Aviation Requirements.
>
> "There appears to be a tendency for GAIs to side with the industry because they believe the regulations are out of date and need not be viewed as all that important. Because of the lack of Department Policy instructions in many areas, there is a tenancy for staff to make up policy as they go along.
>
> Going further than this, some staff clearly believe the Regulations are already restrictive enough without the need to ensure an operator commits himself in company documentation to a specific type of activity."
>
> "It is considered that the corporation of the IFR procedure development in New Zealand was an incorrect decision. The developed structure is wasteful of the scarce resource of procedural planners. The structure has resulted in ACNZ Ltd and CAD having to pool their procedural planners and include an associated management structure above.
>
> It is vital that the CAD maintain the overview of the commercial body's activities is it has already been demonstrated that their method is driven by finance and that they are prepared to sacrifice the set standards and safely due to financial cost in rectification."
>
> "The government policy with corporatisation of the airways was for the split to be between commercial and non-commercial activities. A committee set up to consider how corporatisation would be undertaken equated operational/ regulatory with commercial/ non-commercial.

The commercial/ non-commercial approach was taken by the Airways Corporation in deciding the activities and assets they would take over for their operation. Civil Aviation Division followed the operational/ regulatory path in setting up the Divisions functions.

This has resulted in a number of non-profitable operational facilities not being taken over by the corporation, and the Division having no proper management structure or resources to maintain these services. Staff employed in a regulatory role are being regulatory role are being regularly required to undertake work associated with these facilities to the detriment of their real role."

"There is no doubt in my mind that New Zealand should honour the commitment made when it joined the International Civil Aviation Organisation as far as international flights and international aerodromes are concerned.

ICAO encourages Contracting States to treat domestic aviation in the same manner as international aviation as far as compliance with standards, Recommendations, *etc* are concerned.

Tertiary legislations in the form of Civil Aviation Safety Orders and Civil Airworthiness requirements have not found favour with certain sectors of the aviation industry, and the validity of this legislation has been questioned. In my view the Directors of Civil Aviation and their offices have, over the years, tended to err on the side of "safety" when processing changes to the regulations or tertiary legislation. Some relaxation in the areas that cannot be enforced would be beneficial to all concerned."

"The expectations of each individual client depends on the group he or she belongs to but in general all except CAD to be fair, even handed and not cost them anything more than a token fee for the service provided. Organisations such as airlines, general aviation operators and the Airways Corporation have an expectation that CAD will comply with their wishes and will represent their views to the Government. They also have an expectation that CAD will keep out of, or will have minimum impact on, their organisations. AS can be seen their expectations fall far short of reality."

"The corporate Services Division removes a lot of the authority and accountability from CAD managers. CAD would be better served by providing its own corporate services under the control of the Director of Civil Aviation."

"CAD is currently organised on a disciplinary basis rather than a functional basis, *ie* operators, engineers and surveyors are separate identities in the organisation. The result is a disjointed approach to many CAD activities that would benefit from better coordination and forward planning. Day to day activities prevent key personnel from doing the essential forward planning and policy development for the orderly development of the industry."

"The current regulations have many sections that are grossly out of date and so do not reflect modern technology or practices."

"Many CAD officers are frustrated in their work by the inability to enforce the various standards they are expected to apply. Many of the infringements are of a minor nature and do not warrant the costs or efforts required to take court action.

The result is that sections of industry ignore aspects of the rules, being reasonably safe in the knowledge that they are very unlikely to be prosecuted. An instant fine similar to that used by the FAA would allow CAD officers to enforce the law with the minimum of bureaucracy and without the high costs of court prosecution.
Individual rights could be protected by provisions similar to those that apply to the instant fines of the Road Transport Division. Such a system would, I believe, cause industry to observe the lesser, but nevertheless important, requirements and generally improve the overall standards, including those of CAD"

"In line with modern management practice, it is suggested that all authority should be delegated to the lowest possible level, considering the various requirements, and that the remuneration for all positions within the Division be based on the responsibility of the position held. Such a proposal would need to be carefully considered before implementation with transitional arrangements being made so that staff are not disadvantaged by its implementation. Good communications between management and staff are essential for significantly pay changes to be implemented without loosing the goodwill of the staff."

"The CAD training programme seems to be an ad hoc arrangement at best. When a new person joins the Division, there should be a formal indoctrination course that will orient them and teach the basic workings of the organisation. To place new recruits into the front line without the benefit of some training is unfair to both the person concerned and those in industry he has to deal with as well as being inefficient. A formal indoctrination course would take less time than that lost by the new recruit finding his own way through the organisation by trial and error."

"For some considerable time the staff of the division, and particularly the branch, have been acutely aware of the constraints placed on their activities by an Act, and ensuring Regulations, which are not only thirty three years old but which have a built in role conflict anomaly.

Now that the operational role of the division has been hived off to the Airways Corporation, the conflict caused by the Act in its requirement to:

a) promote and encourage the orderly and economic development of civil aviation; and

b) exercise such functions as may be necessary to ensure the safe operation of aircraft could be resolved."

"Recently the hierarchic structure has been somewhat flattened, this is commendable and in line with modern management practice. Unfortunately many of the "old guard" managers remain to continue to clog the system through their personal inefficiency and fundamental lack of management theory. It is desirable to make the individual's span of control appropriate, but it cannot be effective if that individual cannot and will not delegate.

While the manager performs the productive functions of his subordinates he has no time left to perform his management functions and the whole unit or section suffers.

"The meaning or purpose of some regulations is not clear.

Some regulations have proved to be unenforceable.

Classes of aircraft which should be exempt from most or all the regulations are not so exempted, *eg* model aircraft, kites.

Some regulations do not allow alternative compliance which would provide an equivalent level of safety.

The Act does not provide for different safety standards to be applied to different types of operation, *eg* air transport as compared to sport aviation.

"There is doubt about the vires of some regulations, *eg* Regs 19A-D and all others giving the Director powers of exemption from the regulations."

"The current regulations make individuals responsible for the proper performance and certification of aircraft maintenance. In the case of work performed in large companies, proper maintenance may depend on the satisfactory and coordinated performance of work by a large number of people, and on having appropriate company procedures. The pressure which may be exerted by management, favourably or otherwise, can also be a major safety consideration. In such cases it is more appropriate for the company to be made responsible for the performance of work and its certification."

"In 1983 the Government effectively "deregulated" the domestic Air Transport Industry, and provided for an Air Transport Industry, and provided for an Air Service Licensing Authority (ASLA) which issues licences to competent operators. The Ministry of Transport provides an organisation to support and advise the authority.

Regulations 1a36 of the Civil Aviation Regulations requires that no person shall operate an air transport an air transport service unless he holds an Air Service Certificate, and to get this he must satisfy the director of his competence. The Civil Aviation Division manage this, and also advises the Ministry of Transport so that it can advise the ASLA.

To make matters more confusing for the operator, the definitions of air transport service differ between the regulations and the Act, and not under the regulations. This confusion and duplication is inefficient, does nothing to improve aviation safety, and when cost recovery is applied, it has negative effect on the prosperity of aviation."

"The direction taken by each brand depends on the whim of its head, and not on any rational plan. The whole purpose of the Division is to keep aviation safe, yet no figures are maintained from which safety trends for the different types of aviation can be established and problem areas targeted."

"If the Division is to be made accountable for its performance, and required to recover its costs, the Director must have control over all the factors that affect his performance. He cannot be made accountable for the performance of an organisation he cannot control."

"It would seem more practical for regulatory staff to have a general background level of expertise, and for those staff to set national standards in consultation with industry:

a) based on ICAO requirements
b) industry standards where these are acceptable
c) where no standard exists but is required – the regulatory body (CAD) in consultation with industry, set the standard.
d) that the standards to set, be published, legally binding, and enforced."

"The value of a safety measure in terms of reducing the risk of an accident, cannot be quantified: if safety is to be paramount, reliance has to be placed on the view of an independent expert, rather than that of persons engaged in the industry who must be influenced by commercial considerations. Criticism of Airworthiness and Operational Standards raises the question – How safe a civil aviation industry does New Zealand want or, in cruder terms, what is the price worth paying for safety?

Civil Aviation Division can advise on the balance between safety and cost, but it cannot answer the question. Nor would an answer help the Civil Aviation Division to fulfil its responsibilities. Civil Aviation Division carries out its functions by maintaining a team of Airline Inspectors, General Aviation Inspectors, and Flight Testing Officers, supported where possible by the best available advice on every aspect of aircraft safety.

Civil Aviation Division must be aware of the requirements of the industry, and the need to consult with it on Civil Aviation Division's activities. Key personnel in Civil Aviation Division must be fully conversant with the latest technical developments in aviation to ensure adequate coverage of all aspects of the industry.

This does not mean that Civil Aviation Division should not be commercially sensitive to the industry, and its needs to be a customer, although there are some who believe it should be. Civil Aviation Division does not exist to provide a service to the aviation industry, nor is it there to sponsor the industry.

As a regulatory body its first duty must be to the public and it should take care not to get too close to the industry it regulates, if it is to be able to carry out its regulatory task efficiency.

If there is a supplier/customer relationship, it is not to the industry, but to Government and through Government to the travelling public to carry out the statutory duties. Civil Aviation Division's relationship to the industry is as a regulatory authority."

No distinction should be made between "airways" and "airports" facilities. They should all be covered by the same requirements, and administered in the same way."

"The regulations must be changed to ensure the Director has the power to specify and enforce safety standards, whilst giving the operators maximum freedom to manage their own operation."

Response From CAD – Visits By Review Team

The following are a series of comments made by the CAD personnel during the review team's visit to CAD head office and regional offices for discussions with various people.
Appendix V details all those people within CAD with whom the review team consulted. In all 47 people were consulted; all freely and willingly expressed their concerns and expectations about the civil aviation regulatory system and the organisation, administration and resources of CAD.

The comments are grouped into the following general headings:

- role and functions of CAD
- regulatory structure and quality
- enforcement
- CAD organisation and management
- specific areas to concern
- civil aviation industry, its needs and expectations.

It will be seen that there is quite a different perspective of the regulatory structure and of a CAD in general between the regions and head office. To best illustrate this the comments are split between these originating from the regions and those from head office. (The comments are factually inaccurate but they are nevertheless recorded as they help to "paint a full picture".

No apology is made for the reception in comments, and we could have made these greater. This serves the purpose of illustrating that the same issues and concerns are expressed by a number of people but in slightly different words.

The Role And Functions Of CAD

Comments From The Regions

The role of CAD is to protect the fare paying passenger.

There is a split role for CAD in the sense that one relates to a professional aviation and the other is recreational aviation.

Industry should be made to come to CAD.

50% of our work (airworthiness) is "wiping noses"

The end user or operator is primarily responsible for safety.

Some operators welcome CAD as an aid to keep up standards… when we are short of staff, operators get slack.

Comments From Head Office

Under Government policy, the South Pacific is seen as a growth market for civil aviation and so CAD are actively involved in this area.

The Government's policy is for recreational activities to be self-policing.

The responsibility for maintaining aircraft separation in the air went from the Civil Aviation Act (an Act with the emphasis on safety) to the SOE Act (where the emphasis is making a profit)

The dividing line between CAD and ACNZ has not been clearly defined and there are a number of disputes going on between ACNZ and CAD.

To monitor aviation safety trends there is a need for good statistics.

There are two problems with providing consultancy services; one is the manpower and cost and the other is the conflict of interest or distribution of responsibility.

The regulatory function should not interfere with the operating function, it should just monitor the safety factors…. And stay back as far as possible.

The Director is responsible for safety and CAD must undertake all tasks that will ensure the operators comply with the Regulations and run a safe operation.

CAD have the primary responsibility for safety… the liability rests with CAD.

There are many ways of achieving safety and the operator is entitled to decide which way, provided the safety standard is met.

There is a moral obligation to safeguard "innocent" people.

CAD have two functions: regulatory and the dissemination of safety information.

Regulatory Structure and Quality

Comments From The Region

The great pile of CASOs seem to be the problem area…. Easier to change CASOs than Regs… it is easy to get lost in CASOs.

We need simpler, easier, less detailed and more structured Regs.

Interpretation is a major problem, especially in CASOs… CASOs are too big and too complex to be simply understood.

There seems to be a philosophy in NZ to keep up with international things.

The airworthiness aspect of civil aviation has stacks of add ons.

What is wanted in one interpretation.

What is required is simple language and unambiguous language so that the interpretation of regulation is the same.

Inconsistency of nationwide airworthiness standards is a major problem.

It is difficult to get anything done in the requirements.

Regulations have not caught up with helicopters.

HO want big manuals to justify their existence and these manuals get very detailed.

There is too much tertiary regulation. It is not so much the quantity but the retrieval of the information…. And how does a pilot keep up to date with all the information and rules emanating from a variety of sources?

Comments From Head Office

We should accept professional qualifications more than we do at the moment.

The Act is deficient….. it does not allow for the delegation of responsibility to an organisation or directly to a person.

The Act needs to empower the regulatory authority to do certain things – the regulations need to ensure the civil aviation industry acts sensibly and safely… then there needs to be some procedural safeguards at a tertiary level. But there is also a need for flexibility and for fast reactions to certain situations.

CAD has no regulatory power or control over who holds specific management positions in airlines… this is all controlled through the Air Services Licensing Authority.

There is a whole library behind Air NZ's ops specifications which include a number of side letters on all sorts, such as passenger weights.

The biggest problem is getting regulations drafted and through the system… for example, regulations relating to simulators.

The civil aviation regulations were a peculiar example of using criminal law to enforce social standards.

There is a mismatch of standards in CAD and this is because there is a lack of lateral communication within CAD.

The regulations are not very readable. It is very hard to find your way around the regulations and all the tertiary levels of regulations.

The difficult part is to actually make regulations whilst at the same time provide flexibility and also to incorporate the power of the Director into them.

The Regs are okay for airways and airports but when tested in other areas they are found wanting.

The existing Regs are hopeless.

The Regs are outdated and complex.

Enforcement

Comments From The Regions

CAD must be able to enforce the Regs.

Penalties should be along the lines of lifting a licence and withdrawing the privileges.

There are so many requirements, orders, *etc* that when it comes to law it is not sure if there are a point in law… the legal professionals often can't understand and so if the courts can't understand they throw it out.

The Regs are the teeth when all else fails.

For Regs to be effective you must have the ability to enforce the Regs and the teeth to do this.

It is not clear whether all the add ons to the Regs, like CASOs, CAICs, NZCARs, are ultra vires.

The operations manual is within the law as it is part of the air service certificate which is part of the regulations.

In the opinion of our local legal adviser, the legality of NZCARs is uncertain.

There is no effective authority within CAD…. CAD can issue a C of A but it cannot withdraw a C of A.

We use commonsense, the Regs are not really referred to and they are not important on a day-to-day basis…

We have flexibility under Reg 12.

There should be provision for built-in appeals.

Offences against the Regs should perhaps be a civil fine, maybe in the form of an infringement fee.

The lifting of licences should not be given to the courts and not to the issuing authority or the authority conducting the surveillance.

The punitive power if Regs is not used; persuasion and logic are sufficient.

The legal people are of little assistance.

CAD Organisation and Management

Comments from the Regions

Over the last two or three years there has been more and more involvement by HO in regional affairs… this began to show itself with the introduction of deregulation of the Air Services Licensing requirements.

CAD should no longer be involved in facilitation and maintain the chairmanship.

There is no formal training done to equip regional inspectors on either the flight ops or airworthiness side.

Nobody knows how much it will cost to run the region… The budget is done by the incremental method.

There needs to be regional coordination between the RAS and SFO and with outside organisations to ensure the effective management of CAD in the region.

There is a war between corporate services and CAD.

CAD get too involved in detail.

GAIs are probably at the right level in terms of numbers.

CAD is probably at the minimum level in terms of resources and operations to maintain an acceptable safety standard.

Base inspections were a good thing.

There are too many hands into the operation at the regional end.

We are not getting support from HO… they do things in the region without the knowledge of the knowledge of the regional office; like dealing with pilots after they have failed flight tests.

Some customers (*eg* corporate aircraft owners) go straight to HO and by-pass the region.

There is a major communications problem and major arrangement problems concerning channels of communication between HO and regions.

There seems to be a "them" and "us" syndrome between HO and the regions.

Training of surveyors on the airworthiness side is a major problem and this is lacking…

CAD have to get more into auditing…

There doesn't seem to be a requirement for aircraft below 5700kg to set up an approved maintenance programme (for non-air transport operations).

Head office is in full control of airworthiness with the district offices spread out.

The problem is that with each region operating on its own, each region does it differently, that is, interprets the Regs differently.

If the regions were got rid of there would be a greater degree of standardisation amongst the industry.

DAS are totally accessible to clients and this inhibits them from planning their day and work productively.

Poor management within the airworthiness branch is a major problem.

Management and communications, from the top down, are the biggest problems within the CAD.

There is a complete lack of oral communications within the regions.

Managers in head office are on all sorts of committees.

Joint inspection by surveyors and aviation inspectors worked well – didn't continue because of the staffing situation.

We have little or no support from HO.

We are very disgruntled with HO because the lack of support…. The operators get more favourable answers from HO.

Eight days after 1 April 1987[2] was our first meeting with nothing being done.

There is loads of ability in HO but they are not managers…nobody in flight ops in HO has much experience of any significance in general aviation.

No briefing has been arranged by DCA on the airport situation.

The new delegation was a big surprise… Airworthiness got fewer delegations and so there is a shift in responsibility to head office.

[2] The date the Airways corporation was established

On the airworthiness side, top management do not have a collected sense of what is actually going on.

Security run a good operation and organisation from HO, there appears to be excellent liaison with the regions.

There is a need for full autonomy in the region.

Ho should help and eventually do, but it takes time.

We have airline inspectors "running out of our ears".

Comments from Head Office

To reorganise there needs to be a complete review of the Regs. The philosophy and to decide what degree of safety is required.

There is a lot of interaction between the regions and HO in the licensing unit.

The regional admin setup has too many bottlenecks and is unsatisfactory.

We have an informal feedback from the industry on the performance of the regions.

These joint (base) inspections have their attractions but might not be the best way to use the resources of CAD.

There is a dispute between GAIs and AIs and their responsibilities.

The current organisation and administration of CAD does not allow the sideways and vertical communication of information to everybody. This means that the system doesn't allow all sections affected by specific changes in standards or operations being known to everyone who might be affected by the change.

There is a need for only people in Head Office…..The regions do all the work and this is where all the people in the industry are and so this is where the weight should be.

The ICAO clerk is lodged in the Policy Division of the Ministry of Transport.

The Division has good calibre staff, good technical people but not good managers, they do not delegate.

The structure is wrong with each discipline acting independently and building empires.

Areas Of Concern

Comments From The Regions

There is no formal appeal system.

GAIs are leaving CAD at an alarming rate – the latest one left to make furniture.

There needs to be a more streamlined system for certificate of airworthiness.

Once we have issued a C of A we rarely see the aircraft and when we do we are usually horrified at its airworthiness state.

There is no way of knowing who owns particular aircraft at any one time…. There are problems in finding the real owner of the aircraft in front of our eyes.

The operator not the owner is the person we are most interested in.

There is no liaison between the accident investigation branch and CAD over accidents and repairs.

The operations Specifications is a repetitive document.

The airline standards people have don't have the expertise to do the job.

The approval of IFR aircraft hasn't yet been resolved by HO…. The problem is that under these VFR / IFR rules you can fly IFR in the same airspace as legitimate IFR aircraft.

We have major problems on the airworthiness side when it comes to unsafe practices…. All we get from the top is "use Reg 17"… totally unsatisfactory.

Pay is a big problem for GAIs and so we can't hire appropriate people.
There is 30,000 difference in the salary between an airline inspector and the general aviation inspector.

Salary is the big problem, especially in the flight ops area, less so in the airworthiness side.

Comments from Head Office

It is very hard to find GAIs with third level airline experience.

To some degree, base and sub-base operations inspections are done to unwritten standards which may be modelled on IcAO or some other standard… so a possibility for different standards for say Ansett 737 and Air NZ 737 operations is quite high.

CAD do not have a list of all Air NZ approvals and cannot provide such a listing on a company basis for other companies either. We can provide a list of approvals by individuals.

It is a little difficult to tell at this stage how AIs are employed.

Civil Aviation Industry, its needs and expectations

Comments from the Region

NZ tends to do things on a shoestring… this flows through to civil aviation; namely third level operations… Flight Ops and airworthiness within CAD give these companies and people a lot of advice…our advice is not always accepted and it requires a bit more positive action on the part of third level operators to keep the operation safe.

Air New Zealand (Air NZ) have many, many, many delegations.

When Air NZ do something that we say you can't do; they simply say "sorry, it's too late, we've done it".

We don't agree with the customer approach. We provide a service and the user pays; the customer approach is not appropriate to airline inspections… our role is primarily a safety one.

Pouring money into GA will not affect the accident rate…

There is less chance of CAD now being "captured" than previously.

The biggest problem for flight safety is third level operators.. This is because they do not have the best equipment and they are under financial pressure.

Supervision of flying training at aero clubs is just not there.

I am often told (by HO) to "assist the operators"… but the message to the operators should be within the framework of the rules and not merely a message to get them off their (*ie* HO's) back.

Comments from Head Office

It could be practical to have a CPL for airwork and a CPL for air transport operations.

There is a need to come up with a reasonable programme and curriculum for instructor training.

Under the Regs an airline means an air transport enterprise operating a regular air service.

The problem with approvals is with the smaller operators. This is merely because they do not have the same resources as the bigger airlines.

There are more than 500 people who do flight tests of some sort or another, excluding our own people involved In Reg 76 tests… This creates a standardisation problem such as what needs to be done in the test and how it is to be conducted.

All passengers, cargo and innocent parties are entitled to think that all aircraft are operated to the same safe standard.

Airways Corporation want approved control of airspace to be delegated to them.

It is my personal view that it would be wrong to make approach control incontestable.

There is probably a lack of experienced personnel in the Airways Corporation.

APPENDIX VII

SUBMISSION ON AVIAITON SECURITY FROM WELLINGTON AND CHRISTCHURCH AIRPORTS AND CAD

WELLINGTON INTERNATIONAL AIRPORT

The office of the Airport Manager - Wellington 3 - telephone 868-500

P.O. Box 21-037
Our Ref: 23/1
22 March 1988

Mr. Ian Brown,
McGregor and Company,
Burma Lodge,
Burma Road,
Johnsonville,
WELLINGTON

Dear Mr Brown,

AVIATION SECURITY : WELLINGTON AIRPORT

Further to your discussion with Hugh McCarroll and Gary Moore, I confirm Wellington's support for the philosophy outlined in Hugh McCarroll's discussion on Aviation Security.

For brevity, I have summarised the Wellington operation to show existing staffing and requirements. The Wellington style of operation is similar to that of Christchurch, but differs in detail because of the higher domestic/international passenger traffic ratio.

Existing Operation (AVSEC)

We understand that the AVSEC staff comprises of 16 personnel, including sergeants and two administrative positions. Coverage is provided from 0603 to 2230, with one roving officer on night duty. Staffing is geared to international flight departures, with only a "general duties" presence of a sergeant and three officers on duty at other times. Normal staffing during international departures is six.

Existing Operation (Wardens)

We have a Warden staff of 28, deployed as four groups of 7, each group consisting of one Senior Warden and six O.R.s. Night-time coverage is two staff, one in each Terminal. Maximum staffing level at peak times is 11, all staff being fully utilised on necessary functions.

Passenger Screening Requirement

International flight departures at Wellington usually occur at or about peak domestic travel times, with the bulk of such operations between 1520 and 1800. Existing Warden shift strength is insufficient to cover passenger screening during this segment of the day, and

would require an increase of two per shift to cope with the additional work assuming retention of the current shift pattern. Part-time workers world be used to augment the full-time staff as required. We have assumed that a team of two full-timers plus two or three part-timers would operate the screening point, dependent on passenger loadings and the proximity of departures. 113 person hours per week would be required to satisfy part-time staff to provide coverage, on the same basis as suggested for Christchurch. Apron security during international operations would be provided by Rescue-Fire staff.

Projected Savings

The AVSEC operation at Wellington is very efficient with staff usage being sensibly organised. We have no figures for overtime and recalls, but our perception is that the normal level of over normal-time working, but otherwise uses the same assumptions as the Christchurch paper.

Cost of 16 full-time staff : 16 x $42,00 = $672,00 pa.

Cost of 8 full-time staff : $336,000

Cost of 7 part-time staff : $147,000

Total cost, full-time plus part-time staff = $483,000 pa.

Saving = Difference = $190,000 pa approx

The estimated $190,000 pa saving is a conservative figure, since the use of part-time staff will reduce the cost of providing staffing for disrupted flights or for unusual events.

Yours faithfully

R.M. Goldingay
AIRPORT MANAGER

CHRISTCHURCH AIRPORT AUTHORITY

Christchurch City Council
P.O. Box 14001, Christchurch New Zealand

24 March 1988

DISCUSSION PAPER

BENEFITS OF INCORPORATING RESCUE FIRE SERVICE AND AVIATION SECURITY SERVICE INTO AIRPORT OPERATION

Background

Christchurch Airport management has given considerable thought to the operation of the Airport following the assumption of responsibility for Rescue Fire Service from 1 April 1988. It has become clear that there are considerable benefits in integrating the day to day terminal and airfield operations of the Airport.

From an organisational viewpoint, the Airport consists of two functional area, the airfield and the terminal building/forecourt area. Currently Rescue Fire Service and Aviation Security independently provide specialist services on the airfield, while the Airport Authority Wardens operate the terminal and forecourt and Aviation Security do the international departure passenger processing.

The airside Aviation Security duties can easily be accomplished by Rescue Fire staff within existing or even reduced manning levels. This has been discussed and agreed in principle with Rescue Fire staff at a Christchurch.

The terminal duties of Aviation Security consists primarily of screening outgoing international passengers. This task could easily incorporated into the Airport Wardens duties with some additional full time and part time staff. Other Aviation Security tasks could be easily accommodated within the existing Airport Authority operation.

Existing Operation

The existing Aviation Security operation is understood to consist of three shifts of five officers plus a shift sergeant. There are two administrative positions, the Chief Aviation Security Officer and a Senior Sergeant, and also one part time officer. The three shift pattern allows for coverage form 0630 through to 1500, and from 1430 to 2200. There is a half hour overlap at shift change. Normally there is a shift sergeant and two officers on duty for airfield and general duties, with additional staff being rostered for passenger screening. One officer is on duty overnight. A copy of a typical shift pattern is attached.

The Airport Authority Wardens Section consists of nineteen full time staff. There is a Chief Warden, three Senior Wardens, twelve Wardens and three Car Park Attendants. Three shifts are maintained, each consisting of a Senior Warden and five others. This allows two shift coverage each day from 0630 to 1430, and from 1430 to 2230, with one Warden on duty overnight. The existing airfield duties of Aviation Security have been considerable reduced by the introduction of domestic air bridges. Approximately 90% of domestic passengers bow use the air bridges, and only 10% cross the ramp to/from their aircraft. The other activities covered by Aviation Security on the airfield consist of bird scaring, runway checks, perimeter checks a monitoring of passengers moving to and from international aircraft. All these functions can be accomplished by Rescue Fire staff during the normal course of their duties. The matter has been discussed with Rescue Fire staff at Christchurch and they have expressed a willingness to undertake such duties.

The passenger screening function at Christchurch is better suited to part time work than full time work, as currently staffed. The international movements are spread throughout the day with large time gaps between aircraft movements on many occasions.

Proposed Passenger Screening Operation

The existing Warden shift strength does not allow them to cover international departures as well as their existing duties. Quite often international movements coincide with domestic peak movements. Some increase in permanent Warden staffing would be necessary to accommodate the additional duties. It is felt that three additional Wardens per shift would give adequate coverage to provide the core staff to perform passenger screening, with these staff being used for other Warden duties at other times when there were no international movements. These three additional staff would be bolstered by part time workers who would come in specifically to do passenger screening for one or more international departures.

Based on the existing and planned schedules at Christchurch, some 131 person hours per week would be required to cover all the international movements currently occurring, or planned in the forthcoming schedule. The part time hours have been worked on the basis of a three hour minimum call out, and part timers working 20 hours per week maximum. This requires seven or eight part time workers, and allows considerable flexibility in increasing their number or their hours per week as traffic or circumstances demand.

In the event of a crisis or an emergency involving a threat to aviation, these passenger screening functions would continue with greater use of the part timers and the assistance of the Police.

Proposed Organisation

Attachment 1 is an organisational chart showing part of the proposed airport company organisation structure. In our discussions to date on optimising the Airport operation, the following organisational assumptions have been made:

1. Rescue Fire Service is performed to ICAO Category 8 standard. Staffing levels are now being negotiated with the Airways Corporation. These people would either be

Airport Authority staff or contract staff. In either case they would report to Airport management on a day to day basis so effectively they will be Airport staff.

2. In addition to their primary role of providing Rescue Fire Service, these "Airfield Operation" staff provide a number of other duties as detailed on attachment 2. These duties (now being negotiated with Airways Corporation) include the duties currently performed by Aviation Security. The vehicles proposed for the Rescue Fire Service include a Rapid Intervention Vehicle, two Major Fire Fighting Service include a Rapid Intervention Vehicle, an Equipment Tender and a Command Vehicle. With five vehicles there is considerable flexibility for the staff being out and about on the airfield performing these other duties. The extra duties have been discussed with existing RFS staff, and with the Airways Corporation, and no problems are foreseen in their being able to accomplish these duties while providing Rescue Fire Service capability.

3. Aviation Security activities in the terminal integrated into the Wardens operation. This corresponds to two eight hour shifts of eight full time Wardens plus a "Terminal Supervisor", and one Warden on overnight shift. There would also be part time wardens brought in for international passenger screening as required by international aircraft movements. These part time Wardens would be scheduled by the Terminal Manager, and administered by the Terminal Supervisor on a daily basis as schedules change or additional cover is required for sickness, leave etc.

4. There would be day to day liaison between the Airfield Manager and the Terminal Manager, both of whom would report to the Executive "Operations Manager" position. The Shift Supervisor and Terminal Supervisor also liaise on a day to day and hour to hour basis.

5. The terminal operations as proposed involve 27 full time Wardens, 7 part time Wardens and the Terminal Manger, a total of 28 full time and 7 part time staff. This compares with the existing separate Warden and Aviation Security operations which involve a total of 39 full time staff (20 Aviation Security, 19 Warden) and 1 part time (Aviation Security) staff. Assuming 1 full time staff position is equivalent to 2 part time positions from a total of 39.5, a 20% reduction.

6. The above staff organisation has been considered in general. There is the possibility of refinement to further reduce the numbers. Such refinements would be implemented based on experience with the proposed staffing levels and organisation structure.

7. With aerodrome control also being a contestable service, there is further potential to reduce total staffing by integrating this operation into the Airport operation also (as shown dotted in the attached organisation chart). The tower could be the watch room for Rescue Fire purposes, possibly releasing one staff member from the Rescue Fire watch.

Benefits:

Cost savings

If a total salary of $32,000 per annum plus 30% overheads for superannuation, sick leave etc is assumed, then the cost of a full time Aviation Security Officer is in the order of $42,000 per annum. It is understood that overtime and recalls paid to existing Aviation Security staff amounts to at least 80 hours per week, or the equivalent of more than two full time staff. If the cost of a part time worker is assumed to be half the cost of a full time worker, then the existing twenty full time and one part time Aviation Security Officers represent a direct labour cost, including overtime, of about $945,000 per annum. The proposal for nine full time and seven part time officers represents a cost of $525,000 per annum. The net saving of $420,000 per annum is realistic.

Flexibility

If Wardens are trained as back-up Rescue Fire staff, they could step in to assist in the event of a major incident, or relieve in the event of sickness or other unanticipated absence. They would be available immediately and as there is only one organisation involved, there would be no conflict of interest. If there was a security incident or a heightened level of security required, then the part time staff could be brought in to bolster normal operations and/or increase manning at check points. In the event of a Rescue Fire or security incident, there is a larger pool of trained and disciplined staff to call on, so flexibility of response is maximised.

Effectiveness

Because all the staff would report to a single organisation, there is no conflict of interest or authority. The staff can be deployed as and where required for maximum effectiveness. While theoretically such co-operation can occur across organisational boundaries, in practice this tends not to happen.

Because Wardens can be trained as back-up Rescue Fire staff, the need for extra specialised Rescue Fire staff to cover leave, training etc. is reduced. A pool of trained part time Warden staff allows maximum utilisation of the Rescue Fire staff and the full time Warden staff, without the additional burden of carrying staff for leave coverage in three separate organisations. The net result is that overall staff costs would be lowered.

Structured Staff Support

With a structured organisation where the Rescue Fire has the most seniority, full time Wardens with Rescue Fire training, then part time Wardens and full time Toll Plaza Operators, there is considerable flexibility in upgrading staff and supporting the top of the structure using less qualified staff.

The part time Wardens need only training in passenger screening, but they can release a full time Warden who can in turn release a Warden for Rescue Fire Service duties.

Likewise a clerk can operate the Toll Plaza to obviate the need for a Warden to provide such support (as currently occurs).

Discussion

For the proposed operation to occur, there world have to be changes to the existing Aviation Security organisation. There are two scenarios which warrant consideration:

1. Aviation Security being reduced to a regulatory/standard setting body with a small central intelligence gathering/operations group and liaison officers at the major airports. These officers would work with airport and airline staff as well as the Police.

2. Aviation Security being restructured to a small regulatory and standard sitting body within MOT. The intelligence role of Aviation Security would become a Police responsibility and the day to day operation and aerodrome licensee responsibility.

The second option appears to be preferable and there is no fundamental reason why such an operation should not work very satisfactorily. Indeed there is some question as to why is is necessary to have an Aviation Security intelligence operation. The Police already have considerable intelligence activities involving airports in their monitoring of people entering and leaving the country. The Police maintain a presence at international airports while international movements are in operation and have full powers of arrest. There would be no reduction in effectiveness of Aviation Security if option 2 were implemented.

Option 1 is a half way house and represents an on-going MOT cost for day to day Aviation Security activities. Maintaining a liaison officer at the major airports would require at least three staff to cover two shift seven day operation at each airport.

Conclusion

The inherent flexibility of the above organisation proposal is apparent. If only the terminal operation is considered, the improvement is 20%.

The current review of Aviation Regulations is the ideal opportunity to introduce the legislative changes necessary to allow these improvements to be implemented.

The changes proposed demonstrate the benefits of the corporatisation and organisational restructuring that has taken place as it highlight the over manning and inefficiencies of previous organisational structures.

HUGH G. MCCARROLL

MINISTRY of TRANSPORT

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14 March 1988.

Swedavia Consultants
Civil Aviation Review

Security of Aviation – Comments on structures

Purpose

1. The purpose of this paper is to enlarge on matters raised by Consultants Ian Brown and Dr Ron Allan.

Background

2. Various statements, newspaper and verbal comments attributed in the main to persons involved in Airport Authority activities indicate that there is a conception that direct Government involvement in both regulatory and implementation of security of aviation activity as currently exists in New Zealand is unusual. This is contrary to fact. By far the greatest proportion of ICAO Member States have systems which involve direct government participation in regulatory, implementation and direct front line security of aviation activities. In a small proportion of those States, there is a combination of both direct and delegated involvement.

2.1. In part, the misconception identified above may be attributable, in some cases, to the fact that in many States, "airport authorities: are in fact government agencies and consequently all or most aspects of aviation carried out by those authorities are direct government activities.

2.2 For number of years, management of New Zealand's three international airports have on various occasions attempted to take over the role of aviation security. This has never been more apparent than over recent months when media statements, Rescue Fire Tender documents and various forms of lobbying including representations to the Review Team have indicated the clear intent to pursue the take over line. *Clear written direction from the Minister (copy previously provided) that their involvement beyond their current responsibilities as a participant in the national aviation security programme is neither wanted nor desired, has been ignored.* This at least is consistent. All three have repeatedly ignored or played lip service to security

requirements put out by the Division to the continuing detriment of the national programme and largely negating the security efforts of responsible airlines, the Police and the Aviation Security Service. Examples of this attitude are set out later in this document.

2.3 Set out in the following paragraphs are matters of importance which I believe should be considered in your deliberations.

National Security System – Principles

3. In establishing the divisions of responsibility, the following basic principles are important.

(a) *Security of aviation activities as discharged by the Aviation Security Service are those tasks directed at the safety and security of aircraft, passengers, crews and supporting air navigation facilities.* The fact that these activities take place on airports is purely incidental.

(b) *Security of "airports" as such is a subsidiary activity provided as a consequence of Aviation Security Service activities, not as an aim or motivating purpose.* Security of airport company assets and commercial activities of the "airport" and/or other commercial entities located on airports is no different than any other commercial enterprise. It should remain the responsibility of those organisations and carried out either by them or under contract to them.

(c) The aims, tasks and responsibilities of New Zealand's national aviation security programme directly relate to Government's obligations under international agreements and, the need to protect the national investment ad reliance upon aviation. The discharge of those responsibilities have international connotations to New Zealand's and other States national security. The effectiveness or ineffectiveness of the national aviation security programme influences our vital tourist industry, our 98% dependence upon international air travel and air commerce generally. While "airports" contribute or rather are supposed to contribute to the national programme, their aims, strategies and responsibilities are locally and commercially orientated.

(d) *The threat or risk to be secured against is of a national nature as assessed by Government's intelligence advisers.* Countermeasures should also be of a national nature and not left to the whims and priorities of aerodrome licence holders.

(e) *While the threat is normally of a national nature it can, in a serious situation be manifested locally without any connection with airport activity.* This creates the situation where an individual airport may be faced with the necessity of providing costly additional security measures to counter that local threat to their disadvantage and to the advantage of other and sometimes competing airports.

(f) *A national system provided to protect against a national threat situation enables a national cost structure.* This ensures that individual airports with smaller passenger through put are not at a cost disadvantage over busier competing airports.

(g) *A national system encourages consistency of procedures, practices and performance dependant upon the perceived national threat.* Localised systems inevitably reflect the viability, priorities and whims of individual airports and their management making nationally co-ordinated consistent counter measures difficult if not impossible to achieve, particularly when immediate action is required.

(h) Staff carrying out the discharge of Government's responsibilities to security of *aviation within New Zealand and contributing to the security of adjoining States through the programme should be responsible to the Minister, and have the powers and authority to discharge their own tasks and ensure that others involved discharge theirs.*

(i) *It is vitally important that security staff managing and carrying out front line duties have access to all relevant intelligence to ensure the level of security effort matches the threat at any given point in time and can be quickly upgraded/downgraded to meet changes in the threat.* This also considerably assists job interest and motivation when staff are able to be fully informed of relevant intelligence detail can not be made available to private organisations.

(j) *The nature of security activities, particularly in the area of passenger screening, requires a continuous high level of motivation, skill and judgement of an instant nature.* Failures rarely show up delegated tasks, with an indirect inspectorate to ensure standards, quite impractical unless constant costly supervision is maintained requiring a substantial group of inspectors. (recent experience in Canada and the United states confirms this.)

(k) *The dividing of prime aviation security tasks and responsibilities between organisations is undesirable.* It inevitably leads to splintering of security operations as each organisation circumscribes as tightly as possible the limits of their own involvement rather than addressing security needs as a whole.

(l) *Many tasks carried out by staff on security duties are individually mundane and repetitive. Unless a number and variety of complimentary tasks are available, with duty staff being frequently rotated, motivation is impossible to maintain.*

(m) *Of particular importance is the fact that while at times for short periods, because of the nature of aviation, most organisations have more staff resources available than they need, at busy periods staff of all organisations involved are heavily or totally committed looking after their own responsibilities.* Thus, while there may be times when one organisation could well undertake the work, or some of the work of another during lulls in airline activity, it is quite impractical to do so during busier periods. With respect to

security activities there is a constant basic commitment of staff resources, during peak times. At all times of heightened threat to aviation or emergency on an airport, maximum coverage is essential. In most cases all other organisations are equally heavily committed at such times.

Aerodrome Licensee Involvement

4. The level of aerodrome licensee involvement under the national aviation security programme is set out in my previous paper (AVIATION SECURITY REVIEW 1987) submitted to the Review Team. It will be appreciated from that document and other papers submitted that licensee involvement is appropriately limited to the provision, (as land lord) of a physically secure environment in which operational users of the airport can economically and effectively maintain a safe and secure operation. This requirement was placed upon the aerodrome licensee's of Auckland, Wellington and Christchurch as a requirement of their aerodrome license several years ago. Both before and since, letters, discussions, meetings have failed to achieve positive satisfactory results.

4.1. Wellington International Airport remains "wide open". Servicing as it does the seat of Government, 37 foreign embassies/representatives, two major international operators and a "hub" for many domestic operations, makes it an important airport which constantly operates under a higher than normal threat. The importance of this situation has continuously been ignored by the Wellington Airport Authority. While some improvements have been made over very recent times, security efforts of all organisations continue to be compromised and largely negated by the lack of priority and effort put upon security by that Airport Authority.

4.2. Auckland International Airport, under extreme pressure during the Springbok Tour in 1981, made substantial improvements. It still however remains below accepted international requirements. A current example is the situation where Aviation Security Service recommendations during recent arrival hall reconstruction were over ridden by a senior ARA executive. As a result the necessary secure nature of the arrival hall is now such that arriving passengers (having had access to their hold stow baggage which has not been subject to any form of security control) now have direct access to the international ramp, a few meters from aircraft. Likewise, any member of the public, who is prepared to be mildly devious can (and do) gain access through the same area. As a result all the efforts of airlines, Customs, Police, Immigration, Agriculture and the Aviation Security to maintain a secure operation are seriously comprised.

4.3 Christchurch Airport has made some attempt to provide a secure environment and currently further improvements are being made under direction from the Director. It still however remains below the required standard. Further, Airport Authority staff and management repeatedly leave gates and doors insecure, over-ride reasonable Aviation Security restrictions upon unnecessary entry into "Security Areas" and set the worst possible example to the public and other airport employees.

4.4 With respect to secondary airports, only Hokitika has made any real attempt to provide a safe and secure environment. Three of the busiest of those airports, Nelson,

Hamilton, and Queenstown provide for and condone direct public access, both vehicular and pedestrian to active operational areas without any form of control whatsoever. Other airports are little better. The result is that all operations through these airports are conducted in an environment of security and safety risk which could be readily avoided with little effort and a more responsible attitude.

4.5 Security man-power activities of aerodrome license holders are limited to providing land-lord type security for their own assets and perhaps some deterrent through their uniformed presence. Boarding pass checking carried out by warden staff at Auckland, Wellington and Christchurch, while having an incidental benefit to security, is intended to prevent unauthorised access to apron areas and aircraft on safety grounds and as a facilitation exercise to assist passengers to get to their correct aircraft at the appropriate time of boarding. At all other airports known to the writer, and including the Ansett Terminals in New Zealand, this work is carried out by airline staff. Where any person breaches this check, Aviation Security are frequently called upon to deal with the transgressor/s.

Comment

5. From the facts set out in paragraph 4, all of which can be supported from our records, by no stretch of the imagination can it be said that current aerodrome licensees have and display a responsible attitude by aerodrome licensees will appear commercial pressures will almost certainly result in similar attitude to security. Any broader involvement by aerodrome licensees in security of aviation, (the security and associated safety of passengers, crews, aircraft and air navigation facilities, as distinct from security of the airport managements commercial activities) would be seriously detrimental to the cause. Further, strong regulations, rigidly enforced to ensure that aerodrome licensee's comply with what is their responsibility are essential.

5.1 The Aviation Security Service is a small effective team dedicated to security and safety of aviation. It is their equipment and facilities. With adequate funding which the proposal presently under consideration should assure, there is no reason why they should not be able to continue to provide an economic, effective, first class security service for aviation, expanding if necessary to meet future security needs of aviation.

5.2. Further, and of some importance, the Service provides communications support and additional manpower if required by other sections of Civil Aviation. They also provide a visual presence of the Division on airports.

Further Information

6. Should it be considered that further informed advice or opinions should be sought, the following persons are suggested who are knowledgeable on various national structures and the New Zealand system:

Mr Paul Shephard, Chief of Security, ICAO, Montreal. Mr Roydon Sutherland, ICAO Security Consultant, Bangkok. Captain Mike Langdale-Hunt, Security Rep, ALPA. Captain David Perry, Security Superintendent and Line Pilot Ansett, New Zealand.

Mr Trevor Chaseling, Security Manager, Quantas, Sydney. Mr Mike Martin Security Manager, Ansett Group, Melbourne.

Contact addresses/telephone numbers are available on request.

T.J.C.Joy
Chief Controller Aviation Security

APPENDIX VIII

THE NEW CIVIL AVIATION ACT
Suggested Content

The proposed new Act should be the prime instrument defining and establishing the Civil Aviation System.

The Act should include all measures to be undertaken by the State as a signatory of the Chicago Convention and other international civil aviation instruments within the ICAO framework. The ICAO member states have agreed on certain principles and arrangements in order that international civil aviation may be developed "in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically". For reference purposes, all new Zealand obligations as a member of ICAO should be included in the new Act.

The Act should also include those provisions necessary to provide for domestic aircraft operations and for sports and recreation functions that either belong to, or infringe upon, the Civil Aviation System.

We propose the following sections and subsections for the *Civil Aviation Act 1988.*

1 Applicability of the Act.

1.1 Definition of the Civil Aviation System in New Zealand.

1.2 Definition and abbreviations.

Note: The same interpretation of terms and expressions should be used throughout the Act *and* the Regulations.

2. Basic goals and objectives for the Civil Aviation System, and the Minister's responsibilities.

2.1 The over-all safety Goal.

Example: The over-all safety Goal is that *the New Zealand Aviation system takes all measures that improve safety at reasonable cost, subject to New Zealand meeting its minimum obligations under ICAO.* "Reasonable" cost shall be interpreted as meaning that the cost to the nation is exceeded by the benefit to the nation[3].

2.2 Recognition that different sectors of the Civil Aviation System will have different safety levels.

Example: It is recognised that pursuit of the overall safety goal will result in levels of safety differing between sectors of the Civil Aviation System, in part reflecting safety differences inherent in the design and use of different types of aircraft.

[3] The costs and benefits to be considered are those to the nation as a whole, not just the costs and benefits contained within the Civil Aviation System.

2.3 A balance between safety goals and air services demanded by the society.

Example: Wherever it is judged that consumers are willing to pay for a level of safety higher than that judged to be in keeping with the Goal, there shall be no impediment to that higher level of safety being provided[4].

2.4 The distribution of resources for safety improvements.

Example: To the extent possible, pursuit of the Goal shall not be frustrated by cost recovery issues.

2.5 Minister's responsibilities.

The Minister is responsible for the development of regulations and other regulatory means, including an effective Civil Aviation Authority, to ensure that New Zealand's international obligations are fulfilled and that the general goals and objectives defined under this section of the Act are met.

3 Principal functions and regulatory powers needed to cover the Annexes to the Chicago Convention and other functions and regulatory powers necessary to carry out the goals and objectives under section 2 of this Act.

Notes:

1. The regulatory powers needed are not explicitly spelled out in the following paragraphs. The Act must include the supporting provisions.

2. The numbering below corresponds to the numbering of the Annexes to the Convention.

3.1 To issue licences to individual persons within the Civil Aviation System meeting specified requirements regarding age, knowledge, skill, experience and medical fitness. A licensed person is responsible not to exercise his privileges unless he meets these specifications. (The roles of licensed persons in Approved Organisations should be clarified.)

Pilot in Command: Special privileges and corresponding responsibilities exercisable during flight[5].

Delegation of authority and assignment of corresponding responsibilities to CAA to perform State functions, and to further delegate State functions to designated persons, is made under section 4 of this Act.

3.2 All New Zealand registered aircraft in flight over the high seas should comply with the Rules of the Air contained in Annex 2 to the Convention as amended from time to time.

[4] Strictly, this is in keeping with the Goal when one adopts the viewpoint that the true economic value of safety is that revealed in the market place by consumer preferences.
[5] This is of such importance as to be expressed in the Act.

Delegation of authority and assignment of corresponding responsibilities to CAA to perform State functions is made under section 4 of this Act.

3.3 To provide aviation weather and communication service for national and international air navigation.

Delegation of authority and the assignment of the corresponding responsibility to CAA to perform State functions is made under section 4 of this Act.

Provision to establish an Agency with vested privileges, to provide meteorological services, is made under section 5 of this Act.

3.4 To provide aeronautical charts and aeronautical information service.

Delegation of authority and the assignment of the corresponding responsibility to CAA to perform State functions, and to further delegate State functions to designated persons, is made under section 4 of this Act.

Provision to establish Agencies with vested privileges, to provide aeronautical charts and aeronautical information service, are made under section 5 of this Act.

Note: Today aeronautical charts are published by the Department of Lands and Survey for the CAD. Airways Corporation is an authorised agency for issuing Notices to Airmen (NOTAM) and issuing amendments to NZAIP.

3.5 Adoption of standardised units of measurements.

Delegation of authority and the assignment of the corresponding responsibility to CAA to perform State functions, and to coordinate State functions, is made under section 4 of this Act.

3.6 Operation of aircraft: general requirements; Pilot in Command; minimum crew; definition of flight; aircraft performance, instrument, equipment and flight documents; aircraft maintenance, manuals, logs and records; security, hazardous goods and unlawful interference; access to flight recorder records.

Delegation of authority and the assignment of the corresponding responsibility to CAA to perform State functions is made under section 4 of this Act.

3.7 To provide an aircraft register. No person should operate an aircraft in New Zealand unless registered in New Zealand or registered in another State. The Certificate of Registration shall be carried onboard.

Delegation of authority and the assignment of corresponding responsibility to perform State functions is made under section 4 of this Act.

3.8 Airworthiness of aircraft: national codes of airworthiness; Certificate of Airworthiness to be carried onboard.

Delegation of authority and the assignment of the corresponding responsibility to CAA to perform State functions, and to further delegate State functions to designated persons, is made under section 4 of this Act.

3.9 To provide minimum facilities for passengers.

This area, covered by Annex 9, has no bearing on the technical and operational safety areas. Instead of delegating this function to the CAA it seems more appropriate that the Minister appoints the chairman of the National Facilitation Committee and authorises him to ensure that this State function is performed.

3.10 Reserved, see 3.11 below.

3.11 To provide airways services.

Delegation of authority and the assignment of the corresponding responsibility to CAA to perform and coordinate State functions in the areas of aeronautical telecommunications and air traffic services, and to further delegate State functions to designated persons (airways services), is made under section 4 of this Act.

Provision to establish Agencies with vested privileges, to provide selected airways services functions, is made under section 5 of this Act.

3.12 To be responsible for search and rescue.

Delegation of authority and the assignment of the corresponding responsibility to CAA to perform State functions, including the coordination of State functions involved in search and rescue, is made under section 4 of this Act.

3.13 The Accident Investigation Branch is responsible for carrying out investigation of accidents and incidents in which aircraft are involved. The amount of investigation performed shall satisfy the State obligations expressed in Annex 13, and also satisfy the CAA need for information to monitor the flight safety trends and compare them with the general goals and objectives established under section 2 of this Act.

3.14 Aerodromes: General requirements (to be briefly defined in the Act).

Provisions concerning the power to prevent use of land, and erection of buildings and structures, incompatible with the operation of an aerodrome and aircraft, or causing interference with air navigation aids, if such prevention is beneficial to society.

Delegation of authority and the assignment of the corresponding responsibility to CAA to perform State functions is made under section 4 of this Act.

3.15 Reserved, see 3.4 above.

3.16 Environmental protection and Noise Certification.

Delegation of authority and the assignment of the corresponding responsibility to CAA to perform and coordinate State functions, and also to further delegate State functions to designated persons, is made under section 4 of this Act.

3.17 To provide an aviation security service.

Delegation of authority and the assignment of the corresponding responsibility to CAA to perform State functions, and to further delegate State functions to designated persons, is made under section 4 of this Act.

Provision to establish Agencies with vested privileges, to provide selected security functions, is made under section 5 of this Act.

3.18 Transport of dangerous goods by air.

Delegation of powers to CAA to perform and coordinate State functions is made under section 4 of this Act.

3.19 Reserved.

3.20 To initiate and carry out surveys into any aspect of the Civil Aviation System, and to advise the Minister and Government Departments on all matters affecting the Civil Aviation System.

The functional responsibility shall include a continuous data collection and analysis to provide information about the flight safety trends compared to the general goals and objectives established under section 2 of this Act. Also provision of all statistics for the purpose of ICAO statistical publications, and all flight safety related statistics are included in this function. Finally this functional responsibility shall include a requirement to issue a CAA annual report. This function is entrusted in CAA under section 4 of this Act.

4. Provisions for Civil Aviation Administration

4.1 Basic objective for CAA

> *Example:* The CAA basic objective is to seek to ensure public safety within the Civil Aviation System. The general goals and objectives established under section 2 of this Act shall govern all actions taken by the CAA.

4.2 Basic functions of the CAA to undertake and execute State functions entrusted to the authority under section 3 of this Act. (Any provisions or limitations with respect to authority and responsibility must be included in the Act.)

4.2.1 Development and review of Aviation Safety Standards.

4.2.2 Entry control

4.2.3 Functional supervision

4.2.4 Exit control

4.2.5 Analysis of change, system safety and cost-benefit analysis

4.2.6 ICAO co-ordination, external liaison

4.2.7 Management, monitoring and development of the above

4.2.8 To carry out such functions and duties as may be conferred on the CAA by this or any other enactment or as the Minister may from time to time direct.

4.3 Delegation of State function to designated individual persons.

The following types of authorised persons are foreseen when powers entrusted in CAA under section 3 of this Act are promulgated:

Authorised flight examiner.

Authorised ground training examiner.

Authorised medical examiner.

Authorised editor of aeronautical charts.

Authorised editor of aeronautical information services (NOTAM, AIC, AIP).

Authorised person to issue Certificate of Airworthiness.

Authorised person to issue Certificate of Design.

Appointed chairman of the National facilitation committee.

Authorised person, airways services. (Selected State functions only).

Authorised person performing noise measurement, monitoring and calculations.

Authorised person, security services. (Selected State functions only).

Authorisations are only given to designated persons to whom any of the powers exercisable by the CAA are conferred.

Being delegated State functions, the sole responsibility for the end result of any designees performance, still rests with CAA.

The State can always revoke an authorisation at any time without appeal. This power rests with the CAA.

5. Provisions for other State provided functions

5.1 To provide a national meteorological service.

Note: Today, this State provided functions serves the total society with meteorological services. In this Act the main concern is aviation weather and communication services. These services may ultimately be provided by vested privileges in an agency, which is not part of the government. In this case, the CAA will be the formal aviation meteorological authority. The existing distribution of responsibility is unclear.

5.2 To provide airways services.

Note: Today, Airways Corporation of New Zealand Limited, is a sole provider of certain airways services. These services may ultimately be provided by vested privileges in an agency, which is not owned by the government. CAA is responsible for the authority function regardless of ownership.

5.3 To provide aircraft accident investigation. Establishment of an independent Agency performing State functions by delegated powers. Establishment of goals and objectives consistent with the over-all goals and objectives for the Civil Aviation System. Authorisation to CAA to require that Agency to investigate specific accident or incident.

6. Provisions for authorised persons employed by the CAA or performing State functions by delegated powers.

The following areas should be addressed in the Act: Right of access. Provisions for identification cards. Rights to obtain information as may be required to execute the delegated powers. Retrieval and retention of documents. Power to take action to prevent severe danger. All powers exclusive for designated persons, that reach beyond the normal civic rights must be included in the Act.

7. Vesting of privileges and corresponding responsibilities.

Establish under what conditions privileges may be vested in licensed individual persons. Stressing the corresponding responsibilities for maintaining the knowledge, skill, experience and to be medically fit. Finally the individuals responsibility for his safety performance. Provisions for non-terminating licences.

Recognition of an approved organisation as a legal subject for operation of aircraft, or performing other approved services within the Civil Aviation System. Vesting of privileges in an approved organisation. Managements responsibility for safety. Prescribe that the vested privileges and corresponding responsibilities, are related to the established in-house procedures, which shall comply with the applicable Regulations and Standards. Maximum duration time for Certificates of Approval set to five years.

8. General rulemaking procedures

8.1 Regulations

For all the detailed areas under section 3 of this Act. The Governor-General may from time to time, by Order in Council, make such regulations as appear to him necessary or expedient;

For carrying out the Convention with its Annexes and any other treaty or agreement regarding the Civil Aviation System between the State and Other States; or

Generally for regulating civil aviation to meet the general goal and objectives established under section 2 of this Act.

8.2 Standards

Provisions for establishment of aviation safety Standards consistent with the Regulations, to be promulgated by the CAA as a basis for vesting privileges in individuals and organisations and for certification of products, parts, facilities, systems or procedures.

Provisions for a mandatory consultancy with members of the Civil Aviation System concerned, and for defined lead times for new Standards to become effective.

8.3 Airworthiness and Operational Directives

Delegation of powers to CAA to:

1. issue, validate, amend and cancel Emergency Airworthiness Directives, consistent with the Airworthiness Regulations. (State function covered by Annex 8, continuing airworthiness); and

2. to issue, validate, amend and cancel Emergency Operating Directives, consistent with the Operating Regulations. (This State function is not explicitly spelled out in Annex 6. An Operating Directive may concern one or more operators, types of operation, etc. Any means, to ensure timely promulgation in the interest of safety, may be used); and

3. to issue, validate, amend and cancel regular Airworthiness Directives, consistent with the regulations. (State function covered by Annex 8, continuing Airworthiness). However, prior to promulgation, the persons or organisations within the Civil Aviation System concerned, shall be invited to comment on the proposed Directive. The Airworthiness Directives are (like today) considered to be parts of the Airworthiness Standards. (Presently issued as volume 2 of NZCAR).

8.4 General rules concerning Regulations, Standards and Airworthiness and Operational Directives.

A general requirement that all operations within the Civil Aviation System shall be in accordance with the Regulations and any other condition the State may consider applicable in the interest of safety and in accordance with all appropriate treaties and agreements between the State and other States. Any rule in this Act or in the regulations, which refers to a licensed person or approved organisation, apply also to any person or organisation who engages in an operation governed by these rules without the appropriate Licence or Certificate of Approval.

8.5 Insurance liability.

Implementation of Conventions related to liability.

8.6 Property rights in aircraft.

Implementation of the Convention on the international recognition of rights in aircraft (Geneva 1948).

8.7 International security measures.

Implementation of the Conventions in the security area.

9. Enforcement

Establish provisions for enforcement of the legislation within the Civil Aviation System. These provisions shall lay down the rules for suspension and cancellation of vested privileges, rules for disqualifications, establish provisions for civil penalties, and lay down provisions to enforce criminal offences. All provisions for enforcement shall appear in the Act. None in the Regulations.

10. Right of Appeal

Any person or organisation affected by a suspension, cancellation or disqualification by an order of a court, shall have the right to appeal to the court for reconsideration of the decision.

11. Charges and dues

12. Application of the Act to Cook Islands and Tokelau

APPENDIX IX

THE NEW CIVIL AVIATION REGULATIONS
Suggested Content

The proposed Regulations shall include general specifications to implement the Act, that are not likely to require frequent update. Detailed specifications, used as conditions to receive particular privileges (licences, Certificates of Approval, Certificates of Airworthiness etc.), subject to change with technical development, would be published as Standards.

We propose the following sections and subsections in the new Civil Aviation Regulations.

1. Definitions and abbreviations.

2. Procedural rules

2.1 Rulemaking

2.2 Entry control

2.3 Functional supervision

2.3.1 Surveillance
2.3.2 Support
2.3.3 Corrective actions

24. Exit control

2.5 Analysis of change

2.6 Delegated authority to designers

2.7 The Civil Aviation Award Fund

3. Personnel Licensing

3.1 Individual licences

3.1.1 *etc.* Requirements, privileges and limitations of different licences and ratings

3.2 Training systems and techniques

3.3 Training aids including simulators

3.4 Recurrent training requirements

3.5 Medical standards and renewal

3.6 Licensing procedures

3.7 Approved training organisations

3.7.1 Flight training organisations
3.7.2 Maintenance training organisations
3.7.3 Air traffic controller training organisations

4. Aircraft and airworthiness

4.1 Classification of aircraft

4.2 Certification procedures for products and parts

4.3 Design requirements general

4.4 Airworthiness standards for different classes of aircraft

4.5 Manufacture

4.6 Identification marking

4.7 Distribution

4.8 Maintenance and Minimum Equipment List

4.9 Performance and flight characteristics

4.10 Documentation

4.11 Additional operational equipment

4.12 Installation

4.13 Registration of aircraft

4.14 Marking

4.15 Certification of airworthiness

4.16 Continued airworthiness

4.17 Alteration

4.18 Discard

4.19 Aviation fuel and other chemical consumables

4.20 Approved design and manufacturing organisations

5. Approved organisations, general provisions

5.1 Objectives defined and documented

5.2 Structures services and hardware and external support

5.3 Financial and economic resources

5.4 Management control and development system

5.5 Personnel

5.6 Risk evaluation and liability

5.7 Information and communication

5.8 Vesting of privileges in an approved organisation

6. Approved commercial air transport operation

6.1 Commercial air transport operators

6.2 Commercial air transport maintenance facilities

7. Approved commercial general aviation, aeroplane

7.1 Commercial general aviation operators, aeroplane

7.2 Commercial general aviation maintenance facilities

8. Private general aviation, aeroplane

8.1 Private general aviation operators

8.2 Private general operation maintenance facilities

9. Approved helicopter operations

9.1 Approved helicopter operators

9.2 Private helicopter operators

9.3 Helicopter maintenance facilities

10. Aerodromes

10.1 Classification of aerodromes

10.2 *etc.* Requirements for different approved aerodrome operators

11. Certified aeronautical products, parts, facilities, systems and procedures in the aerodrome systems

11.1 *etc* Requirements for design, manufacturing, operation, maintenance, certification, systems worthiness, alteration and discard.

12. Approved airways system operations

12.1 Classification of airways system operations

12.2 *etc* Requirements for different approved airways system operators

13. Certified aeronautical products, parts, facilities, systems and procedures in the airways system

13.1 *etc* Requirements for design, manufacturing, operation, maintenance, certification, systems worthiness, alteration and discard.

14. Aviation weather and communication services

14.1 Requirements regarding the provision of facilities, services and equipment relating to aviation weather services

14.2 Approved aviation weather services

15. Aviation security

15.1 Requirements regarding the provision of facilities, services and equipment relating to aviation security

15.2 Approved aviation security agencies

15.3 Aeroplane operators security measures

15.4 Indirect air carrier security

16. Aeronautical maps, charts and information

16.1 Requirements regarding the provision of aeronautical maps, charts and aeronautical information publications

16.2 Approved aeronautical maps, charts and aeronautical publications agencies

17. Sports and recreation organisations

17.1 Classification of sports and recreation

17.2 *etc* Requirements for different approved sports and recreation organisations

18. Certificated aeronautical products, parts, facilities, systems and procedures in the sports and recreation area (if needed)

18.1 *etc* Requirements for design, manufacturing, operation, maintenance, certification, systems worthiness, alteration and discard

19. Hazardous objects to aviation safety

19.1 Regulations in respect to use and operation of objects that are likely to be hazardous to aviation safety (rockets, moored balloons, kites, etc.)

20. Airspace

20.1 Classification of airspace

20.2 Designation of airspace

20.3 Special use airspace, prohibitions and restrictions

20.4 Objects affecting navigable airspace

21. Air traffic rules

22. General operating and flight rules

23. Noise and pollution

23.1 Regulations concerning aircraft noise

23.2 Regulations concerning aerodrome noise

24. Facilities

24.1 Regulations concerning facilities coordination at international airports

24.2 Appointed person responsible for coordination of facilitation

25. Search and rescue

25.1 Coordination of State functions regarding search and rescue

26. Records

26.1 Regulations regarding the keeping and preservation of records and documents relating to licence holders approved organisations and certified products, parts, etc.

27. Hours of work

27.1 Regulations limiting the hours of work of flight crew members

28. Charges

28.1 Charges or fees

APPENDIX X

COMPARISON OF REGULATIONS 1953
and
ANNEX 6 PART I
International Commercial Air transport

The following are examples of potential deviations between Annex 6 and the Regulations.

1. Notification of violation of local regulations or procedures (Annex 6 3.4/Reg 59(4)):

   The Reg talks about New Zealand rules and regulations only, not rules and regulations violated in other states. Compliance with rules of foreign States. Compliance with rules of foreign states are covered by Reg 144. The feed back of information to the CAD is not covered.

2. Search and rescue information onboard (3.6 / 141(1)(f)): no explicit requirements in the Reg.

3. Report on observed inadequacy of facilities (4.1.3 / 71): this Reg talks about hazardous flight conditions in general and corresponds to 4.4.3 in the Annex. No requirement to report inadequate facilities is found in the Reg.

4. In flight simulation of emergency situations with pax on board (4.2.3 / 48(d) + 141(1)): The intention of 4.2.3 is not explicit in the Reg.

5. Minimum flight altitudes (4.2.5.4-NS / 141): the Reg does not include that the method used to establish minimum flight altitude shall be included in the Ops manual.

6. Aerodrome operating minima (4.2.6.2 / 141): the Reg does not include requirements regarding methods used to determine aerodrome operating minima (Doc 9365).

7. Fuel and Oil records (4.2.8 / 28A) Reg 28A is expanded in CAIC GEN A49. The requirement for air transport operation does not include fuel and oil information.

8. Operational flight plan (4.3.6. / 86): the ops flight plan shall contain "such information as the Director may prescribe". No CASO seems to address the substance of 4.3.3.

9. Fuel and oil supply (4.3.6 / 86): the requirements in CASO 4 make no difference between propeller driven aeroplanes and aeroplanes that driven by turbo-jet engines as long as they belong to the same performance group. The same minimum fuel for holding is applied.

10. Flight crew members at duty stations (4.44.2 / 66(2) + 73(2)): The pressure en route requirement does not meet the standard.

11. Instrument flight procedures (4.48 / 100): the Reg states that the Director may from time to time prescribe instrument approach procedures in relation to the use of any aerodrome. Also that the pilot in Command intending to land at any such aerodrome shall comply with those procedures where the meteorological conditions at the material time warrant the procedures being followed. The Annex states that one or more instrument approach procedures shall be approved to search each aerodrome utilized for instrument flight operations. Furthermore all aeroplanes operated IFR shall comply with the approved instrument approach procedure. The provision in the Reg for the Pilot in Command to cancel the IFR flight plan, and continue VFR at his discretion, seems strange.

12. Notification of accidents (4.5.3 / no Reg): Pilot in Command's reporting responsibility is covered by the Cicil Aviation Accident Investigation Act 1978. This legislation is not made known to the pilots in NZAIP.

13. Journey Log Book and reporting of defects (4.5.4 + 4.5.5 / 26(g) + 28A + 59(3) + 78 + 198(3) + 199 + CAIC A49) after flight there is no requirements in the Reg for the Pilot in Command to declare (with his signature) that he has fulfilled his reporting requirement. This is a very important issue. The same signature is usually also used to define when the flight is terminated from a responsibility point of view. The PiC is in command until he has signed the Journey Log Book after the termination of the flight. Besides the important detail, the whole area of reporting and documentation of flight records must be clarified in the future regulations.

14. Extended range operations (4.7 / no Reg): there are no provisions for extended range operations in the Reg. Provisions are included in Air New Zealand's Operations Specifications.

15. Safety harness (6.2.2.1.c) / 104(ba)): the Annex recommends that a device to prevent a suddenly anticipated pilot from interfering with the flight controls should be incorporated. We strongly suggest the adoption of this recommendation.

16. Flight recorders (6.3 + 6.3.10 + 11.7 / 107(bb)): the Reg stipulates "such flight-recording instruments as the Director may require". CAIC GEN B111/83 was issued 26 October 1983. This CAIC proposed standards for FDR and CVR to comply with ICAO SARPS. This CAIC was self cancelled on 30 December 1983. To our knowledge, the proposed requirement is still not incorporated in NZCAR as intended.

    The standard that "flight recorders shall not be switched off during flight time", is not promulgated. Also the standard stating that an operator shall ensure, to the extent possible, in the event of an accident, (and *should* in the event of an *accident*), preserve the flight recorder records, is not implemented. Also there area provisions to ensure that operators of Air Traffic Services according to the Annex 11, shall preserve the corresponding automatic recordings made by the ATS-unit concerned.

17. March number indicator (6.14 / no Reg): all turbo-jet aeroplanes shall be equipped with an airspeed indicator that derive March numbers for ATC purposes.

18. Cabin attendants' seats (6.16 / 73): the requirement for CA-seats located near floor level and other emergency exits that shall be equipped with forward or rewarding facing seats, fitted with a safety harness, on or after 1 January 1981, is not incorporated in the Reg.

19. Inspection (8.4 / 174(e)): the Reg talks about inspection of work in the sense of detailed inspection of maintenance work. The Annex talks about a " system of inspection" to ensure that all maintenance *etc* is effected. This includes the need for Quality Assurance functions in large organisations. This aspect is not covered by the Reg.

20. Qualification to certify as airworthy and Maintenance releases (8.5 + 8.6 / 169 + 171 + 171A + 174(f) + 175 + NZCAR): the requirements for different releases in the Reg and NZCAR are very complicated compared to the provisions in Annex I chapter 4. There is room for drastic simplification.

21. Training in the transport of dangerous goods (9.3.1 / 31): the training requirement is not covered by the Reg, but can be found in the NZ CAP 36.

22. Reporting of unlawful interference (13.4 / no Reg) the PiC shall report such acts to the designated local authority. (Compare Reg 144).

APPENDIX XI

CIVIL AVIATION SAFETY ORDERS (CASOs) and CIVIL AVIATION INFORMATION CIRCULARS (CAICs) Comments

The CASOs are not "customer oriented". Some rules are to be found in the Regulations, others in the CASOs. On top of that, the industry is complaining that even CAICs contain regulatory material. This is indeed true; 22 out of 64 published CAICs (whereof 19 also are published in the AIR series) include regulatory issued. The following comments are related to CAICs:

1. Air ambulance standards and air ambulance approval and registration (A8 + A68): the Director mat according to Reg 131(2) prescribe operational or technical requirements for any class of operation. Air ambulance functions in undeveloped areas is classified as aerial work operations, while other air ambulance servises are classified as air transport operations. There are no CASOs specifying ant operational requirements specifically for air ambulance operations. Regulation 35 opens the possibility to do any urgent transportation without notice to the requirements regarding type of aircraft.

   We propose that the future regulations distinguish between: (1) true Emergency flights according to the intention of the existing Reg 35, (2) Ambulance and Rescue service performed by approved organisations equipped and trained for that purpose, and (3) Medical transports requiring special equipments in the aircraft, but otherwise regular air transport without any special operational privileges or requirements.

2. Obstruction marking standards(A13): Reg 190C confers power on the Minister to require the owner of an obstacle to mark or illuminate the object. This Reg does not confer on the Director powers to issue detailed standards. Besides this, we feel it is rather late to require illumination of an obstacle when it is already there. Reg 187(3) prevents any building, pole, mast, fence , *etc* to be erected on any licensed aerodrome exept with the approval of the Director. Nothing seems to prevent the neighbouring landowner from erecting an obstruction on his land. This could be very costly to society. We propose that some legislation makes it possible to coordinate the planning of, and had the power to prevent, the erection of any major obstruction to air navigation in the vicinity of an aerodrome if this is beneficial to society. We have in our proposal inserted such a provision in the Act.

3. Pilot's substandard braking report, and reporting of bird hazards (A20 + A21 / 35 + 59(4) + 71 + 149E(e)): the different reporting requirements laid in the Pilot in Command is found in a number of places. In the future regulatory system we propose that the total information flow is addressed in a "customer oriented" way. Example: a commercial pilot in an approved organisation shall find all his reporting requirements laid down in the Operations Manual. The main receiver is the company. Some information shall also be supplied in parallel to ATC functions and Airport authorities (and also some foreign authorities). The company shall be required to establish routines to copy some of the information required for CAD. The basic principle shall be: no information shall be produced exclusively to CAD. If some information is requested that the company does not need exclusive not need in order to assume its responsibility, CAD's need should be questioned. CAD shall be responsible for analysis of all safety information and ensuring that the summary conclusion is fed back through the company to the pilots.

4. Air services licenses, standards criteria (A93 / 136): as described in Chapter 3, the relation between the air service licence and the air service certificate (if needed), is complicated. The purpose of this CAIC is to "promulgate the standards that each

applicant will be required to meet before CAD will provide a positive recommendation. The CAIC is in turning referring to other documents. The "Air Service Certificates – Airworthiness Aspects, and the NZCAP 36. In NZCAP 36 one can find a number of additional requirements. The intention of the document "to explain the administrative procedure for the issue and variation of Air Services Certificates, and to indicate requirements to be met" is good, but unfortunately today questionable from a legal point of view. It is hard to prove that the content is consistent with the regulations, in the way the Regulations are written today.

5. Air services certificates (A100 / 131(2) + 136): Reg 136 confers on the Director power to include in an air service certificate "such conditions as he considers necessary in the interests of safety". This Reg does not confer on the director powers to issue general requirements; that is provided through Reg 131(2). This provision is used only to publish CASO 7, Trans Oceanic Flight Private Operations, and CASO 9, General Aviation.

   CASO 9 includes no standards for management *etc*. In the future regulations the structure must be "customer orientated" such that an operator in one package gets all requirements applicable to his operation.

6. Carriage of dangerous goods (A104 / 31): The Reg confers powers on the Director to "prescribe by CASO, a schedule of items the carriage of which by air is prohibited, or which may only be carried subject to conditions specified in that behalf in the order". The Director may also, in the order, approve the conditions and regulations published by any organisation about dangerous goods. In CASO 13, Annex 18 and ICAO Technical instructions TI, are made part of CASO 13 except as otherwise provided for in the CASO. IATA Dangerous Goods Regulations 25th edition of IATA RAR, is also accepted to be used by the operators. (IATA RAR is replaced by IATA DGR, Dangerous Goods Regulation, latest issue edition 29 effective 1988-01-01. To overcome this, future regulations should refer to "current edition).

   There is no provision in the present regulations explicitly conferring powers on the Director to grant exemptions from the adopted ICAO Technical Instructions. The future regulations should take advantage of the provision in Annex 18, 201, which states "this Annex shall be applicable to all international operations of civil aircraft, in cases of extreme urgency or when other forms of transport are inappropriate or fully compliance with the prescribed requirements is contrary to the public interest, the States concerned may grant exemptions from these provisions provided that in such cases every effort shall be made to achieve an over-all level of safety in transport which is equivalent to the level of safety provided by these provisions".

7. Aircraft instrument and equipment requirements (A108 / several Regs): this CASO is a good attempt to overcome the jungle of regulations *etc* in this area. It addresses aircraft, but unfortunately not all helicopter requirements are covered. (CASO 9 part 2 section 8). This is aid only to underline how difficult it is today to get a total picture of what is applicable. A more important issue is implementation of operationally related airworthiness requirements in general.

   In NZCAR section C.1, the basic airworthiness design standards for aircraft are the US Federal Aviation Regulations (FAR). For Radio communication and Navigational

equipment, the British Civil Airworthiness Requirements (BCAR) have been selected as basic standard. In the FAR system, a number of airworthiness requirements are imposed on the operator through other FAR's related to the type if intended operation (*eg* Part 91, General Operating anf Floght Rules, and Part 135, Air Taxi Operators and Commercial Operators).

In order to achieve the intended safety level for a certain type of moderation it is important not to loosen any part of the applicable requirements. There must be a "systems approach". This becomes more and more important when aircraft with sophisticated integrated flight management systems are introduced. (This trend is more rapid in the General Aviation are than in the Air Transport area, which means that operators with limited support functions are involved).

In order to minimize the work load for CAD, we propose that one total foreign system be selected as the primary design and operational airworthiness standard for New Zealand. Accepting the fact that the majority of aircraft on the register are manufactured in the US adoption of FAR is logical. This means that British standards for Avionics and Navigational equipment would be replaced by the equivalent FARs *etc*. Another important issue is to systematically review all Notices to Proposed Rulemaking of applicable FARs and take decisions on all final rules for implementation of the FAR system in access to and possible use of all supporting documentation, all cost-benefit analysis for change *etc*.

APPENDIX XII

METHODOLOGY AND ASSUMPTIONS

All staff required for the new organisation have been allocated a salary level that may be "generous", but recognises and reflects the increased responsibilities and expertise required. The average salary level is around 13% higher than at present.

Internal travel costs are high, a direct result of closing regions. The frequency of visits required to carry out their responsibilities had been assessed for each person in each division of the safety authority, including the duration of the visit. An average airfare between Auckland and Auckland and Wellington has been used as representative of the cost of a day's travel, motor vehicle rental of $65 per day, $150 for overnight accommodation and meals and a daily allowance of $50. We would expect better rates could be negotiated given the magnitude of the travel.

Expenditure associated with regions is eliminated, including regional aviation security.

Costs associated with the flying unit have been estimated, consistent with the reduced role of the unit to one F27 and quitting Paraparaumu Airport.

Rental of premises is based on 2.5 floors in Aurora House at the existing rental, plus 10% allowance for cleaning. It may be possible to accommodate all staff on two floors. The recommended location of the safety authority is discussed in chapters 15 and 16.

The 1988/89 budget is the base for our estimated expenditure for the safety authority. Overheads have been changed where the requirement is clearly affected by our proposals.

Flying time, GA and Airline Inspectors.

- Inspectors will gain the flying time necessary to retain their licences and stay competent by acting as co-pilot on commercial services (including helicopters);
- Required flying time for checks and ratings is 3 hours pa per inspector or 8 hours pa for simulator time, if available. Hourly charge for simulator: F27 $544, B737 $700, B767 $950, B747 $950. These aircraft will not be hired for training.

All dollars expressed in 1988 (March) values.

- Paid for all travel and car hire would be required on 25% of travel days for commercial transport, 50% for GA and 90% for personnel licences.

We have included $200,000 for overseas travel (1988/89 Budget $50,000) in recognition of the desirability of highly qualified personnel retaining their technical expertise and knowledge.

$100,000 for Directors Pacific Conference (CHC) has been included for comparability. If it were not shown it would suggest a saving as a result of our proposals.

Aircraft hourly rates and hours charged to Airways Corporation, Pacific Islands and Mt Cook were provided by Flying Operations Division.

While office facilities would be required for field visits, we do not envisage a need for permanent field officers. Portable computers and offices supplied by operators, or motel/hotel facilities, should be satisfactory.

Total costs of the aviation safety authority have not been calculated. Consistency has been sought to facilitate calculation of the reduction in expenditure of dunning today's CAD compared with the new safety authority. Interest and depreciation are not included in either set of figures, nor superannuation subsidy payments. Revenue, other than that associated with the Flying Unit, is not affected by our recommendations and also has been excluded.

APPENDIX XIII

TERMS OF REFERENCE

TERMS OF REFERENCE

REVIEW OF CIVIL AVIATION REGULATIONS AND THE RESOURCES, STRUCTURE AND FUNCTIONS OF THE MINISTRY OF TRANSPORT CIVIL AVIATION DIVISION

1. Purpose

1.1 Following the establishment of the Airways Corporation of New Zealand, it is appropriate to review in depth the residual role and functions of Civil Aviation Division. The study is to consider the need for current and proposed regulatory controls in civil aviation and the requirement to enforce them. From this examination conclusions will be drawn on the appropriate level of regulation, taking into account the safety factor, economic considerations and New Zealand's international commitments. The resource requirements for the Civil Aviation Division will then be determined.

1.2 The primary focus of the study will be on the need for civil aviation regulations, their costs and benefits, and how they should be administered including the extent to which agents of the Government need to be involved in standard setting and enforcement. The study will take place, having regard to the Government's policy to fully cover the cost of Civil Aviation Division and standard enforcement from the industry within the context of the Government's policy to fully recover the cost of civil aviation from the industry.

2. Terms of Reference

2.1 The review is to identify:

(a) The legal basis (both international and domestic) for civil aviation regulations, including New Zealand's specific international commitments. The study is then to distinguish between:

(i) the minimum level of regulations to comply with the relevant safety and international obligations; and

(ii) the areas of discretion in application of regulations, so that the benefits and costs of exercising this discretion can be examined.

This will involve assessing the potential impact on aviation safety and/or air operations by waiving or removing particular regulations.

(b) The Civil Aviation Division's existing clients, their expectations and requirements of the Division.

(c) The costs and benefits of civil aviation regulations, both in terms of the minimum requirement identified in (a)(i) above, and the discretionary

regulations identified in (a)(ii). Under each grouping of regulations the study is to cover:

(i) benefits through increased aviation safety or savings in operating costs;

(ii) compliance costs to operators and users of air services; and

(iii) costs to the Government through Vote: Transport and other departmental expenditure, and the detail of this cost in terms of finance, personnel and physical resources employed by the Civil Aviation Division.

(d) The optimal organisational structure(s) to fulfil the appropriate regulatory role. This will involve an assessment of alternative institutional structures ranging from the existing divisional arrangement, a stand-alone department or placement in some other structure either inside or outside the Public Service. Matters to be examined are:

(i) the strengths and weaknesses of the present and alternative institutional arrangement;

(ii) the positions and internal organisation structure required to achieve optimum organisational effectiveness;

(iii) resource implications of the appropriate structure(s), including staffing, finance and basic operating equipment.

3. Methodology

3.1 A consultant of international standing with the requisite technical, legal and economic skills will be engaged to conduct the study. The study will take place over a three month period during which the consultant will report to and take direction from a steering committee of officials chaired by the Ministry of Transport. The following departments will be represented on the steering committee:

Ministry of Transport (chair)
Treasury
State Services Commission
Trade and Industry

3.2 The study will be funded from Vote: Transport.

T.J. Sanger
Steering Committee Chairman
Ministry of Transport