



## WELLINGTON NEW ZEALAND

PURSUANT to Section 28 of the Civil Aviation Act 1990

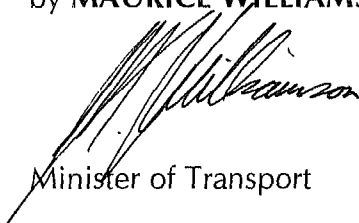
I, MAURICE WILLIAMSON, Minister of Transport,

HEREBY MAKE the following ordinary rules.

SIGNED AT Wellington

This 12 day of December 1996

by MAURICE WILLIAMSON



Minister of Transport

Civil Aviation Rules

Part 91

General Operating and Flight Rules

Docket Nr. 1076

## **Civil Aviation Rules**

### **Part 91**

## **General Operating and Flight Rules**

## **RULE OBJECTIVE, EXTENT OF CONSULTATION AND COMMENCEMENT**

The objective of Part 91 is to define a regulatory safety boundary for persons wishing to operate aircraft within New Zealand and New Zealand registered aircraft outside New Zealand. The boundary prescribes general operating and flight rules for the safe operation of aircraft and to minimise any endangerment to persons and property.

In May 1990 the Air Transport Division of the Ministry of Transport published a notice of intention to carry out a complete review of the aviation regulatory system. This notice, in Civil Aviation Information Circular Air 3, listed the areas in which rules would be made and invited interested parties to register their wish to be part of the consultative process. The Register was identified as the Regulatory Review Consultative Group.

A draft of Part 91 was developed by the rules rewrite team in consultation with members of the consultative group. An informal draft was published and distributed in 21 November 1994 and a period of informal consultation followed. This culminated in the issue of Notice of Proposed Rulemaking 95-12 under Docket 1076 on 20 December 1995.

The publication of this notice was advertised in the *Gazette* and the daily newspapers in the five main provincial centres on 21 December 1995. The notice was mailed to members of the Regulatory Review Consultative Group and to other parties, including overseas Aviation Authorities and organisations, who were considered likely to have an interest in the proposal.

A period of 98 days was allowed for comment on the proposed rule.

The submissions and verbal comments were considered and where appropriate the proposed rules amended to take account of the comments made.

The rules as amended were then referred to and signed by the Minister of Transport.

Part 91 comes into force on 1 April 1997.

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## Subpart A — General

### 91.1 *Applicability*

(a) This Part prescribes general operating and flight rules for the operation of civil aircraft.

(b) Subject to paragraphs (c)(1) and (d), the following rules shall also apply to members of the New Zealand Defence Force and any aircraft operated by the New Zealand Defence Force where such aircraft operates within the territorial limits of New Zealand:

- (1) 91.129:
- (2) 91.223-91.225 inclusive, when operating in the vicinity of civil aircraft:
- (3) 91.229, when operating in the vicinity of civil aircraft:
- (4) 91.233:
- (5) 91.241:
- (6) 91.245-91.247 inclusive:
- (7) 91.309:
- (8) 91.313:
- (9) 91.407-91.411 inclusive:
- (10) 91.425-91.427 inclusive:
- (11) 91.431:
- (12) 91.541.

(c) This Part shall not apply to—

- (1) any member of the New Zealand Defence Force or any aircraft operated by the New Zealand Defence Force acting in connection with—
  - (i) any war or other like emergency; or
  - (ii) the defence of New Zealand and other New Zealand interests; or
  - (iii) aid to the civil power in time of emergency; or
  - (iv) the provision of any public service; or

(v) any operation performed within a restricted, danger, or military operational area designated under Part 73 for military purposes; and

(2) persons operating aircraft to which Part 101 applies; and

(3) persons and equipment to which Part 105 applies.

(d) The following rules shall not apply to any member of the New Zealand Defence Force or any aircraft operated by the New Zealand Defence Force performing training for an operation specified in paragraph (c)(1) if that training cannot be performed in accordance with the rule:

(1) 91.225(b):

(2) 91.233:

(3) 91.313, if training outside controlled airspace:

(4) 91.407, if training outside controlled airspace:

(5) 91.427, if training outside controlled airspace.

### **91.3 Definitions and abbreviations**

*Reserved*

### **91.5 Compliance with crew instructions and commands**

(a) A passenger shall not smoke in any part of the aircraft when instructed not to by a crew member, or by passenger information signs, or by placards.

(b) A passenger shall, when instructed by a crew member, or by passenger information signs, or by placards—

(1) occupy a seat or berth; and

(2) fasten and keep fastened about themselves any installed safety belt or safety harness.

(c) A passenger shall comply with any commands given to them by the pilot-in-command pursuant to 91.203.

### **91.7 Portable electronic devices**

(a) Except as provided in paragraphs (b) and (c), no person shall operate, nor shall any operator or pilot-in-command of an aircraft allow the operation of, any portable electronic device on any New Zealand registered aircraft flying under IFR.

(b) Paragraph (a) shall not apply to—

- (1) hearing aids; and
- (2) heart pacemakers; and
- (3) portable voice recorders; and
- (4) electric shavers; and
- (5) electronic watches.

(c) Paragraph (a) shall not apply to aircraft being operated under IFR while in cruise between initial top of climb and final top of descent—

- (1) while flying with TCAS operating; or
- (2) while flying under SSR coverage, with TCAD operating; or
- (3) where the operator verifies, prior to carriage in the aircraft, that the individual portable electronic device has been certified that it will not cause interference with any system of the aircraft on which it is being used.

### **91.9 Carriage and discharge of firearms**

(a) Except as provided in paragraph (b), no person shall carry a loaded firearm or loaded tranquilliser gun in an aircraft, nor shall an operator permit a person to carry a loaded firearm or loaded tranquilliser gun in an aircraft.

(b) A person may carry and discharge a firearm or tranquilliser gun in an aircraft that is—

- (1) carrying livestock, if the pilot-in-command or a crew member considers it necessary to immobilise livestock for the safety of the aircraft or its occupants; or
- (2) being operated on a police operation that is authorised by the Commissioner of Police; or
- (3) a helicopter operating for the purpose of shooting wild animals or immobilising animals, provided that—
  - (i) the discharge does not hazard or cause damage to persons or property on the ground; and
  - (ii) the discharge is made clear of any congested area of a city town or settlement, and any open air assembly of persons; and

- (iii) the firearm or tranquilliser gun is not loaded until the helicopter is in the area within which the discharge is to be made.

(c) Each person operating a helicopter for the purpose of paragraph (b)(3) shall not carry any person other than those necessary for the operation.

**91.11 Prohibition against interference with crew members, aircraft and aviation facilities**

No person shall—

- (1) interfere with a crew member in the performance of the crew member's duties aboard an aircraft; or
- (2) tamper or interfere with any aircraft or its equipment, or with fixed or mobile equipment used for the operation or navigation of any aircraft.

**91.13 Aircraft noise and vibration**

A person shall be barred by section 97 of the Act from bringing an action for nuisance in respect of the noise or vibration caused by an aircraft or aircraft engine on an aerodrome if—

- (1) the aircraft is taking off or landing; or
- (2) the aircraft is manoeuvring on the ground or water; or
- (3) any person is operating any engine in the aircraft, prior to take-off for the purpose of ensuring—
  - (i) satisfactory engine performance; or
  - (ii) that the instruments, accessories, or other components are in a satisfactory condition.

## **Subpart B — Operating Rules**

**91.101 Aircraft airworthiness**

(a) Except as provided in paragraph (c), no person shall operate an aircraft unless—

- (1) it has a current airworthiness certificate; and
- (2) it is in an airworthy condition.

(b) Each person operating an aircraft issued with an airworthiness certificate under Part 21, Subpart H shall comply with any operating limitations issued with the airworthiness certificate under 21.173(b).

(c) A person may operate an aircraft for which a type certificate or type acceptance certificate is in force for the purpose of demonstrating the eligibility of the aircraft for the issue, renewal, or reinstatement of an airworthiness certificate if—

- (1) the aircraft complies with the requirements in 21.191(b)(1)-(5) inclusive; and
- (2) a person meeting the requirements in 43.101 certifies that the aircraft is fit for flight; and
- (3) the pilot-in-command is the holder of a valid pilot licence and a type rating for the type of aircraft to be tested; and
- (4) no other person is carried unless that person performs an essential function in connection with the flight test.

#### **91.103 Restricted category airworthiness certificate – Operating limitations**

No person shall operate an aircraft issued with a restricted category airworthiness certificate under Part 21, Subpart H for flight instruction other than—

- (1) conversion instruction for a type rating; or
- (2) flight instruction for the issue of an agricultural rating; or
- (3) flight instruction for the specific operational purpose for which the aircraft is certificated.

#### **91.105 Special category airworthiness certificates – Operating limitations**

(a) Except as provided in paragraph (b), no person shall operate an aircraft that has a special category airworthiness certificate for the carriage of persons, or goods, for hire or reward.

(b) Paragraph (a) shall not apply when the person being carried is—

- (1) the holder of a flight instructor rating issued under Part 61; and
- (2) giving conversion instruction to the operator.

(c) Except in the case of take-off and landing, no person shall operate an aircraft that has a special category airworthiness certificate over a congested area

of a city, town, or settlement, or over an open air assembly of persons unless otherwise authorised by the Director.

(d) Each person operating an aircraft that has a special category airworthiness certificate shall advise each person carried of the special nature of the aircraft.

#### **91.107 Aircraft registration**

No person shall operate an aircraft unless it is registered and identified in accordance with the requirements of—

- (1) Part 47; or
- (2) the appropriate aeronautical authorities of a contracting State of ICAO; or
- (3) the appropriate authorities of another State that is party to an agreement with the Government of New Zealand or the Civil Aviation Authority of New Zealand which provides for the acceptance of each other's registrations.

#### **91.109 Aircraft flight manual**

No person shall operate an aircraft unless it is operated in compliance with the operating limitations specified in the aircraft flight manual.

#### **91.111 Documents to be carried**

(a) No person shall operate an aircraft unless the following documents are carried in the aircraft—

- (1) the current airworthiness certificate; and
- (2) the aircraft flight manual; and
- (3) for New Zealand registered aircraft, a technical log; and
- (4) the certificate of registration in—
  - (i) New Zealand registered aircraft operating outside New Zealand; and
  - (ii) foreign registered aircraft when operating within New Zealand.

#### **91.113 Aircraft flight crew members**

No person shall operate an aircraft without at least the number of flight crew members required by the aircraft flight manual.

**91.115 Flight attendant requirements**

(a) Except as provided in paragraph (b), no person shall operate an aircraft carrying more than 19 passengers unless at least the following number of flight attendants are carried as crew members on the aircraft—

- (1) for aircraft carrying more than 19 but less than 51 passengers, at least one flight attendant;
- (2) for aircraft carrying more than 50 but less than 101 passengers, at least two flight attendants;
- (3) for aircraft carrying more than 100 passengers, at least two flight attendants plus one additional flight attendant for every unit, or part of a unit of 50 passengers in excess of 100 passengers carried.

(b) A flight attendant is not required to be carried—

- (1) in an aircraft that is carrying persons engaged in parachute operations; or
- (2) in a balloon; or
- (3) in a DHC6-300 or DHC6-310 aircraft type.

(c) No person shall operate an aircraft unless any flight attendants carried are—

- (1) familiar with the necessary functions to be performed—
  - (i) in an emergency; and
  - (ii) in a situation requiring emergency evacuation; and
- (2) capable of using the emergency equipment installed in that aircraft.

**91.117 Designation of pilot-in-command**

(a) No person shall operate an aircraft with more than one pilot unless, when the flight is planned, the operator designates a pilot-in-command for each period of the flight.

(b) For the purposes of this rule, operator means the person who causes or permits an aircraft to fly.

**91.119 Aircraft taxiing**

No person other than a flight crew member shall taxi an aircraft on the movement area of an aerodrome unless that person has been duly authorised by the operator or by a maintenance organisation, and—

- (1) is competent to taxi the aircraft; and

- (2) is competent to use the radiotelephone if radio communications are required; and
- (3) is familiar with the aerodrome layout and any procedures applicable to ground movements at that aerodrome.

**91.121 Stowage of passenger service equipment**

No person shall taxi, take-off, or land an aircraft equipped with—

- (1) any passenger food and beverage tray, or table; or
- (2) any passenger serving cart; or
- (3) any viewing screen that extends into the aisle—

unless that equipment is secured in a stowed position.

**91.123 Flight instruction**

No person shall give flight instruction in an aircraft, except a balloon, unless that aircraft is equipped with—

- (1) fully functioning dual controls; or
- (2) pitch, roll, yaw, and engine power controls which can be operated at either crew station.

**91.125 Simulated instrument flight**

(a) Except as provided in paragraph (b), no person shall operate an aircraft in simulated instrument flight unless—

- (1) the aircraft has two pilot stations and one pilot station is occupied by a safety pilot who is the holder of a current pilot licence; and
- (2) the safety pilot has—
  - (i) adequate vision forward and to each side of the aircraft; or
  - (ii) a competent observer to adequately supplement the vision of the safety pilot; and
- (3) the aircraft is equipped with—
  - (i) fully functioning dual controls; or
  - (ii) pitch, roll, yaw, and engine power controls which can be operated at either flight crew station.

(b) A person may operate an aircraft in simulated instrument flight that does not comply with paragraph (a)(3) provided—



- (1) the simulated flight is performed outside controlled airspace; and
- (2) the means of simulating instrument flight simulation can be removed rapidly by the pilot-in-command.

### **91.127 Use of aerodromes**

(a) No person shall operate an aircraft unless any place used as an aerodrome is suitable for the purpose of taking-off or landing in that aircraft.

(b) No person shall operate an aircraft at an aerodrome unless—

- (1) they comply with any limitations and operational conditions on the use of the aerodrome notified by the aerodrome operator; and
- (2) the runway, heliport, or water channel, is equipped with operative lighting, appropriate to that type of aircraft, when landing or taking off at night, and that the lighting is activated; and
- (3) they manoeuvre the aircraft clear of any manoeuvring area or part of any manoeuvring area that has been notified or marked as unsafe for aircraft use by the aerodrome operator; and
- (4) the runway, heliport, or water channel, is clear of all persons, animals, vehicles, vessels, or other obstructions during landing or take-off, other than persons, vehicles, or vessels essential to the operation; and

(c) No pilot shall operate an aircraft unless they can manoeuvre the aircraft in the aerodrome traffic circuit—

- (i) clear of any obstructions; and
- (ii) without conflicting with the aerodrome traffic circuit or instrument approach procedure of any other aerodrome.

(d) No person shall operate a helicopter unless they, in addition to paragraphs (a), (b), and (c), ensure that—

- (1) any place used as a heliport or as a place to hover within a congested area of a city, town, or settlement has—
  - (i) physical characteristics, obstacle limitation surfaces, and visual aids commensurate with the characteristics of the helicopter being operated and the ambient light conditions; and
  - (ii) approach and take-off paths such that, if the helicopter is not a performance Class 1 helicopter, an autorotative landing can

be conducted without causing undue risk to any person on the ground; and

- (2) any place used as a heliport or as a place to hover that is outside a congested area of a city, town, or settlement—
  - (i) is suitable for the helicopter to hover clear of obstructions; and
  - (ii) for a heliport, has a surface area suitable for touchdown and lift-off.

### **91.129 Restricted and danger areas**

(a) No pilot shall operate an aircraft within a restricted area designated under Part 73 unless—

- (1) that pilot has the approval of—
  - (i) the using agency specified for the area under Part 73; or
  - (ii) the controlling authority specified for the area under Part 73; and
- (2) for flight under VFR within an instrument approach restricted area, that pilot—
  - (i) operates the aircraft no closer than 1000 feet vertically and 1 nm horizontally from cloud and with visibility of at least 5 km; or
  - (ii) establishes that no aircraft is conducting an instrument approach procedure by maintaining two-way radio communications on the appropriate frequency.

(b) No person shall operate an aircraft within a danger area designated under Part 73 unless that person has established, after due consideration of the information provided by the using agency specified for the area under Part 73, that flight in the area will not affect the safety of the aircraft.

*[Until Part 73 comes into force, restricted, and danger areas are designated under Part 19]*

### **91.131 Low flying areas**

No pilot shall operate an aircraft within a low flying area designated under Part 73—

- (1) unless that pilot—
  - (i) is receiving dual flight instruction; or

- (ii) is authorised and briefed on the boundaries of the area and the method of entry and exit from the area by the holder of an instructor rating issued under Part 61; and
- (2) unless that pilot—
- (i) prior to entering the area, broadcasts, on the appropriate VHF frequency, details of the flight and proposed elapsed time in the area; and
  - (ii) maintains a listening watch on the appropriate VHF frequency while in the area and broadcasts or reports on vacating the area; and
- (3) unless that pilot, before entering the area on a solo flight, is satisfied that there are no other aircraft in the area.

*[Until Part 73 comes into force, low flying areas are designated under Part 19]*

## **Subpart C — General Flight Rules**

### **91.201 Safety of aircraft**

Each pilot-in-command of an aircraft shall—

- (1) be satisfied that the aircraft is in condition for safe flight; and
- (2) ensure the safe operation of the aircraft and the safety of its occupants during flight time; and
- (3) on completion of the flight, record in the technical log or other document acceptable to the Director any aircraft defects that are identified by the pilot-in-command during the flight.

### **91.203 Authority of the pilot-in-command**

Each pilot-in-command of an aircraft shall give any commands necessary for the safety of the aircraft and of persons and property carried on the aircraft, including disembarking or refusing the carriage of—

- (1) any person who appears to be under the influence of alcohol or any drug where, in the opinion of the pilot-in-command, their carriage is likely to endanger the aircraft or its occupants; and
- (2) any person, or any part of the cargo, which, in the opinion of the pilot-in-command, is likely to endanger the aircraft or its occupants.

**91.205 Crew members at stations**

(a) Each crew member on duty during take-off and landing in an aircraft, other than in a balloon, shall—

- (1) be at their crew member station unless their absence is necessary to perform duties in connection with the operation of the aircraft; and
- (2) have their safety belt fastened while at the crew member station.

(b) Each crew member on duty during take-off and landing in an aircraft, other than in a balloon, shall have their shoulder harness fastened while at their crew member station, unless—

- (1) the seat at the crew member station is not equipped with a shoulder harness; or
- (2) the crew member would be unable to perform their duties with the shoulder harness fastened.

**91.207 Occupation of seats and wearing of restraints**

(a) Each pilot-in-command of an aircraft shall require each passenger to occupy a seat or berth and to fasten their safety belt, or restraining belt, and, if equipped, shoulder harness—

- (1) during each take-off and landing; and
- (2) when the aircraft is flying at a height of less than 1000 feet above the surface; and
- (3) at other times when the pilot-in-command considers it necessary for their safety; and
- (4) during aerobatic flight; and
- (5) at all times in an open cockpit aircraft.

(b) Each pilot-in-command of an aircraft shall require each passenger to place their seat in the take-off and landing configuration during take-off and landing.

(c) Paragraphs (a)(1), (2), and (3) shall not apply to a child of less than 4 years of age if the child—

- (1) is held by an adult who is occupying a seat or berth, provided the child is secured by a safety belt attached to the adult's safety belt; or
- (2) occupies a seat equipped with a child restraint system, if the child does not exceed the specified weight limit for that system and is accompanied by a parent, guardian, or by an attendant designated

by the child's parent or guardian to attend to the safety of the child during the flight.

(d) Paragraph (a) shall not apply to persons carried in balloons or engaged in parachute operations.

### **91.209 Use of oxygen equipment**

(a) Each pilot-in-command operating an unpressurised aircraft shall require, during any time the aircraft is being operated between 10 000 feet and 13 000 feet AMSL for a period of more than 30 minutes, or above 13 000 feet AMSL—

- (1) each crew member and each passenger to use supplemental oxygen; and
- (2) each crew member to use portable oxygen equipment, including a regulator and attached oxygen mask, for any duty requiring movement from their usual station.

(b) Each pilot-in-command operating a pressurised aircraft shall —

- (1) during any time the cabin pressure altitude is above 10 000 feet AMSL, require—
  - (i) each crew member to use supplemental oxygen; and
  - (ii) each crew member to use portable oxygen equipment, including a regulator and attached oxygen mask, for any duty requiring movement from their usual station; and
- (2) during any time the aircraft is being operated between flight level 350 and 410, ensure—
  - (i) one pilot at a pilot station is wearing and using an oxygen mask that either supplies supplemental oxygen at all times or automatically supplies supplemental oxygen whenever the cabin pressure altitude exceeds 13 000 feet AMSL; or
  - (ii) two pilots are at their pilot stations and each pilot has access to an oxygen mask that can be placed on the face and supplying oxygen within 5 seconds; and
- (3) during any time the aircraft is being operated above flight level 410, one pilot at a pilot station is wearing and using a demand oxygen mask at all times.

(c) Each pilot-in-command operating a pressurised aircraft following pressurisation failure shall, unless the aircraft can descend to 14 000 feet AMSL or below within 4 minutes, require each passenger to use supplemental oxygen during any time that the cabin pressure is above 14 000 feet AMSL.

**91.211 Passenger briefing**

(a) Each person operating an aircraft carrying passengers shall ensure that each passenger has been briefed on—

- (1) the conditions under which smoking is permitted; and
- (2) the requirements specified in 91.121 and 91.207; and
- (3) the location and means for opening the passenger entry doors and emergency exits; and
- (4) when required to be carried by this Part—
  - (i) the location of survival and emergency equipment for passenger use; and
  - (ii) the use of flotation equipment required under 91.525 for a flight over water; and
  - (iii) the normal and emergency use of oxygen equipment installed in the aircraft for passenger use; and
- (5) procedures in the case of an emergency landing; and
- (6) the use of portable electronic devices in accordance with 91.7.

(b) The briefing required under paragraph (a)—

- (1) shall be given by the pilot-in-command, a member of the crew, a person nominated by the operator, or by a recorded presentation; and
- (2) shall, for flights above FL 250, include a demonstration on the use of supplemental oxygen equipment; and
- (3) shall include a demonstration on the use of lifejackets; and
- (4) shall include a statement, as appropriate, that Civil Aviation Rules require passenger compliance with the lighted passenger sign or crew member instructions, or both, with regard to these items; and
- (5) may be supplemented by printed cards for the use of each passenger containing—
  - (i) diagrams of, and methods of operating the emergency exits; and
  - (ii) other instructions necessary for the use of emergency equipment for use by passengers; and

(6) is not required if the pilot-in-command determines that the passengers are familiar with the contents of the briefing.

(c) Where printed cards are used in accordance with paragraph (b)(5), the operator shall place them in convenient locations on the aircraft for the use of each passenger and ensure that they contain information that is pertinent only to the type and model of aircraft on which they are carried.

### **91.213 Carry-on baggage**

A person operating an aircraft, other than a balloon, shall not permit a passenger to stow baggage aboard that aircraft during take-off or landing except—

- (1) in a baggage locker; or
- (2) under a passenger seat in such a way that it will not—
  - (i) slide forward under crash impact; or
  - (ii) hinder evacuation of the aircraft in the event of an emergency.

### **91.215 Carriage of cargo**

(a) An operator shall not permit cargo to be carried in an aircraft unless it is—

- (1) carried on a seat, in a cargo rack or bin, or in a cargo or baggage compartment; and
- (2) properly secured by a safety belt or other restraining device having enough strength to ensure that the cargo does not shift under all normally anticipated flight and ground conditions; and
- (3) packaged and covered to avoid injury to passengers.

(b) Each operator who carries cargo in an aircraft shall ensure that the cargo—

- (1) does not exceed the load limitation for the seats, berths, or floor structure as prescribed by the aircraft flight manual, or by placards; and
- (2) is not located in a position that restricts the access to or use of any required emergency exit, or the use of the aisle between the crew and the passenger compartments.

### **91.217 Preflight action**

Each pilot-in-command shall, before beginning a flight, obtain and become familiar with all information concerning that flight including the following—

- (1) where practicable, the current meteorological information; and

- (2) the fuel requirements; and
- (3) the alternatives available if the planned flight cannot be completed; and
- (4) any known or likely traffic delays that have been notified by ATS; and
- (5) the status of the communication and navigation facilities intended to be used; and
- (6) the current conditions of the aerodrome and runway lengths at aerodromes of intended use.

**91.219 *Familiarity with operating limitations and emergency equipment***

Each pilot of an aircraft shall, before beginning a flight, be familiar with—

- (1) the aircraft flight manual for that aircraft; and
- (2) any placards, listings, instrument markings, or any combination thereof, containing any operating limitation prescribed for that aircraft by the manufacturer or the Director; and
- (3) the emergency equipment installed on the aircraft; and
- (4) which crew member is assigned to operate the emergency equipment; and
- (5) the procedures to be followed for the use of the emergency equipment in an emergency situation.

**91.221 *Flying equipment and operating information***

(a) Each pilot-in-command of an aircraft shall ensure that the following equipment and information, in current and appropriate form, is accessible to each pilot crew member of the aircraft—

- (1) means of indicating the time; and
- (2) appropriate aeronautical charts; and
- (3) for IFR operations, each appropriate navigational en route, terminal area, approach, and instrument approach and departure charts; and
- (4) for night operations, an electric torch for each flight crew member.

(b) In addition to paragraph (a), each pilot-in-command of an aircraft in excess of 5700 kg MCTOW, or having a certificated seating capacity of 10 passenger seats or more, shall require flight crew members to use a cockpit



checklist covering the normal and emergency procedures for the operation of the aircraft in accordance with the aircraft flight manual.

**91.223 *Operating on and in the vicinity of an aerodrome***

(a) Except as required in paragraph (b), each pilot of an aeroplane operating on or in the vicinity of an aerodrome shall—

- (1) observe other aerodrome traffic for the purpose of avoiding collision; and
- (2) unless otherwise authorised or instructed by ATC, conform with or avoid the aerodrome traffic circuit formed by other aircraft; and
- (3) except as provided in paragraph (c), at aerodromes promulgated in the NZAIP, perform a left hand aerodrome traffic circuit when approaching for a landing and after take-off unless—
  - (i) otherwise authorised or instructed by ATC; or
  - (ii) a right hand aerodrome traffic circuit has been prescribed under Part 93; or
  - (iii) a turn in the opposite direction for an IFR procedure has been prescribed under Part 97; and
- (4) unless otherwise authorised or instructed by ATC, comply with any special aerodrome traffic rules prescribed under Part 93.

(b) Paragraphs (a)(3) and (4) shall not apply to the pilot-in-command of an aircraft operating at an aviation event in accordance with 91.703.

(c) Each pilot-in-command of an aircraft performing agricultural aircraft operations may, when approaching for a landing or after take-off at an aerodrome promulgated in the NZAIP without an aerodrome control service in operation, make turns in any direction provided that—

- (1) an aerodrome ground signal depicted in Figure 1 is displayed alongside the runway in use; and
- (2) there is no conflict with other aerodrome traffic.

(d) Each pilot-in-command of a helicopter shall comply with paragraph (a) or avoid the aerodrome traffic circuit in use by aeroplanes.

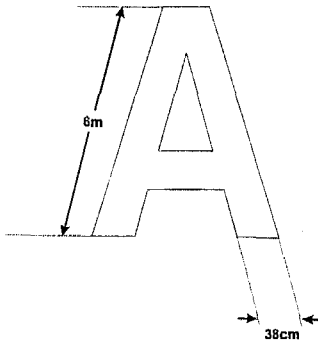


Figure 1. Agricultural operations aerodrome ground signal

*[Until Part 97 comes into force, IFR procedures are prescribed under under Part 19]*

### **91.225 Operations at aerodromes with air traffic services**

(a) Each pilot-in-command of an aircraft on or in the vicinity of an aerodrome with an aerodrome control service in operation shall—

- (1) unless otherwise authorised by ATC, maintain two-way radio communications with that service on the prescribed frequency; and
- (2) obtain a clearance from that service prior to—
  - (i) taxiing on any portion of the manoeuvring area; or
  - (ii) landing at or taking-off from any runway or heliport at that aerodrome; or
  - (iii) entering a control zone.

(b) Each pilot-in-command of an aircraft on or in the vicinity of an aerodrome with an aerodrome flight information service in operation shall—

- (1) if the aircraft is equipped with radio, maintain two-way radio communications with that service on the prescribed frequency; and
- (2) advise that service of the intended use of that aerodrome prior to—
  - (i) taxiing on any portion of the manoeuvring area; or
  - (ii) landing at or taking-off from any runway or heliport at that aerodrome; or
  - (iii) entering the aerodrome traffic circuit at that aerodrome.

(c) Each pilot-in-command of an aircraft that is not equipped with radio and that is on or in the vicinity of an aerodrome with an aerodrome flight information service in operation shall advise that service of the intended use of the aerodrome prior to—

- (1) taxiing on to any portion of the manoeuvring area; and
- (2) entering the aerodrome traffic circuit at that aerodrome.

**91.227 Operating near other aircraft**

No pilot shall operate an aircraft—

- (1) so close to another aircraft as to create a collision hazard; or
- (2) in formation flight except by prior arrangement with the pilot-in-command of each aircraft in the formation; or
- (3) other than an aircraft performing a parachute-drop operation, in formation flight while carrying passengers for hire or reward.

**91.229 Right-of-way rules**

(a) **Right-of-Way.** Each pilot of an aircraft—

- (1) shall, when weather conditions permit, regardless of whether the flight is performed under IFR or under VFR, maintain a visual lookout so as to see and avoid other aircraft; and
- (2) that has the right of way, shall maintain heading and speed, but shall not be relieved from the responsibility of taking such action, including collision-avoidance manoeuvres based on resolution advisories provided by TCAS equipment, that will best avert collision; and
- (3) that is obliged to give way to another aircraft, shall avoid passing over, under, or in front of the other aircraft, unless passing well clear of the aircraft, taking into account the effect of wake turbulence.

(b) **Approaching Head-On.** Each pilot of an aircraft shall, when approaching another aircraft head-on, or nearly so, alter heading to the right.

(c) **Aircraft Converging.** Each pilot of an aircraft that is converging at approximately the same altitude with another aircraft that is to its right, shall give way, except that the pilot operating—

- (1) a power-driven heavier-than-air aircraft shall give way to airships, gliders, and balloons; and
- (2) an airship shall give way to gliders and balloons; and

- (3) a glider shall give way to balloons; and
  - (4) a power-driven aircraft shall give way to aircraft that are towing other aircraft or objects; and
  - (5) all aircraft shall give way to parachutes.
- (d) **Overtaking Aircraft.** Each pilot of an aircraft that is overtaking another aircraft shall, if a turn is necessary to avoid that aircraft, alter heading to the right, until it is entirely past and clear of the other aircraft.
- (e) For the purpose of paragraph (d), an overtaking aircraft is an aircraft that approaches another from the rear on a line forming less than 70 degrees with the plane of symmetry of the latter.
- (f) **Landing aircraft.** Each pilot of an aircraft in flight or on the surface shall—
- (1) give way to any aircraft that is on final approach to land or is landing; and
  - (2) when the aircraft is one of two or more heavier-than-air aircraft approaching an aerodrome for the purpose of landing, give way to the aircraft at the lower altitude; and
  - (3) not take advantage of right-of-way under subparagraph (2) to pass in front of another aircraft, which is on final approach to land, or overtake that aircraft.
- (g) **Taking-Off.** A pilot of an aircraft shall not take-off if there is an apparent risk of collision with another aircraft.
- (h) **Taxiing.** Each pilot of an aircraft taxiing on the manoeuvring area of an aerodrome shall—
- (1) give way to aircraft landing, taking-off, or about to take-off; and
  - (2) when two aircraft are approaching head on, or nearly so, stop where practicable, alter course to the right so as to keep well clear of the other aircraft; and
  - (3) when two aircraft are on a converging course, give way to the other aircraft on the pilot's right; and
  - (4) when overtaking another aircraft, give way and keep well clear of the aircraft being overtaken.
- (i) **Aircraft in Distress.** Each pilot of an aircraft shall give way to any aircraft that is in distress.

**91.231 Right-of-way rules – water operations**

Each pilot of an aircraft on the water shall comply with the requirements of the International Regulations for Preventing Collisions at Sea.

**91.233 Aircraft lights**

- (a) A pilot of an aircraft shall not—
- (1) operate an aircraft at night unless it has lighted position lights; or
  - (2) moor or move an aircraft at night on a water aerodrome unless the aircraft complies with the lighting requirement of the International Regulations for Preventing Collisions at Sea; or
  - (3) operate an aircraft at night that is required by Subpart F to be equipped with an anticollision light system unless the system is operating.
- (b) No person shall park or move an aircraft at night on a manoeuvring area of an aerodrome in use for aircraft operations, unless the aircraft—
- (i) is clearly illuminated; or
  - (ii) has lighted position lights; or
  - (iii) is in an area that is marked by obstruction lights; or
- (c) Notwithstanding paragraph (a)(3), a pilot of an aircraft is not required to operate the anticollision light system if the pilot determines that, because of operating conditions, it would be in the best interest of safety to turn the system off.

**91.235 Dropping of objects**

A pilot of an aircraft shall not allow any object to be dropped from that aircraft in flight unless the pilot has taken reasonable precautions to ensure the dropping of the object does not endanger persons or property.

**91.237 Aircraft speed**

- (a) A pilot shall not operate an aircraft at an indicated speed of more than 250 kts below an altitude of 10 000 feet AMSL when—
- (1) that aircraft is operated IFR in Class D, E, or G airspace; or
  - (2) that aircraft is operated VFR in Class C, D, E, or G airspace.
- (b) Paragraph (a) shall not apply when—

- (1) the minimum safe speed of the aircraft prescribed in the flight manual is more than 250 kts and the aircraft is operated at that minimum safe speed; or
- (2) the aircraft is being operated at an aviation event in accordance with 91.703.

**91.239 Altimeter settings**

(a) Each pilot of an aircraft shall maintain the cruising altitude or flight level of that aircraft by reference to an altimeter that is set—

- (1) when operating at or above flight level 130, to 1013.2 hPa; and
- (2) when operating at or below 11 000 feet, to the appropriate area or aerodrome QNH altimeter setting; and
- (3) when operating between 11 000 feet and flight level 130, as authorised by ATC.

(b) Each pilot of an aircraft shall—

- (1) when ascending above 11 000 feet, set the altimeter to 1013.2 hPa; and
- (2) when descending through flight level 130, set the altimeter to the appropriate area or aerodrome QNH.

**91.241 Compliance with ATC clearances and instructions**

(a) A pilot of an aircraft shall—

- (1) comply with any ATC clearance or instruction; and
- (2) when a deviation from an ATC clearance or instruction is required for the safe operation of the aircraft, notify ATC of that deviation as soon as possible.

(b) A pilot of an aircraft shall not comply with an ATC clearance or instruction if such compliance is a violation of any rule in this Part.

**91.243 ATC light signals**

Each pilot of an aircraft shall comply with the clearance or instruction specified for ATC light signals in Table 1.

Table 1. ATC light signals.

Light Signal	Aircraft in Flight	Aircraft on the Ground
Steady green	Cleared to land	Cleared for take-off
Steady red	Give way to other aircraft and continue circling	Stop
Series of green flashes	Return for landing (clearance to land and to taxi will be given in due course)	Cleared to taxi
Series of red flashes	Aerodrome unsafe, do not land	Taxi clear of landing area in use
Flashing white	Land at this aerodrome and proceed to apron	Return to starting point on aerodrome
Alternating red and green flashes	Danger, be on the alert	Danger, be on the alert

#### **91.245 Operations in classified and designated airspace**

- (a) Each pilot-in-command of an aircraft shall obtain an ATC clearance prior to entering airspace designated under Part 71 as—
- (1) Class A, C, or D; or
  - (2) Class E airspace, where the operation is performed under IFR, or under VFR at night.
- (b) Each pilot-in-command of an aircraft operating in Class A airspace shall—
- (1) perform the operation under IFR; and
  - (2) unless otherwise authorised by ATC, maintain two-way communications with ATC on the prescribed frequency.
- (c) Each pilot-in-command of an aircraft operating in Class C or D airspace shall, unless otherwise authorised by ATC, maintain two-way radio communications with ATC on the prescribed frequency.
- (d) Each pilot-in-command of an aircraft operating in Class E airspace under IFR, or under VFR at night, shall, unless otherwise authorised by ATC, maintain two-way radio communications with ATC on the prescribed frequency.

(e) Except for the purpose of taking-off from, or landing at, an aerodrome within an aerodrome traffic zone, a pilot-in-command of an aircraft shall not enter airspace designated as an Aerodrome Traffic Zone.

*[Until Part 71 comes into force, airspace is classified and designated under Part 19]*

**91.247 Use of SSR transponder and altitude reporting equipment**

(a) Except as provided in paragraph (d), each pilot-in-command operating an aircraft in transponder-mandatory airspace designated under Part 71 shall, unless otherwise authorised or instructed by ATC—

- (1) operate the transponder, including Mode C or Mode S equipment if equipped; and
- (2) except where operating Mode S equipment, set the transponder—
  - (i) to the appropriate code assigned by ATC for the flight; or
  - (ii) if not assigned a code by ATC, set the transponder in accordance with Table 2; or
  - (iii) if an inflight emergency, loss of radio communication, or an act of unlawful interference occurs, set the transponder in accordance with Table 3.

(b) No person shall operate an aircraft with Mode S transponder equipment installed unless the Director has assigned that aircraft a unique Mode S address code.

(c) Each pilot-in-command requesting an ATC authorisation to operate without a transponder shall make the request to the ATC facility having jurisdiction over the concerned airspace within the following time periods:

- (1) for operation of aircraft with an operating transponder but without automatic pressure-altitude reporting equipment having a Mode C capability, the request may be made at any time;
- (2) for operation of an aircraft with an inoperative transponder to the flight planned destination aerodrome, including any intermediate stops, or to proceed to a place where suitable repairs can be made or both, the request may be made at any time;
- (3) for operation of an aircraft that is not equipped with a transponder, the request shall be made at least 30 minutes before the start of the proposed operation.

(d) For formation flight, only one of the aircraft is required to operate a transponder in accordance with paragraph (a).



Table 2. Airspace SSR Codes

Flight rules	Type of aircraft	SSR Code
IFR	All	2000
VFR	Civil aeroplanes other than gliders	1200
VFR	Civil helicopters	1277
VFR	Gliders or balloons	1300
VFR	Aircraft in designated training areas	1400
VFR	Defence aeroplanes	6000
VFR	Defence helicopters	6077

Table 3. Emergency SSR Codes

Occurrence	SSR Code
Unlawful interference	7500
Loss of radio communication	7600
In flight emergency when no code has been allocated by ATC	7700

*[Until Part 71 comes into force, transponder mandatory airspace is designated under Part 19]*

### **91.249 Aircraft callsigns**

- (a) Each pilot-in-command operating a New Zealand registered aircraft shall use the following radiotelephony callsigns—
- (1) the approved telephony designator of the aircraft operating agency followed by the flight identification; or
  - (2) the approved telephony designator of the aircraft operating agency followed by the last three letters of the aircraft registration marking; or
  - (3) the last three letters of the aircraft registration marking.
- (b) Notwithstanding (a)(2), the pilot-in-command may, after establishing two-way communication with an appropriate ATS unit, use an abbreviated callsign consisting of the last three letters of the aircraft registration marking.

(c) The callsigns prescribed in paragraphs (a)(1) and (2) shall only be approved for the use of—

- (1) the holder of a certificate issued under Part 119 or Part 129 conducting—
  - (i) a regular air transport service; or
  - (ii) a search and rescue flight; or
  - (iii) a medical transfer or medical emergency flight; and
- (2) aircraft being flown on a police operation that is authorised by the Commissioner of Police.

(d) Each applicant for the approval of a telephony designator shall submit to the Director in writing the name of the aircraft operating agency and a payment of the appropriate application fee prescribed by regulations made under the Act.

## Subpart D – Visual Flight Rules

### 91.301 *VFR meteorological minima*

(a) Except as provided in 91.129(a)(2)(i), 91.303, and paragraph (c), a pilot-in-command shall not operate an aircraft under VFR—

- (1) when the flight visibility is less than that prescribed for the corresponding class of airspace in Table 4; or
- (2) at a distance from clouds that is less than that prescribed for the corresponding class of airspace in Table 4.

(b) Except as provided in 91.303, a pilot-in-command shall not take-off or land an aircraft, or enter the aerodrome traffic circuit, or fly in the vicinity of an aerodrome, under VFR when the flight visibility, or the cloud ceiling, is less than—

- (1) at aerodromes with an aerodrome control service in operation, that prescribed in Table 5; and
- (2) at aerodromes without aerodrome control service in operation, that prescribed in Table 6.

(c) Each pilot-in-command of—

- (1) a helicopter may operate in Class G airspace with a visibility of less than 5 km if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any obstructions in order to avoid collisions; and

- (2) an aircraft performing agricultural aircraft operations, may operate in Class G airspace with a flight visibility of less than 5 km but not less than 1500 m; and
- (3) an aircraft performing flight instruction may operate within a designated low flying area with a flight visibility of less than 5 km but not less than 1500 m.

Table 4. Airspace VFR meteorological minima

Class of airspace	C, D, and E	G
Distance from cloud	1 nm horizontally 1000 feet vertically	Above 3000 feet AMSL or 1000 feet above terrain whichever is the higher 1 nm horizontally 1000 feet vertically  At or below 3000 feet or 1000 feet above the terrain whichever is the higher clear of clouds and in sight of the surface
Flight visibility	8 km at and above 10 000 feet AMSL  5 km below 10 000 feet AMSL	5 km

Table 5. VFR minima at aerodromes with aerodrome control service in operation.

		Ceiling	Visibility
Flight outside the aerodrome traffic circuit	Day	1500 feet	8 km
	Night	3000 feet	16 km
Flight within the aerodrome traffic circuit	Day and Night	1500 feet	8 km

Table 6. VFR minima at aerodromes without aerodrome control service in operation.

		Ceiling	Visibility
All aircraft	Day	600 feet	1500 m
All aircraft	Night	1500 feet	8 km

**91.303 Special VFR weather minima**

A pilot-in-command of an aircraft may perform a VFR operation in weather conditions below those prescribed in 91.301 within a control zone—

- (1) in compliance with an ATC clearance and ATC instructions; and
- (2) by day only; and
- (3) clear of clouds; and
- (4) with ceiling and visibility of—
  - (i) at least 600 feet and at least 1500 m respectively; or
  - (ii) for helicopters, if the helicopter is operated at a speed that will give adequate opportunity to observe other traffic or any obstructions in order to avoid collisions, less than 600 feet and less than 1500 m; and
- (5) in an aircraft equipped with two-way radio capable of communicating with ATC on the appropriate frequency.

**91.305 Fuel requirements for flight under VFR**

(a) A pilot-in-command of an aeroplane shall not begin a flight under VFR unless, in the forecast weather conditions, the aeroplane has enough fuel to fly to the first point of intended landing at the planned normal cruising speed and to fly—

- (1) during the day, after that for at least 30 minutes; or
- (2) at night, after that for at least 45 minutes.

(b) A pilot-in-command of a helicopter shall not begin a flight under VFR unless, in the forecast weather conditions, the helicopter has enough fuel to fly to the first point of intended landing at the planned cruising speed, and to fly—

- (1) after that for at least 20 minutes; or

- (2) for flights of less than 20 minutes duration, after that for a period equal to the anticipated flight time.

**91.307 VFR flight plan**

(a) Each pilot-in-command of an aircraft shall submit a flight plan to an appropriate ATS unit prior to the start of each flight under VFR—

- (1) that proceeds more than 50 nm from shore; or
- (2) if the pilot-in-command requires an alerting service.

(b) The VFR flight plan required by paragraph (a) shall include the following information—

- (1) the identification of the aircraft to be used; and
- (2) the type of aircraft to be used; and
- (3) the proposed time of departure; and
- (4) the aerodrome of departure, the route, the aerodromes of intended landing, the true airspeed, the estimated elapsed times (EET) for each route segment, and the time on the ground at each intermediate aerodrome; and
- (5) the total EET for each stage of flight; and
- (6) fuel endurance; and
- (7) the radio frequencies of the communication equipment in the aircraft; and
- (8) the navigation and approach aids carried in the aircraft; and
- (9) the total number of persons in the aircraft; and
- (10) the name of the pilot-in-command; and
- (11) the identity of the operator; and
- (12) the emergency and survival equipment carried on board the aircraft; and
- (13) any information requested by ATS which they believe is necessary for their purposes.

(c) If a VFR flight plan required by paragraph (a) has been submitted, the pilot-in-command shall advise an ATS unit, as soon as possible, of any delay exceeding 30 minutes in beginning the flight or departing from any aerodrome of intended landing.

(d) Each pilot-in-command who submits a VFR flight plan required by paragraph (a) shall terminate the flight plan by advising an appropriate ATS unit of the completion of the flight as soon as practicable after landing.

**91.309 Position reports**

Each pilot-in-command of an aircraft on a VFR flight shall, when operating in controlled airspace, report the position of the aircraft to ATC at the times or reporting points required by ATC.

**91.311 Minimum heights for VFR flights**

(a) Except as provided in paragraphs (b), (c), and (d), no pilot-in-command of an aircraft shall operate an aircraft under VFR—

- (1) at a height less than that required to execute an emergency landing, without hazard to persons or property on the surface, in the event of engine failure; and
- (2) over any congested area of a city, town, or settlement, or over any open air assembly of persons, at a height of less than 1000 feet above the highest obstacle within a horizontal radius from the aircraft of 2000 feet; and
- (3) over any other area, at a height of less than 500 feet above the surface.

(b) Paragraph (a) shall not apply to a pilot-in-command of an aircraft—

- (1) conducting a take-off, or landing; or
- (2) conducting a hover in ground effect in a helicopter; or
- (3) conducting a balked landing or discontinued approach.

(c) Paragraph (a)(3) shall not apply to a pilot-in-command of an aircraft if the *bona fide* purpose of the flight requires the aircraft to be flown at a lower height and—

- (1) the flight is performed without hazard to persons or property on the surface; and
- (2) only persons performing an essential function associated with the flight are carried; and
- (3) the aircraft remains outside a horizontal radius of 500 feet of any person, vessel, vehicle, or structure that is not associated with the operation.

(d) Paragraph (a)(3) shall not apply to a pilot-in-command—

- (1) who is the holder of, or authorised by, a current instructor rating issued under Part 61 and who is conducting flight training or practice flights consisting of—
  - (i) simulated engine failure after take-off commencing below 1000 feet above the surface; or
  - (ii) simulated engine failure commencing above 1000 feet above the surface providing that descent below 500 feet above the surface is conducted within a low flying area in accordance with 91.131; or
  - (iii) balked landing or discontinued approach to a landing; or
- (2) who is the holder of a current instrument rating issued under Part 61 and who is conducting IFR training, testing, or practice flights under VFR, providing the pilot-in-command conducts the flight in accordance with 91.413, 91.423 and 91.425; or
- (3) operating an aircraft within a low flying area in accordance with 91.131; or
- (4) operating an aircraft at an aviation event in accordance with 91.703.

**91.313 VFR cruising altitude and flight level**

(a) Each pilot-in-command of an aircraft operating within the New Zealand FIR under VFR in level cruising flight at more than 3000 feet above the surface shall, unless otherwise authorised by ATC, maintain the following altitude or flight levels—

- (1) when operating at or below 11 000 feet AMSL and—
  - (i) on a magnetic track of 270° clockwise to 089°, any odd thousand foot altitude AMSL plus 500 feet; or
  - (ii) on a magnetic track of 090° clockwise to 269°, any even thousand foot altitude AMSL plus 500 feet; and
- (2) when operating at or above flight level 130, up to and including flight level 290, and—
  - (i) on a magnetic track of 270° clockwise to 089°, any odd flight level plus 500 feet beginning at and including flight level 135; or
  - (ii) on a magnetic track of 090° clockwise to 269°, any even flight level plus 500 feet beginning at and including flight level 145; and

- (3) when operating above flight level 290, and—
  - (i) on a magnetic track of 270° clockwise to 089°, any even flight level, at 4000 foot intervals beginning at and including flight level 300; or
  - (ii) on a magnetic track of 090° clockwise to 269°, any even flight level at 4000 foot intervals beginning at and including flight level 320.
- (b) A pilot-in-command of an aircraft operating within the New Zealand FIR under VFR shall not maintain level cruising flight—
  - (1) at any level between 11 000 feet AMSL and flight level 130 unless otherwise authorised by ATC; and
  - (2) at any flight level below flight level 140 when an area QNH is 980 hPa or less.

#### **91.315 *Operating in snow and ice conditions***

No pilot-in-command of an aircraft shall perform a take-off under VFR in an aircraft that has snow, ice, or frost, adhering to the wings, stabilisers, or control surfaces.

## **Subpart E – Instrument Flight Rules**

#### **91.401 *Minimum flight crew***

A pilot-in-command shall not operate an aircraft under IFR without another pilot, unless—

- (1) the aircraft flight manual authorises operation of the aircraft with one pilot; and
- (2) the aircraft is equipped with communication equipment that can be operated by the pilot without releasing the aircraft flight controls.

#### **91.403 *Fuel requirements for flights under IFR***

A pilot-in-command shall not operate an aircraft under IFR unless the aircraft carries sufficient fuel, taking into account weather reports and forecasts and weather conditions, to complete the flight to the aerodrome of intended landing and—

- (1) when an alternate aerodrome is not required—



- (i) for non-turbine-powered aeroplanes, fly after that for 45 minutes at holding speed at a height of 1500 feet above the aerodrome; or
  - (ii) for turbine-powered aeroplanes and helicopters, fly after that for 30 minutes at holding speed at a height of 1500 feet above the aerodrome.
- (2) when an alternate is required by 91.405, fly from the aerodrome of intended landing to the alternate aerodrome and—
- (i) for non-turbine-powered aeroplanes, fly after that for 45 minutes at holding speed at a height of 1500 feet above the aerodrome; or
  - (ii) for turbine-powered aeroplanes and helicopters, fly after that for 30 minutes at holding speed at a height of 1500 feet above the aerodrome.

**91.405 IFR alternate aerodrome requirement**

(a) Each pilot-in-command of an aircraft operating under IFR shall make provision for at least one alternate aerodrome unless—

- (1) the aerodrome of intended landing has a standard instrument approach procedure prescribed under Part 97; and
- (2) for at least 1 hour before and 1 hour after the estimated time of arrival at the aerodrome of intended landing, the weather reports, or weather forecasts, or any combination of the two, indicate at the time of submitting the flight plan that—
  - (i) the ceiling at the aerodrome will be at least 1000 feet above the minima prescribed under Part 97 for the instrument procedure likely to be used; and
  - (ii) visibility will be at least 5 km.

(b) A pilot-in-command of an aircraft required to make provision for an alternate aerodrome under paragraph (a) shall not list any aerodrome as an alternate on the IFR flight plan unless the weather forecasts at the time of submitting the flight plan indicate that, at the estimated time of arrival at the alternate aerodrome, the ceiling and visibility at that aerodrome will be at or above the following weather minima—

- (1) if an instrument approach procedure with alternate minima has been prescribed under Part 97 for the aerodrome, the specified alternate aerodrome minima for that instrument approach procedure; or

- (2) if an instrument approach procedure without alternate minima has been prescribed under Part 97, the following minima—
    - (i) for a precision approach procedure, ceiling of 600 feet and visibility of 3000 metres; and
    - (ii) for a non-precision approach procedure, ceiling of 800 feet or 200 feet above MDA, whichever is the higher, and visibility of 4000 metres or 1500 metres more than the prescribed minima, whichever is the greater; and
  - (3) if no instrument approach procedure has been prescribed under Part 97 for the alternate aerodrome, the ceiling and visibility minima prescribed in Subpart D for VFR operation for descent below the minimum altitude for IFR flight prescribed under 91.423.
- (c) A pilot-in-command of an aircraft required to make provision for an alternate aerodrome under paragraph (a) shall not list any aerodrome as an alternate aerodrome in the IFR flight plan unless that alternate aerodrome is equipped with a secondary electric power supply for—
- (1) the electronic navigation aids to be used; and
  - (2) for night operations, the aerodrome night lighting.

*[Until Part 97 comes into force, instrument approach procedures are prescribed under Part 19]*

#### **91.407 IFR flight plan**

- (a) Each pilot-in-command of an aircraft shall—
- (1) submit a flight plan to an appropriate ATS unit prior to each flight under IFR; and
  - (2) unless otherwise authorised by ATS, submit the flight plan at least 30 minutes prior to the beginning of the flight; and
  - (3) unless otherwise authorised by ATS, include the following information in the flight plan—
    - (i) the identification of the aircraft to be used; and
    - (ii) the type of aircraft to be used, and its wake turbulence category; and
    - (iii) the radio communications equipment, and the navigation and approach aid equipment in the aircraft to be used; and
    - (iv) the departure aerodrome and time of departure; and

- (v) the cruising speed, altitude, and route; and
  - (vi) the aerodrome of destination, total EET, and any alternate aerodrome required by 91.405; and
  - (vii) any other information the pilot-in-command or ATS believes is necessary for ATS purposes; and
  - (viii) the fuel endurance; and
  - (ix) total number of persons carried in the aircraft; and
  - (x) emergency and survival equipment carried in the aircraft; and
- (4) advise an ATS unit, as soon as possible, of any delay exceeding 30 minutes in beginning the flight or departing from any aerodrome of intended landing; and
  - (5) terminate the flight plan as soon as practicable on completion of any flight at an aerodrome without ATS.

(b) For the purpose of this rule, aircraft wake turbulence categories are defined in ICAO Doc 8643/24.

#### **91.409 Adherence to flight plan**

(a) Each pilot-in-command of an aircraft shall, when an IFR flight plan has been submitted—

- (1) adhere to the current flight plan submitted, or the applicable portion of a current flight plan submitted, unless—
  - (i) a request for change has been made and clearance obtained from an appropriate ATC unit; or
  - (ii) an emergency situation arises which necessitates immediate action to deviate from the flight plan; and

(b) Each pilot-in-command of an aircraft operating under IFR shall, where practicable—

- (i) when on a route prescribed under Part 95, operate along the defined centre line of that route; or
- (ii) when on any other route, operate directly between the navigation facilities and points defining the route; or
- (iii) when on an area navigation route or parallel offset route, operate along the centreline of the route specified by ATS.

(c) If a deviation from a flight plan is made under paragraph (a)(1)(ii), the pilot-in-command shall notify an appropriate ATS unit as soon as practicable.

*[Until Part 95 comes into force, IFR routes are designated under Part 19]*

#### **91.411 Inadvertent change to flight plan**

Each pilot-in-command of an aircraft operating under IFR, shall in the event of an inadvertent departure from the current flight plan—

- (1) advise an appropriate ATS unit of—
  - (i) any deviation from track; and
  - (ii) any variation of 5% or more of the true airspeed or any variation of  $\pm 0.01$  or more of the Mach number given in the flight plan; and
  - (iii) a revised ETA when the estimated ETA to the next reporting point notified to the ATS unit is found to be in error by more than two minutes; and
- (2) regain track as soon as practicable.

#### **91.413 Take-off and landing under IFR**

(a) **Instrument approaches to aerodromes.** When an instrument approach procedure to an aerodrome is necessary, each pilot-in-command of an aircraft operating under IFR shall use a standard instrument approach procedure prescribed for the aerodrome under Part 97.

(b) **Authorised DA, DH, or MDA.** When the instrument approach procedure required by paragraph (a) provides for and requires the use of a DA, DH, or MDA, each pilot-in-command shall use the DA, DH, or MDA that is the highest of the following—

- (1) the DA, DH, or MDA prescribed by the instrument approach procedure; or
- (2) the DA, DH, or MDA prescribed for the pilot-in-command; or
- (3) the DA, DH, or MDA for which the aircraft is equipped.

(c) **Operation below DA, DH, or MDA.** Where a DA, DH, or MDA is applicable, no pilot-in-command shall operate an aircraft at any aerodrome below the MDA, or continue an instrument approach procedure below the DA or DH prescribed in paragraph (b), unless—

- (1) the aircraft is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal manoeuvres that will allow touchdown to

occur within the touchdown zone of the runway of intended landing; and

- (2) the flight visibility is not less than the visibility prescribed under Part 97 for the instrument approach procedure being used; and
  - (3) except for a Category II or Category III precision approach procedure prescribed under Part 97 for that aerodrome that includes any necessary visual reference requirements, at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot—
    - (i) the approach lighting system; or
    - (ii) the threshold markings; or
    - (iii) the threshold lights; or
    - (iv) the runway-end identification lights; or
    - (v) the visual approach slope indicator; or
    - (vi) the touch down zone or touchdown zone markings; or
    - (vii) the touchdown zone lights; or
    - (viii) the runway or runway markings; or
    - (ix) the runway lights.
- (d) **Landing.** A pilot-in-command shall not land an aircraft when the flight visibility is less than the visibility prescribed under Part 97 for the instrument approach procedure used.
- (e) **Missed approach procedures.** Each pilot-in-command shall immediately execute the missed approach procedure prescribed under Part 97 if—
- (1) the requirements of paragraph (c) are not met at either of the following times:
    - (i) when the aircraft is being operated below MDA; or
    - (ii) upon arrival at the missed approach point, including a DA or DH where a DA or DH is specified and its use is required, and any time after that until touchdown; or
  - (2) an identifiable part of the aerodrome is not distinctly visible to the pilot during a circling manoeuvre at or above MDA, unless the inability to see an identifiable part of the aerodrome results only from normal manoeuvring of the aircraft during approach.

(f) **Take-off Minima.** Except as provided in paragraph (g), a pilot-in-command of an aircraft shall not take-off from an aerodrome under IFR unless weather conditions are—

- (1) at or above the weather minima for IFR take-off prescribed for that aerodrome under Part 97; or
- (2) if weather minima for IFR take-off are not prescribed under Part 97 for a particular aerodrome, a ceiling of at least 300 feet and above 1500 m visibility.

(g) **Reduced Take-off Minima.** A pilot-in-command of an aircraft may take-off under IFR at an aerodrome at a take-off minima of zero cloud ceiling and visibility at or above 800 m provided that—

- (1) the runway to be used has centre-line marking or centre-line lighting; and
- (2) the take-off weather visibility is confirmed by the pilot-in-command by observation of the runway centre-line marking or centre-line lighting; and
- (3) Part 97 authorises reduced take-off minima on the runway to be used; and
- (4) any obstacles in the take-off flight path are taken into account; and
- (5) if the aircraft is a two-engine propeller-driven aeroplane, the aircraft is equipped with an operative auto-feather or auto-coarse system.

*[Until Part 97 comes into force, instrument approach procedures are prescribed under Part 19]*

#### **91.415 Category II and III precision approach procedures**

(a) No person shall operate an aircraft performing a Category II or III precision approach procedure unless—

- (1) each flight crew member has adequate knowledge of, and familiarity with, the aircraft and the procedures to be used; and
- (2) the instrument panel in front of the pilot who is controlling the aircraft has appropriate instrumentation for the type of flight-control guidance system that is being used.

(b) Unless otherwise authorised by the Director, no person may perform a Category II or III precision approach procedure unless each ground component required for that operation, and the related airborne equipment, is installed and operating.

(c) **Authorised DH.** For the purpose of this rule, when the precision approach procedure being used provides for and requires the use of DH, the authorised DH shall be the highest of the following—

- (1) the DH prescribed by the instrument approach procedure; or
- (2) the DH prescribed for the pilot-in-command; or
- (3) the DH for which the aircraft is equipped.

(d) Unless otherwise authorised by the Director, a pilot performing a Category II or III precision approach procedure that provides and requires use of a DH shall not continue the approach below the authorised DH unless the following conditions are met—

- (1) the aircraft is in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal manoeuvres, and that descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing; and
- (2) at least one of the following visual references for the intended runway is distinctly visible and identifiable—
  - (i) the runway threshold; or
  - (ii) the runway threshold markings; or
  - (iii) the runway threshold lights; or
  - (iv) the runway touchdown zone or touchdown zone markings;  
or
  - (v) the runway touchdown zone lights.

(e) Unless otherwise authorised by the Director, each pilot operating an aircraft shall immediately execute a missed approach procedure whenever, prior to touchdown, the requirements of paragraph (d) are not met.

(f) No person performing a Category III precision approach procedure without DH shall land that aircraft except in accordance with the provisions of an authorisation issued by the Director.

**91.417 Category II and III precision approach procedure manual**

(a) No person shall perform a Category II or III precision approach procedure in a New Zealand registered aircraft unless—

- (1) there is available in the aircraft—

- (i) for Category II precision approach procedures, a current Category II precision approach procedure manual approved in accordance with 91.419 for that aircraft; or
  - (ii) for Category III precision approach procedures, a current Category III precision approach procedure manual approved in accordance with 91.419 for that aircraft; and
- (2) the Category II or III precision approach procedure is performed in accordance with the procedures, instructions, and limitations in the approved manual; and
  - (3) the instruments and equipment listed in the approved manual that are required for a particular Category II or III precision approach procedure have been inspected and maintained in accordance with the maintenance programme in that manual.
- (b) Each operator of an aircraft performing a Category II or III precision approach procedure shall keep a current copy of the approved manual at its principal base of operation and shall make it available for inspection upon request by the Director.
- (c) Paragraphs (a) and (b) do not apply to operations conducted by the holder of an air operator certificate issued under Part 119.

**91.419 Approval of Category II and III precision approach procedure manual**

- (a) Each applicant for the approval of a Category II or III precision approach procedure manual, or an amendment to an approved Category II or III precision approach procedure manual, shall submit the proposed manual or amendment to the Director.
- (b) If the applicant requests an evaluation programme that requires the demonstration of a Category II or III precision approach procedure, the application shall include the following—
- (1) the location of the aircraft and the place where any demonstration is to be conducted; and
  - (2) the date any demonstration is to commence.
- (c) Each Category II or III precision approach procedure manual shall contain—
- (1) the registration, make, and model of the aircraft to which it applies; and
  - (2) a maintenance programme including procedures for the—



- (i) test and inspection of each instrument and item of equipment required for Category II or III precision approach procedures at 3 month intervals; and
  - (ii) bench testing of each instrument and item of equipment required for Category II or III precision approach procedures at 12 month intervals; and
  - (iii) test and inspection of each static pressure system in accordance with Part 43 at 12 month intervals; and
  - (iv) recording in the maintenance records the date, airport, and reasons for each discontinued Category II or III precision approach procedures because of instrument or equipment malfunction; and
- (3) the procedures and instructions related to—
- (i) the recognition of decision height; and
  - (ii) the use of runway visual range information; and
  - (iii) approach monitoring; and
  - (iv) the maximum permissible deviations of the basic ILS indicator within the decision region; and
  - (v) a missed approach; and
  - (vi) the use of airborne low approach equipment; and
  - (vii) the minimum altitude for the use of the autopilot; and
  - (viii) instrument and equipment failure warning systems; and
  - (ix) instrument failure; and
  - (x) other procedures, instructions, and limitations that may be found necessary by the Director.
- (d) Notwithstanding paragraph (c)(2)(i), a functional flight test may replace each alternate inspection in which case the maintenance programme shall include procedures for the completion and recording of this flight test.

**91.421 *Operating in icing conditions***

(a) Except as provided in paragraph (b), a pilot-in-command operating an aircraft under IFR shall not—

- (1) perform a take-off in an aircraft that has—

- (i) snow, ice, or frost adhering to any propeller, windscreen, or powerplant installation, or to an airspeed, altimeter, rate of climb, or flight attitude instrument system; or
  - (ii) snow, ice, or frost adhering to the wings, stabilisers, or control surfaces; and
- (2) fly an aircraft into known or forecast icing conditions unless the aircraft is certificated with ice protection equipment for flight in the type of known icing conditions.
- (b) A pilot-in-command may perform a take-off in an aircraft that has snow, ice, or frost, adhering to the aircraft if the take-off is performed in accordance with the aircraft flight manual, or instructions and data provided by the aircraft manufacturer, for take-off in such conditions.
- (c) If weather reports and briefing information immediately prior to the flight indicate to the pilot-in-command that the forecast icing conditions that would otherwise prohibit the flight will not be encountered during the flight because of changed weather conditions, the restrictions in paragraph (a)(2) based on forecast conditions shall not apply.

#### **91.423 Minimum altitudes for IFR flights**

Except when necessary for take-off or landing, a pilot-in-command shall not operate an aircraft under IFR below—

- (1) the applicable minimum altitudes prescribed in Part 95; or
- (2) if no applicable minimum altitude is prescribed in those Parts—
  - (i) in the case of operations over a mountainous area designated under Part 95, a height of 2000 feet above the highest obstacle within a horizontal radius of 5 nm from the track intended to be flown; or
  - (ii) in any other case, a height of 1000 feet above the highest obstacle within a horizontal radius of 5 nm from the track intended to be flown.

*[Until Parts 95 comes into force, minimum IFR altitudes are prescribed under Part 19]*

#### **91.425 IFR cruising altitude or flight level**

(a) Each pilot-in-command of an aircraft within the New Zealand FIR operating under IFR in level cruising flight shall, unless otherwise authorised by ATC for flights in controlled airspace, maintain the following altitude or flight levels—

- (1) when operating at or below 11 000 feet AMSL and—
    - (i) on a magnetic track of 270° clockwise to 089°, any odd thousand foot altitude AMSL; or
    - (ii) on a magnetic track of 090° clockwise to 269°, any even thousand foot altitude AMSL; and
  - (2) when operating at or above flight level 130 but below flight level 290, and—
    - (i) on a magnetic track of 270° clockwise to 089°, any odd flight level beginning at and including flight level 130; or
    - (ii) on a magnetic track of 090° clockwise to 269°, any even flight level beginning at and including flight level 140; and
  - (3) when operating at or above flight level 290, and
    - (i) on a magnetic track of 270° clockwise to 089°, any odd flight level, at 4000 foot intervals beginning at and including flight level 290; or
    - (ii) on a magnetic track of 090° clockwise to 269°, any odd flight level at 4000 foot intervals beginning at and including flight level 310.
- (b) Except as provided in paragraph (c), a pilot-in-command of an aircraft within the New Zealand FIR operating under IFR shall not maintain level cruising flight—
- (1) at any level between 11 000 feet AMSL and flight level 130, unless authorised to do so by ATC for flights in controlled airspace; and
  - (2) at any flight level below flight level 140 when the area QNH is 980 hPa or less; and
  - (3) below flight level 160 when operating in IMC within a 20 nm radius encompassing Mount Cook centred on 43°36' South and 170°09' East.
- (c) A pilot-in-command of an aircraft within the New Zealand FIR operating under IFR outside controlled airspace may maintain level cruising flight between 11 000 feet AMSL and flight level 130 provided the pilot-in-command—
- (1) is unable to operate the aircraft in level cruising flight at or below 11 000 feet AMSL or at or above flight level 130; and
  - (2) has established that there is no conflict with other aircraft at the altitude to be flown; and

- (3) has given prior notification of the altitude to be flown to an appropriate ATS unit.
- (d) Each pilot-in-command of an aircraft shall—
  - (1) when ascending above 11 000 feet, set the altimeter to 1013.2 hPa; and
  - (2) when descending through flight level 130, set the altimeter to the appropriate area or aerodrome QNH.

**91.427 IFR radio communications**

- (a) Each pilot-in-command of an aircraft operating under IFR shall, unless otherwise authorised by ATC—
  - (1) maintain a continuous listening watch on the appropriate frequency; and
  - (2) report as soon as possible to an appropriate ATS unit—
    - (i) the time and altitude of passing each designated reporting point, or the reporting points or the times specified by ATC; and
    - (ii) any other information relating to the safety of the flight.
- (b) Notwithstanding paragraph (a)(2), a pilot-in-command of an aircraft operating under IFR shall, while the aircraft is under radar control, report passing those reporting points specifically requested by ATC.

**91.429 IFR operations – two-way radio communications failure**

- (a) Unless otherwise authorised by ATC, each pilot-in-command of an aircraft that has two-way radio communications failure when operating under IFR in VMC flight conditions, or if VMC flight conditions are encountered after the failure, shall continue the flight under VFR and land as soon as practicable at the nearest suitable aerodrome.
- (b) Unless otherwise authorised by ATC, each pilot-in-command of an aircraft that has two-way radio communications failure when operating under IFR in IMC flight conditions shall continue the flight in accordance with paragraph (c) until reaching the clearance limit, at which time the pilot-in-command shall—
  - (1) if the clearance limit is a fix from which an approach begins, commence descent or instrument approach procedure—
    - (i) as close as possible to the expected further clearance time if one has been received; or

- (ii) if an expected further clearance time has not been received, as close as possible to the estimated time of arrival as calculated and advised to ATC; or
- (2) if the clearance limit is not a fix from which an approach begins—
  - (i) leave the clearance limit at the expected further clearance time if one has been received, or if none has been received, upon arrival over the clearance limit; and
  - (ii) proceed to a fix from which an approach begins; and
  - (iii) commence descent, or descent and approach, as close as possible to the estimated time of arrival as calculated and advised to ATC.
- (c) The pilot-in-command shall, following a two-way radio communications failure when operating under IFR in IMC flight conditions, continue the flight—
  - (1) by one of the following routes—
    - (i) by the route assigned in the last ATC clearance received; or
    - (ii) if being radar vectored, by the direct route from the point of radio failure to the fix, aid, or route specified in the vector clearance; or
    - (iii) in the absence of an assigned route, by the route that ATC has advised may be expected in a further clearance; or
    - (iv) in the absence of an assigned route or a route that ATC advised may be expected in a further clearance, by the route filed in the flight plan; and
  - (2) at the highest of the following altitudes or flight levels for the route segment to be flown—
    - (i) the altitude or flight level assigned in the last ATC clearance received; or
    - (ii) the minimum flight altitude; or
    - (iii) the altitude or flight level ATC has advised may be expected in a further clearance; and
  - (3) maintaining a listening watch on the appropriate ATIS frequency.

**91.431 Notification of facility malfunctions**

- (a) Each pilot-in-command of an aircraft operating under IFR shall notify ATS as soon as practicable after a malfunction of any aeronautical telecommunication facility during flight.
- (b) The notification required by paragraph (a), shall include the—
- (1) aircraft type; and
  - (2) aircraft registration and, if applicable, the flight number; and
  - (3) name of pilot-in-command; and
  - (4) name of the operator; and
  - (5) aircraft position and altitude; and
  - (6) phase of flight; and
  - (7) facility affected; and
  - (8) brief details of the malfunction; and
  - (9) effect on the flight.

**Subpart F — Instrument and Equipment Requirements****91.501 General requirements**

Except as provided in 91.537, no person shall operate an aircraft unless—

- (1) the aircraft is equipped with the type and number of instruments and equipment required by this Subpart; and
- (2) the instruments and equipment installed in the aircraft comply with the specifications and airworthiness design standards listed in—
  - (i) Appendix A to this Part; or
  - (ii) Appendix C to Part 21; or
  - (iii) Part 26; or
  - (iv) alternative specifications or standards approved by the Director; and
- (3) the instruments and equipment installed in the aircraft have been installed in accordance with the aircraft manufacturer's instructions or other instructions acceptable to the Director; and

- (4) the instruments and equipment installed in the aircraft are in operable condition.

### **91.503 Location of instruments and equipment**

Each operator shall ensure that—

- (1) any instruments and equipment operated or used by one pilot can be readily seen and operated from that pilot's normally seated position; and
- (2) any single instrument or item of equipment operated or used by two pilots, is installed so that it can be readily seen and operated from each pilot's normally-seated position.

### **91.505 Seating and restraints**

(a) Each aircraft, other than a balloon, shall be equipped with a—

- (1) seat or berth for each person on board; and
- (2) safety belt for each seat and restraining belts for each berth; and
- (3) shoulder harness for each seat for any aircraft certificated for aerobatic flight; and
- (4) shoulder harness for each crew seat—
  - (i) of an aircraft having a certificated seating capacity of 10 passenger seats or more and
  - (ii) of an aircraft when operating in accordance with 91.311(c); and
- (5) shoulder harness or a single diagonal shoulder belt for each flight crew seat when the aircraft is engaged in flight training.

(b) Notwithstanding paragraphs (a)(1) and (2), a seat, berth, safety belt, or restraining belt, is not required for—

- (1) a person being carried in accordance with 91.207(c)(1); and
- (2) a person being carried during parachute operations.

### **91.507 Passenger information signs**

Each aircraft, except a balloon, having a certificated seating capacity of 10 passenger seats or more in passenger compartments separated from direct communication from the flight crew compartment shall be equipped with signs operated by the crew that are visible to passengers and flight attendants to notify them when—

- (1) smoking is prohibited; and
- (2) when safety belts must be fastened.

**91.509 Minimum instruments and equipment**

(a) Except as provided in paragraph (b), each powered aircraft with an airworthiness certificate, except a powered glider, shall be equipped with the means of indicating—

- (1) airspeed; and
  - (2) mach number, if the speed limitation prescribed by the aircraft flight manual is expressed in terms of Mach number; and
  - (3) altitude in feet; and
  - (4) magnetic heading; and
  - (5) fuel contents, other than auxiliary fuel tank's contents; and
  - (6) engine revolutions of each engine; and
  - (7) oil pressure of each engine using a pressure lubricating system; and
  - (8) coolant temperature of each liquid-cooled engine; and
  - (9) oil temperature of each engine rated at over 250 brake horsepower using a pressure system; and
  - (10) manifold pressure of each supercharged, or turbocharged, engine or each engine fitted with a constant speed propeller; and
  - (11) cylinder head temperature of each air-cooled piston engine rated at over 250 brake horsepower; and
  - (12) flap position, if flaps are fitted, unless the position of the flaps can be determined visually by the crew; and
  - (13) landing gear position, if the aircraft has retractable undercarriage; and
  - (14) the correct functioning of electrical power generation equipment; and
  - (15) a means of automatically recording and accumulating the time from each takeoff until each landing.
- (b) Paragraph (a)(15) shall not apply to—
- (1) any aircraft until 1 April 1998; and
  - (2) an aircraft in excess of 5700 kg MCTOW; and



(3) an aircraft without finite life components fitted.

(c) Each aircraft equipped with a door leading to any compartment normally accessible to passengers and that is lockable shall be equipped with a means for the crew to unlock the door.

**91.511 Night VFR instruments and equipment**

(a) Each powered aircraft with an airworthiness certificate operated under VFR by night shall be equipped in accordance with 91.509 and have—

- (1) except as provided in paragraph (b), a means of indicating rate of turn and slip; and
- (2) position lights; and
- (3) an anticollision light system; and
- (4) illumination for each required instrument or indicator.

(b) An aircraft equipped with a third attitude instrument indicator that is usable through 360° of pitch and roll does not need to be equipped with a means of indicating rate of turn.

**91.513 VFR communication equipment**

(a) Each aircraft operating under VFR in controlled airspace shall be equipped with radio communications equipment that meets level 1 or 2 standards specified in Appendix A, A.9 and that is capable of providing continuous two-way communications with an appropriate ATC unit, unless the pilot of the aircraft is authorised by ATC to operate under VFR without radio communication.

(b) Each aircraft operating under VFR outside controlled airspace shall be equipped with radio communications equipment that meets level 1 or 2 standards specified in Appendix A, A.9 if the equipment is to be used for communication with any ATS unit.

**91.515 Communication and navigation equipment – VFR over-water**

Each aircraft operating under VFR over water, at a distance that is more than 30 minutes flying time from the nearest shore, shall be equipped with—

- (1) communication equipment that—
  - (i) meets level 1 or 2 standards specified in Appendix A, A.9; and
  - (ii) is capable of providing continuous two-way communications with an appropriate ATS unit or aeronautical telecommunications facility; and

- (2) navigation equipment that is capable of navigating the aircraft in accordance with the flight plan.

**91.517 IFR instruments and equipment**

Each powered aircraft issued with an airworthiness certificate and operating under IFR, shall be equipped in accordance with 91.509 and 91.511 and have the means of indicating—

- (1) aircraft attitude, by gyroscopic or inertial means; and
- (2) magnetic heading, by gyroscopic or inertial means; and
- (3) that the power supply to any gyroscopic instruments is adequate; and
- (4) sensitive pressure altitude, in feet, adjustable for barometric pressure in hectoPascals or millibars; and
- (5) outside air temperature; and
- (6) time in hours, minutes, and seconds; and
- (7) airspeed in knots, with a means of preventing malfunctioning due to either condensation or icing; and
- (8) rate of climb and descent.

**91.519 IFR communication and navigation equipment**

(a) Each aircraft operating under IFR shall be equipped with communication equipment that meets level 1 standards specified in Appendix A, A.9 and is capable of providing continuous two-way communications with an appropriate ATS unit or aeronautical telecommunications facility.

(b) Each aircraft operating under IFR shall be equipped with a navigation system which—

- (1) meets level 1 standards specified in Appendix A, A.9; and
- (2) will enable the aircraft to proceed in accordance with—
  - (i) the flight plan; and
  - (ii) the designated RNP airspace where applicable; and
  - (iii) in accordance with the requirements of ATC.

(c) Each aircraft operating in airspace with an MNPS designated under ICAO Doc 7030 shall—

- (1) be equipped with navigation equipment capable of continuously indicating to the flight crew adherence to or departure from track, in accordance with the MNPS, at any point along that track; and
  - (2) be approved by the Director for MNPS operations.
- (d) Each aircraft operating in airspace where a RVSM of 1000 feet is applied by ATC above flight level 290 shall be—
- (1) approved by the Director for operation in the airspace concerned; and
  - (2) equipped with equipment capable of—
    - (i) indicating to the flight crew the flight level being flown; and
    - (ii) automatically maintaining a selected flight level; and
    - (iii) for aircraft type certificated before 1 January 1997, providing an aural and visual alert to the flight crew when a deviation of 300 feet from the selected flight level occurs; and
    - (iv) for aircraft type certificated after 31 December 1996, providing an aural and visual alert to the flight crew when a deviation of 200 feet from the selected flight level occurs; and
    - (v) automatically reporting pressure altitude with the capability for switching to operate from either altitude measurement system required by paragraph (e).
- (e) The equipment required in paragraph (d)(2)(i) shall consist of at least two altitude measurement systems.
- (f) Each aircraft operating in RNP or MNPS airspace shall have the equipment required by paragraphs (a), (b), and (c)(1) installed in such number as to ensure, in the event of the failure of any independent system for either communication or navigation purposes, the remaining equipment will enable the aircraft to continue the flight in compliance with paragraphs (a), (b) and (c).

#### **91.521 Category II and III precision approach equipment**

- (a) Each aircraft performing a Category II or III precision approach procedure shall be equipped in accordance with 91.509, 91.511, and 91.517, and have—
- (1) two localiser and glide slope receiving systems that—
    - (i) each provide a basic ILS display at each pilot station; and
    - (ii) have at least one localiser antenna and one glide slope antenna; and

- (2) at least one ILS system required under paragraph (1) that is not affected by the use of the aircraft communication equipment; and
- (3) a marker beacon receiver that provides distinctive aural and visual indications of the outer and middle markers; and
- (4) two gyroscopic or inertial aircraft attitude indicators; and
- (5) two gyroscopic or inertial magnetic heading indicators; and
- (6) two airspeed indicators calibrated in knots with a means of preventing malfunctioning due to either condensation or icing; and
- (7) two sensitive altimeters, calibrated in feet, each having a placarded correction for altimeter scale error and for the wheel height of the aircraft; and
- (8) two rate of climb and descent indicators; and
- (9) a flight control guidance system that consists of—
  - (i) an automatic approach coupler, with, at least, automatic steering in relation to an ILS localiser at one pilot station; or
  - (ii) a flight director system that shall display computed information as steering commands in relation to an ILS localiser, and on the same instrument, either computed information as pitch commands in relation to an ILS glide slope or basic ILS glide slope information; and
- (10) for operation with a decision height below 150 feet—
  - (i) a marker beacon receiver providing aural and visual indications of the inner marker; or
  - (ii) a radio altimeter; and
- (11) warning systems, for immediate detection by the pilot of system faults in—
  - (i) items required by subparagraphs (1), (4), (5), and (9); and
  - (ii) if installed for use in Category III precision approach procedures, the radio altimeter and autothrottle system; and
- (12) fully functioning dual controls; and
- (13) an externally vented static pressure system with an alternate static pressure source; and

(14) a windshield wiper, or equivalent means of providing adequate cockpit visibility for a safe transition, by either pilot, to touchdown and rollout.

(b) The number of instruments and equipment required under paragraphs (a)(4), (5), (6), (7), and (8) includes the instruments and equipment required for IFR operations under 91.517.

### **91.523 Emergency equipment**

(a) Each aircraft having a certificated seating capacity of 10 passenger seats or more shall be equipped with—

- (1) the number of first aid kits specified in Table 7, which shall be—
  - (i) readily accessible for the treatment of injuries likely to occur in flight or in minor accidents; and
  - (ii) distributed in each compartment; and
- (2) the number of hand-held fire extinguishers specified in Table 8, which shall be readily accessible, and distributed in accordance with Table 8.

(b) Each aircraft having a certificated seating capacity of 20 passenger seats or more shall be equipped with an axe that is readily accessible to the crew.

(c) Each aircraft having a certificated seating capacity of 61 passenger seats or more shall be equipped with portable battery-powered megaphones—

- (1) readily accessible to a normal flight attendant seat for crew members assigned to direct emergency evacuation; and
- (2) installed in accordance with Table 9.

(d) Each item of equipment required under paragraphs (a)(2) and (c) shall clearly indicate its method of operation.

(e) Each compartment or container that contains any item of equipment required by paragraph (a), shall be marked to indicate its contents.

(f) Paragraph (c) shall not apply when the aircraft is carrying cargo exclusively in any passenger compartment converted for the carriage of cargo.

**Table 7: First aid kit**

Passenger numbers of—	Total number of kits
1 through 100	1
101 through 200	2
201 through 300	3
301 through 400	4
401 through 500	5
501 through 600	6
601 or more	7

**Table 8. Hand-held fire extinguishers**

Location	Distribution
Each Class A, B, and E cargo compartment	1
On or near the flight deck, readily accessible from the flight crew station	1
A galley not in a passenger, crew, or cargo compartment	1
Accessible to each galley in a passenger compartment	1
Passenger Compartment with passenger numbers of—	
1 through 30	1
31 through 60	2
61 through 200	3
201 through 300	4
301 through 400	5
401 through 500	6
501 through 600	7
601 or more	8

**Table 9.** Megaphones

Certificated seating capacity of—	Distribution	
	Forward end	Most rearward location
61 through 99		1
100 or more	1	1

**91.525 Flights over water**

- (a) Each aircraft operated on overwater flights shall be equipped with—
- (1) for single-engine aircraft, or multi-engine aircraft unable to maintain a height of 1000 feet AMSL with one engine inoperative, on flights more than gliding distance from shore, one lifejacket for each person on board stowed in a position readily accessible from each seat or berth; and
  - (2) for multi-engine aircraft on flights more than 50 nm from shore, one lifejacket for each person on board stowed in a position readily accessible from each seat or berth; and
  - (3) for single engine aircraft on flights of more than 100 nm from shore—
    - (i) sufficient liferafts with buoyancy and rated capacity to accommodate the occupants of the aircraft; and
    - (ii) a survival locator light on each liferaft; and
    - (iii) a survival kit, appropriately equipped for the route to be flown, attached to each required liferaft; and
    - (iv) at least one pyrotechnic signalling device on each liferaft; and
    - (v) one ELT(S) or one EPIRB; and
  - (4) for multi-engine aircraft capable of continuing flight with one or more engines inoperative, on flights of more than 200 nm shore the equipment specified in paragraph (a)(3).
  - (5) for aircraft in excess of 5700 kg MCTOW, on flights more than 200 nm from shore, the equipment specified in paragraph (a)(3) and an additional ELT(S) or EPIRB.

(b) Life rafts, life jackets, and signalling devices shall be installed in conspicuously identified locations and easily accessible in the event of a ditching.

**91.527 Aircraft operations on water**

Each aircraft operating on water shall be equipped with—

- (1) one life jacket for each person on board, stowed in a position readily accessible from each seat or berth; and
- (2) for each aircraft in excess of 5700 kg MCTOW, one sea anchor.

**91.529 Emergency locator transmitter**

(a) Except as provided in paragraphs (b), (c), and (d), each aircraft shall have an automatic ELT installed.

(b) An aircraft may be ferried from the place where possession of the aircraft was taken to a place where the aircraft ELT is to be installed if no passengers are carried on the aircraft.

(c) An aircraft with an inoperative aircraft ELT may be ferried from a place where repairs or replacement cannot be made to a place where they can be made if no passengers are carried on the aircraft.

(d) Paragraph (a) shall not apply to—

- (1) gliders until 1 April 1998; or
- (2) microlight aircraft and manned free balloons.

**91.531 Oxygen indicators**

Each aircraft operated at altitudes above 13 000 feet AMSL, or for more than 30 minutes between 10 000 feet up to and including 13 000 feet AMSL, shall be equipped with a means of indicating—

- (1) to the flight crew—
  - (i) the amount of oxygen available in each source of supply and whether the oxygen is being delivered to the dispensing units; and
  - (ii) of a pressurised aircraft, by visual or aural warning when the cabin pressure altitude exceeds 10 000 feet AMSL; and
- (2) to each user of an individual dispensing unit, the amount of oxygen available and whether the oxygen is being delivered to the dispensing unit.



**91.533 Oxygen for non-pressurised aircraft**

(a) Each aircraft with a non-pressurised cabin that is operated at altitudes above 10 000 feet AMSL shall be equipped with—

- (1) at altitudes up to and including 13 000 feet AMSL—
  - (i) for any period in excess of 30 minutes, supplemental oxygen for continuous use by all crew members and 10% of passengers; and
  - (ii) therapeutic oxygen for continuous use by not less than 3% of the passengers; and
- (2) at altitudes above 13 000 feet AMSL up to and including 25 000 feet AMSL—
  - (i) supplemental oxygen for continuous use by all crew members and passengers; and
  - (ii) therapeutic oxygen for continuous use by not less than 1% of the passengers; and
  - (iii) portable protective breathing equipment for each crew member that is readily accessible for immediate use containing the greater of 120 litres of oxygen or the quantity of oxygen required for continuous use for that time the cabin pressure altitude would exceed 10 000 feet.

(b) The requirements in paragraph (a) may be satisfied by substituting an equivalent quantity of supplemental oxygen for therapeutic oxygen or an equivalent quantity of therapeutic oxygen for supplemental oxygen.

**91.535 Oxygen for pressurised aircraft**

(a) Each aircraft with a pressurised cabin that is to be operated at altitudes above 10 000 feet AMSL up to and including 25 000 feet AMSL shall be equipped with—

- (1) the following equipment that is readily accessible to each flight crew member at their normally-seated position—
  - (i) a crew member on-demand oxygen mask capable of providing a continuous supply of supplemental oxygen for that time following failure of the pressurisation system that the cabin pressure altitude would exceed 10 000 feet AMSL; and
  - (ii) protective breathing equipment capable of providing oxygen for at least 15 minutes; and

- (2) one set of portable protective breathing equipment capable of providing oxygen for at least 15 minutes that is readily accessible to any flight crew member; and
  - (3) the following equipment that is readily accessible to each crew member, other than flight crew, at their normally-seated position—
    - (i) a passenger oxygen mask; and
    - (ii) portable protective breathing equipment for immediate use containing the greater of 120 litres of oxygen or the quantity of oxygen required for continuous use for that time the cabin pressure altitude would exceed 10 000 feet; and
  - (4) sufficient spare oxygen masks, or portable protective breathing equipment, distributed to provide immediate availability of oxygen to each crew member, regardless of location; and
  - (5) a minimum quantity of supplemental oxygen that shall provide—
    - (i) 45 minutes supply for each flight crew member; or
    - (ii) 12 minutes supply for each crew member and passenger; and
  - (6) the greater of the quantities of supplemental or therapeutic oxygen required—
    - (i) if the aircraft is capable of descending from its flight altitude to below 14 000 feet AMSL within four minutes, to provide oxygen to 10% of the passengers for any time the cabin pressure altitude is above 10 000 feet AMSL; or
    - (ii) if the aircraft cannot descend to below 14 000 feet, to provide oxygen to all passengers for the time the cabin pressure altitude is above 14 000 feet; or
    - (iii) to provide 30 minutes supply for 10% of the passengers; or
    - (iv) to provide for continuous use by 1% of the passengers.
- (b) Notwithstanding paragraph (a)(2) crew member portable protective breathing equipment is not required when—
- (1) alternative protective breathing equipment is provided that can supply oxygen for 15 minutes; and
  - (2) the aircraft is flown by only one pilot; and
  - (3) no other crew member is carried; and

- (4) the passengers are all seated within view of the pilot in a single compartment.
- (c) For the purposes of paragraphs (a)(5) and (6), the calculation of the oxygen requirements in the event of pressurisation failure is to take into account—
- (1) the time necessary for an emergency descent and the recovery phase to level flight at a safe altitude; and
  - (2) any subsequent stage of the flight prior to landing when it may be necessary for the aircraft to be flown at a pressure altitude above 10 000 feet.
- (d) Each aircraft with a pressurised cabin that is operated at altitudes above 25 000 feet AMSL up to and including 30 000 feet AMSL shall be equipped with the equipment in paragraph (a) and—
- (1) a quick donning crew member on-demand mask readily accessible to each flight crew member at their normally seated position; and
  - (2) oxygen masks capable of providing supplemental oxygen—
    - (i) to all passengers and crew members other than flight crew members; and
    - (ii) in each washroom and each separate lavatory; and
  - (3) therapeutic oxygen capable of providing not less than 45 minutes supply for 10% of the passengers carried.
- (e) Each aircraft with a pressurised cabin that is to be operated at altitudes above 30 000 feet AMSL shall be equipped with the equipment in paragraphs (a) and (c) with the following additions—
- (1) the total number of oxygen outlets and masks in the passenger compartments, including those in each washroom and lavatory, shall exceed the number of passenger seats by at least 10%; and
  - (2) the extra oxygen units shall be uniformly distributed throughout the aircraft; and
  - (3) oxygen masks shall be automatically presented to the passengers and crew members in the passenger compartment when the cabin pressure altitude exceeds 14 000 feet; and
  - (4) flight crew shall be provided with a manual means of making the passenger masks available in the event of failure of the automatic system.

**91.537 Inoperative instruments and equipment**

(a) Except as provided in paragraph (b), each aircraft with inoperative instruments or equipment installed shall not be operated unless the following conditions are met—

- (1) an MEL has been approved for that aircraft in accordance with 91.539; and
- (2) the aircraft records available to the pilot include an entry describing the inoperable instruments and equipment; and
- (3) the aircraft is operated in accordance with all applicable conditions and limitations contained in the MEL.

(b) Aircraft that do not exceed 5700 kg MCTOW and do not have an MEL approved under 91.539 may be operated under this Part with inoperative instruments and equipment provided the inoperative instruments and equipment—

- (1) are not—
  - (i) part of the VFR day certification instruments and equipment prescribed in the applicable airworthiness requirements under which the aircraft was type certificated; or
  - (ii) required by this Subpart for specific operations; or
  - (iii) required by an airworthiness directive to be in operable condition; and
- (2) are placarded **Inoperative** and the required maintenance recorded in accordance with Part 43.

**91.539 Approval of minimum equipment list**

(a) Each applicant for the approval of an MEL shall complete form CAA 24091/01, and submit it to the Director together with a payment of the appropriate application fee prescribed by regulations made under the Act.

(b) An MEL shall contain —

- (1) the type and model of the aircraft to which it applies; and
- (2) a list of equipment for the aircraft that may be inoperative that—
  - (i) has been approved by the manufacturer of the aircraft; or
  - (ii) has been approved by the Contracting state that issued the type certificate for the aircraft; or
  - (iii) is otherwise acceptable to the Director.

- (c) An MEL shall not contain any instruments or equipment that are—
- (1) either specifically or otherwise required by the airworthiness requirements under which the aircraft is type certificated; or
  - (2) required by this Subpart for specific operations; or
  - (3) required by an airworthiness directive to be in operable condition.
- (d) The Director may prescribe such operating conditions and limitations on the MEL as the Director considers necessary in the interest of safety.

**91.541 SSR transponder and altitude reporting equipment**

(a) Except as provided in paragraph (b), and unless otherwise authorised or instructed by ATC, each aircraft operating in transponder mandatory airspace designated under Part 71 shall be equipped with a SSR transponder having—

- (1) Mode 3/A 4096 code capability replying to Mode 3/A interrogations with the code specified by ATC; and
- (2) Mode C capability that automatically replies to Mode C interrogations by transmitting pressure altitude information in 100 foot increments.

(b) Paragraph (a)(1) shall not apply to gliders and manned free balloons until 1 April 1998.

(c) Aircraft operating in airspace where Mode S transponder equipment is required shall be equipped with a transponder with Mode S capability, replying to—

- (1) Mode 3/A interrogations with the code specified by ATC; and
- (2) intermode; and
- (3) Mode S interrogations.

*[Until Part 71 comes into force, transponder mandatory airspace is designated under Part 19]*

**91.543 Altitude alerting system or device – turbojet or turbofan**

(a) Except as provided in paragraph (b), each turbojet or turbofan powered aeroplane shall be equipped with an altitude alerting system or device that—

- (1) alerts the pilot upon approaching a preselected altitude in either ascent or descent—
  - (i) by a sequence of both aural and visual signals in sufficient time to establish level flight at that preselected altitude; or

- (ii) by a sequence of visual signals in sufficient time to establish level flight at that preselected altitude, and when deviating above or below that preselected altitude, by an aural signal; and
  - (2) provides the required signals from sea level to the highest operating altitude approved for the aeroplane in which it was installed; and
  - (3) enables use of preselected altitudes in increments that are commensurate with the altitudes at which the aeroplane can be operated; and
  - (4) may be tested without special equipment to determine proper operation of the alerting signals; and
  - (5) accepts barometric pressure settings if the system or device operates on barometric pressure.
- (b) Paragraph (a) shall not apply—
- (1) to the operation of any aeroplane that has an airworthiness certificate issued in the restricted, or special category; or
  - (2) to the operation of any aeroplane for the purposes of—
    - (i) ferrying a newly acquired aeroplane from the place where possession of it was taken to a place where the altitude alerting system or device is to be installed; or
    - (ii) conducting an airworthiness flight test of the aeroplane; or
    - (iii) ferrying an aeroplane to a place outside New Zealand for the purpose of registering it in a foreign country; or
    - (iv) conducting a sales demonstration of the operation of the aeroplane; or
    - (v) training foreign flight crews in the operation of the aeroplane before ferrying to a place outside New Zealand for the purpose of registering it in a foreign country.

**91.545 Assigned altitude indicator**

- (a) Each aeroplane operating under IFR that is not equipped with an altitude alerting system or device shall be equipped with a means of indicating an altitude assigned by ATC.
- (b) The means of indicating assigned altitude required by paragraph (a) shall—

- (1) be located so that it may be readily adjusted for setting from each pilot station; and
- (2) display assigned altitude information that is clearly visible to all flight crew members whose duties involve altitude assignment monitoring; and
- (3) enable use of preselected altitudes in increments that are commensurate with the altitudes at which the aeroplane can be operated.

## **Subpart G — Operator Maintenance Requirements**

### **91.601 Applicability**

(a) This Subpart prescribes rules specifying the requirements to maintain New Zealand registered aircraft operating within or outside of New Zealand.

(b) The requirements in 91.603, 91.607, 91.619, 91.621, 91.623, 91.625, and 91.629 of this Subpart shall not apply to microlight aircraft maintained under Part 103.

(c) The requirements in 91.603, 91.607, 91.621, 91.623, 91.625, and 91.629 of this Subpart shall not apply to gliders maintained under Part 104.

(d) The requirements in 91.607, 91.619, 91.621, 91.623, and 91.625 of this Subpart shall not apply to aircraft maintained and reviewed in accordance with a maintenance programme and maintenance review process authorised by an air operator certificate issued under Part 119.

### **91.603 General maintenance requirements**

The operator of an aircraft shall ensure that—

- (1) the aircraft is maintained in an airworthy condition; and
- (2) the applicable airworthiness directives are complied with; and
- (3) the aircraft is inspected in accordance with this Subpart; and
- (4) the following are complied with—
  - (i) the mandatory replacement times, inspection intervals, and related procedures specified in the airworthiness limitations section of a manufacturer's maintenance manual or instructions for continued airworthiness issued for the aircraft; or

- (ii) the inspection intervals and related procedures detailed in a maintenance programme authorised by an air operator certificate issued under Part 119; or
  - (iii) the inspection intervals and related procedures detailed in a maintenance programme that is approved under 91.623, or is otherwise acceptable to the Director; and
- (5) except as provided in paragraph (6), discrepancies are repaired in accordance with Part 43 between inspections required by the maintenance programme under which the aircraft is maintained ; and
  - (6) any inoperative instrument or item of equipment, permitted to be inoperative by 91.537, is repaired, replaced, removed, or inspected at the next inspection required by the maintenance programme under which the aircraft is maintained; and
  - (7) a placard has been installed as required by 43.109 when listed discrepancies include inoperative instruments or equipment; and
  - (8) no person performs maintenance on the aircraft other than as prescribed in this Subpart, Part 43 or any other applicable Rule.

#### **91.605 Required inspections**

- (a) No person shall operate an aircraft unless it has been inspected—
  - (1) in accordance with 91.607, 91.609, 91.611, 91.613, and 91.615; or
  - (2) for the issue of an airworthiness certificate in accordance with Part 21 within the preceding—
    - (i) 12 calendar months; and
    - (ii) 100 hours time in service.
- (b) Notwithstanding paragraph (a), and unless specifically prohibited by another rule, an airworthiness directive, or a manufacturer's requirement, the inspection periods specified in 91.607, 91.609, 91.611, 91.613, and 91.615 may be extended by up to 10% to allow—
  - (1) accomplishment of an inspection during other scheduled maintenance; or
  - (2) completion of the delivery of an aircraft to the place where the inspection can be done.
- (c) When applying the provisions of paragraph (b)—



- (1) the extension granted shall be recorded in the appropriate maintenance record; and
- (2) the next required inspection period shall be deemed to begin at the beginning of the extension period.

**91.607 Annual and 100 hour inspections**

(a) No person shall operate an aircraft unless it has had an annual or 100 hour inspection performed in accordance with Part 43—

- (1) within the preceding 12 calendar months; and
- (2) within the preceding 100 hours time in service.

(b) Paragraph (a) does not apply to an aircraft maintained in accordance with a maintenance programme approved under 91.623.

**91.609 Radio station tests and inspections**

No person shall operate an aircraft unless any radio station required to be installed in that aircraft by Subpart F has been tested and inspected in accordance with Part 43, Appendix B within the preceding 24 calendar months.

**91.611 Altimeter system and altitude reporting equipment tests and inspections**

(a) No person shall operate an aircraft unless any static pressure system, altimeter instrument, or automatic pressure altitude reporting system required to be installed in that aircraft by Subpart F has been tested and inspected in accordance with Part 43, Appendix D—

- (1) within the preceding 24 calendar months; and
- (2) following any opening and closing of the static pressure system, except for the use of system drain and alternate static pressure valves, or where self sealing disconnect coupling is provided; and
- (3) following installation of, or maintenance on, the automatic pressure altitude reporting system where data correspondence error could be introduced.

**91.613 SSR transponder tests and inspections**

No person shall operate an aircraft unless the SSR transponder required to be installed in that aircraft by Subpart F has been tested and inspected within the preceding 24 calendar months, in accordance with Part 43, Appendix E.

**91.615 Emergency locator transmitter tests and inspections**

No person shall operate an aircraft unless the emergency locator transmitter required to be installed in that aircraft by Subpart F has—

- (1) been tested and inspected, within the preceding 12 calendar months, in accordance with Part 43, Appendix F; and
- (2) had its batteries replaced or recharged—
  - (i) when the transmitter has been in use for more than 1 cumulative hour; or
  - (ii) when their useful life or, for rechargeable batteries, their useful life of charge, as established by the manufacturer, has expired.

**91.617 Operation after maintenance**

(a) No person shall operate an aircraft that has undergone maintenance unless—

- (1) it has been certified for release to service by a person authorised under 43.101; and
- (2) the maintenance record entries required by 43.75, 43.105, 43.107, or 43.207 as applicable, have been made.

(b) No person shall operate an aircraft, other than for the purposes of paragraph (b)(1), that has undergone maintenance, where the performance of that maintenance may have appreciably affected its flight characteristics or operation in flight unless—

- (1) an operational flight check has been—
  - (i) carried out, in respect of the maintenance performed, by a crew including a pilot-in-command who is the holder of a valid pilot licence and a type rating for the type of aircraft to be tested; and
  - (ii) logged in the aircraft records; or
- (2) prior to release to service, ground tests, inspections, or both, show conclusively that the maintenance has not appreciably changed the flight characteristics or substantially affected the flight operation of the aircraft.

(c) No person shall be carried on an operational flight check under paragraph (b)(1) unless that person performs an essential function in connection with the flight check.

**91.619 Annual review of airworthiness**

(a) No person shall operate an aircraft unless an annual review of airworthiness has been performed within the preceding 12 months in accordance with Part 43.

(b) The first annual review of airworthiness shall be required at the expiry of any maintenance release valid at 31 March 1997.

**91.621 Maintenance programmes**

(a) Each operator of—

- (1) an aircraft with a MCTOW of greater than 5700 kg; or
- (2) a turbine-powered multi-engine aircraft; or
- (3) a turbine-powered rotorcraft; or
- (4) an aircraft issued with a special category airworthiness certificate,

shall ensure that the aircraft, including the airframe, engines, propellers, rotors, appliances, survival equipment, and emergency equipment, is maintained in accordance with a maintenance programme listed in paragraph (b)(1).

(b) The operator of an aircraft described in paragraph (a) shall—

- (1) use one of the following programmes for the maintenance of the aircraft:
  - (i) a current maintenance programme approved under Part 119;
  - (ii) a current maintenance programme recommended by the manufacturer;
  - (iii) a maintenance programme established by the operator of that aircraft and, except as provided in paragraph (c), approved under 91.623; and
- (2) identify the programme in the aircraft maintenance records; and
- (3) identify in the programme the person responsible for scheduling the maintenance required by the programme; and
- (4) when changing from one programme required by paragraph (b)(1) to another, apply the time in service, calendar times, or cycles of operation accumulated under the previous programme when determining inspection due times under the new programme; and
- (5) provide a copy of the maintenance programme to the person performing maintenance on the aircraft and, upon request, to the Director.

(c) A maintenance programme for an aircraft requiring a special category airworthiness certificate shall be approved by the Director at the time of issue of the airworthiness certificate in accordance with Part 21.

### **91.623 Approval of maintenance programmes**

(a) Each applicant for the approval of a maintenance programme shall complete form CAA 24091/02, and submit it to the Director together with the document required by paragraph (c) and a payment of the appropriate application fee prescribed by regulations made under the Act.

(b) Form CAA 24091/02 shall require—

- (1) the name and address for service in New Zealand of the applicant; and
- (2) the identification of the maintenance organisation that is to conduct the maintenance; and
- (3) the maintenance status of the aircraft prior to the commencement of the programme; and
- (4) the means of introducing the programme; and
- (5) such further particulars relating to the design change and applicant as may be required by the Director as indicated on the form.

(c) The applicant shall provide the Director with a document, that is available and readily understandable to all pilots and maintenance personnel, containing details of the programme including—

- (1) an explanation of the programme, including the continuity of inspection responsibility and the compilation and retention of records, reports, and technical reference material; and
- (2) instructions and procedures for the conduct of the maintenance for the particular aircraft type, including required inspections and tests; and
- (3) an inspection schedule for performing the inspections required by the programme expressed in terms of the time in service, cycles, calendar time, number of system operations, or any combination of these; and
- (4) for a progressive inspection programme, an inspection schedule that provides for the complete inspection of the aircraft within each 12 month period and is consistent with—
  - (i) the manufacturer's recommendations; and

- (ii) service experience; and
  - (iii) the type of operation in which the aircraft is engaged; and
  - (5) instructions for exceeding an inspection interval by not more than 10% to allow—
    - (i) accomplishment of an inspection during other scheduled maintenance; or
    - (ii) completion of the delivery of an aircraft to the place where the inspection can be done; and
  - (6) instructions for changing an inspection interval because of service experience; and
  - (7) sample inspection forms and instructions for their use; and
  - (8) sample reports and records and instructions for their use.
- (d) An applicant is entitled to the approval of a maintenance programme if the Director is satisfied that—
- (1) the requirements of this rule are satisfied; and
  - (2) the grant of the approval is not contrary to the interests of aviation safety.

**91.625 Changes to maintenance programmes**

- (a) Each operator shall, upon the Director's request, make any revisions to a maintenance programme found by the Director to be necessary to satisfy the continuing airworthiness requirements of that programme.
- (b) Each operator discontinuing a maintenance programme approved under 91.623 shall—
- (1) notify the Director in writing of the discontinuation, within 7 days of the discontinuation; and
  - (2) either—
    - (i) complete the inspections required by 91.605; or
    - (ii) re-schedule the inspections required by 91.605 from the last complete inspection of the aircraft; or
    - (iii) if changing to another maintenance programme approved under 91.623, schedule the inspections required by the new programme to ensure the continued airworthiness of the aircraft.

**91.627 Maintenance records**

(a) Each operator of an aircraft, except a Class 1 microlight, shall ensure that the following records are compiled for each airframe, engine, propeller, rotor, and appliance of an aircraft—

- (1) records of all maintenance performed including—
  - (i) a description of the work; and
  - (ii) the date of completion of the work; and
  - (iii) the signature, and certificate number of the person approving the aircraft for return to service; and
- (2) records containing the following information—
  - (i) the total time in service of the airframe, each engine, each propeller, and each rotor; and
  - (ii) the current status of lifed parts of each airframe, engine, propeller, rotor and appliance; and
  - (iii) the time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis; and
  - (iv) the current maintenance status of the aircraft, including the time since the last inspection required by the maintenance programme under which the aircraft is maintained; and
  - (v) the current status of each applicable AD including, the AD number, the revision date, the means of compliance, and if the AD involves recurring action, the time and date when the next action is required; and
  - (vi) a list of current major modifications and major repairs to each airframe, engine, propeller, rotor, and appliance; and
  - (vii) the time since the last annual review of airworthiness or maintenance review.

(b) The records may be kept in plain language form or in coded form provided that the coded form provides for the preservation and retrieval of information in a manner acceptable to the Director.

**91.629 Technical log**

(a) Each operator of an aircraft shall provide a technical log for the aircraft which has provision for recording—

- (1) the name of the operator; and
- (2) the registration, type, and model of the aircraft; and
- (3) the identity of the maintenance programme to which the aircraft is maintained; and
- (4) a statement of the maintenance status of the aircraft including the identity of the next scheduled inspection and the date due; and
- (5) the date or hours at which any other maintenance is due prior to the next scheduled inspection; and
- (6) the date at which the next annual review of airworthiness or maintenance review is due; and
- (7) the daily hours flown; and
- (8) the total time in service; and
- (9) if applicable—
  - (i) the daily cycles used; and
  - (ii) the total cycles; and
- (10) any defects found by the pilot during or following a flight; and
- (11) details of rectification of defects occurring between scheduled inspections and the certificate of release to service for that rectification; and
- (12) details of any deferred rectification including any inoperative equipment with which the aircraft is permitted to be flown under 91.537.

(b) The operator shall record the information specified in paragraph (a) in the technical log and ensure that the information is current.

#### **91.631 Retention of records**

Each operator of an aircraft shall retain—

- (1) the records specified in 91.627(a)(1) until the work is repeated or superseded by other work of equivalent scope and detail, or for 2 years after the work is performed, whichever occurs first; and
- (2) the records specified in 91.627(a)(2) until six months after the aircraft or aircraft component is withdrawn from service; and

- (3) a list of discrepancies furnished to an operator under 43.109 or 43.157 until the discrepancies are corrected and the aircraft is certified for return to service.

### **91.633 Transfer of maintenance records**

Each holder of a New Zealand certificate of registration for an aircraft who transfers registration to another person under Part 47 shall, at the time of transfer of registration, transfer to that person—

- (1) the records specified in 91.627(a)(2); and
- (2) the records specified in 91.627(a)(1) which are not included in the records transferred under paragraph (1).

## **Subpart H — Special Flight Operations**

### **91.701 Aerobatic flight**

(a) Except as provided in paragraph (e), no pilot shall operate an aircraft in aerobatic flight—

- (1) over, or within a horizontal distance of 2000 feet of, a congested area of a city, town, or settlement; or
- (2) over, or within a horizontal distance of 2000 feet of, an open air assembly of persons; or
- (3) within any controlled airspace except with the authorisation of ATC.

(b) Except as provided in paragraph (c), no pilot shall operate an aircraft in aerobatic flight below a height of 3000 feet.

(c) A pilot may operate an aircraft in aerobatic flight—

- (1) between a height of 1500 feet and 3000 feet if the pilot holds an aerobatic rating issued under Part 61; and
- (2) below a height of 1500 feet if the pilot—
  - (i) holds an aerobatic rating issued under Part 61 that authorises aerobatic flight to a specified height below 1500 feet; and
  - (ii) does not perform aerobatic flight below the height authorised in their aerobatic rating; and
  - (iii) is participating in an aviation event.

(d) No pilot shall carry a passenger in aerobatic flight unless they hold an aerobatic rating issued under Part 61.



(e) A pilot may operate an aircraft within a horizontal distance of 2000 feet of spectators at an aviation event if the pilot is participating in that aviation event in accordance with 91.703.

### **91.703 Aviation events**

(a) No person shall conduct an aviation event, and no person shall operate an aircraft in an aviation event, unless the organiser of the event is the holder of an aviation event authorisation issued by the Director.

(b) Each applicant for an aviation event authorisation shall submit an aviation event plan to the Director at least 90 days prior to the start of the aviation event.

(c) The aviation event plan required by paragraph (b) shall—

(1) contain the following information about the proposed aviation event—

- (i) name, position, and address of the organiser; and
- (ii) place, date, and time; and
- (iii) type of event; and
- (iv) details of the structure of the organisation including persons who are responsible for supervising the aviation event; and
- (v) details of the flying programme; and
- (vi) detailed plan and description of the site with sufficient detail to show compliance with the requirements of paragraph (d); and
- (vii) details of control methods to be used for the safety of the spectators; and
- (viii) details of emergency services to be provided; and

(2) be acceptable to the Director.

(d) A pilot-in-command of an aircraft participating in an aviation event shall—

- (1) for display flights, other than a display of agricultural operations or helicopter operations, operate at a height of at least 100 feet above the surface; and
- (2) fly the aircraft aligned with reference to a display line sufficiently distanced from spectators so as not to cause undue risk to persons or property on the surface; and
- (3) not carry any passengers; and

- (4) not fly over any spectator area; and
  - (5) not conduct any manoeuvre between the display line and any spectator area; and
  - (6) with the exception of a helicopter hovering or taxiing, not initiate any manoeuvre in the direction of any spectator area.
- (e) Paragraph (a) shall not apply to aviation events at which—
- (1) not more than 500 people are in attendance; or
  - (2) there are no more than three participating aircraft; or
  - (3) the aircraft are in one formation.

### **91.705 Parachute-drop operations**

- (a) Each pilot performing a parachute-drop operation shall hold a parachute-drop rating issued under Part 61.
- (b) Each pilot performing a parachute-drop operation shall ensure that—
- (1) the aircraft performing the operation has a valid standard category airworthiness certificate; and
  - (2) the configuration of the aircraft is appropriate for the parachute-drop operation; and
  - (3) the aircraft has adequate interior room and satisfactory egress for the parachutists to be carried; and
  - (4) the aircraft cabin has no handles or fittings which could cause the inadvertent opening of a parachute in the aircraft or during egress by any parachutist; and
  - (5) suitable points on the aircraft are used for the attachment of static lines; and
  - (6) the aircraft flight manual authorises flight with a door removed, or open, in flight; and
  - (7) each person carried in the aircraft, other than persons engaged in parachute operations,—
    - (i) occupies a seat and fastens their safety belt during take-off and landing; and
    - (ii) wears an emergency or reserve parachute assembly; and
    - (iii) is trained in the use of the emergency or reserve parachute assembly; and

- (iv) is briefed on the general procedures to be followed in an aircraft emergency including the method to be used for exiting the aircraft; and
- (8) each person carried in the aircraft for the purpose of parachute operations—
  - (i) is not in a position in the aircraft that could hazard the safety of the aircraft or its occupants through inadvertent interference with the controls; and
  - (ii) is briefed on the general procedures to be followed in an aircraft emergency including the method to be used for exiting the aircraft.
- (c) A pilot performing a parachute-drop operation shall not permit a person to make a parachute descent from the aircraft, unless—
  - (1) the person or persons making the descent have provided the pilot with the details of the proposed descent prior to take-off; and
  - (2) the pilot is satisfied that each person's descent is—
    - (i) authorised by the holder of an aviation recreation organisation certificate issued under Part 149; or
    - (ii) approved by the Director.

### **91.707 Emergency parachute assemblies**

A pilot-in-command shall not allow a parachute assembly that is available for emergency use to be carried in an aircraft unless it—

- (1) meets the requirements of Appendix A.25; and
- (2) has been adequately protected from damage from any condition or substance that may be harmful to the materials from which the parachute assembly has been constructed; and
- (3) has been maintained in accordance with the manufacturer's instructions and packed within the preceding calendar year by—
  - (i) the holder of a parachute technician rating issued by a parachute organisation holding an aviation recreation organisation certificate issued under Part 149; or
  - (ii) the parachute manufacturer; or
  - (iii) a person otherwise approved by the Director; and

- (4) is accompanied by a packing card containing certification of serviceability by the person who maintained or packed the parachute.

### **91.709 Towing gliders**

- (a) No person shall tow a glider, or gliders in flight unless that person holds a glider tow rating issued under Part 61.
- (b) No person shall tow a glider, or gliders in flight unless—
  - (1) the aircraft used for towing is operated at airspeeds below the maximum airspeed specified for aero-tow in the glider flight manual; and
  - (2) the towing load does not exceed the maximum load specified in the aircraft flight manual; and
  - (3) that person has checked the operation of the tow hook of the aircraft to be used prior to flight; and
  - (4) that person uses the take-off, glider release, airspeed, and emergency signals established by a gliding organisation holding an aviation recreation organisation certificate under Part 149 for the pilots of tow aircraft and gliders; and
  - (5) the take-off distance to clear a 50 foot obstacle with the glider, or gliders in tow does not exceed 85% of the take-off run available; and
  - (6) the aircraft is capable of maintaining a rate of climb of at least 200 feet per minute at 1000 feet above the aerodrome with the glider, or gliders in tow.
- (c) No person shall operate an aircraft to tow a glider, or gliders in flight unless—
  - (1) the aircraft to be used is equipped with—
    - (i) a tow hook and attachment assembly; and
    - (ii) a pilot-activated quick-release capable of releasing the tow rope with loads of up to 450 kg in any direction on the tow hook; and
  - (2) the tow line to be used meets the requirements of Appendix A.26; and
  - (3) if more than one glider is being towed, the tow lines to be used are—
    - (i) one for each glider; and

- (ii) of a length that provides a distance of not less than 50 m between any glider and the towing aircraft; and
- (iii) of a length that provides a trailing separation of not less than 30 m between each glider; and
- (iv) attached to a single tow ring to the aircraft, and capable of separation on release from the aircraft.

**91.711 Towing objects other than gliders**

- (a) No pilot shall tow an object other than a glider in flight unless—
- (1) they hold—
    - (i) a private pilot licence and a tow rating issued under Part 61; or
    - (ii) a commercial pilot licence issued under Part 61; or
    - (iii) an airline transport pilot licence issued under Part 61; and
  - (2) the aircraft—
    - (i) is equipped with a tow hook and attachment assembly which has a quick release mechanism; and
    - (ii) has a positive rate of climb at the altitudes to be operated.
- (b) No pilot operating an aircraft that is towing an object other than a glider shall carry any passengers.

**Subpart I — Foreign Registered Aircraft Operations and Operation of NZ Registered Aircraft Outside New Zealand**

**91.751 Applicability**

This Subpart applies to the operation of New Zealand registered aircraft outside New Zealand and the operation of foreign registered aircraft within New Zealand.

**91.753 Operations of New Zealand registered aircraft outside New Zealand**

Each person operating a New Zealand registered aircraft shall—

- (1) when over the high seas, comply with Annex 2 to the Convention on International Civil Aviation; and

- (2) when operating within a foreign State, comply with the operating and flight rules of that State; and
- (3) comply with this Part, so far as it is not inconsistent with applicable rules of the foreign country where the aircraft is being operated, or Annex 2 to the Convention.

**91.755 Special rules for foreign aircraft operations**

(a) **General.** In addition to the other applicable rules of this Part, each person operating a foreign registered aircraft within New Zealand shall comply with this rule.

(b) **VFR.** No person shall conduct an operation under VFR that requires two-way radio communications under this Part unless at least one flight crew member on that aircraft is able to conduct two-way radio communications in the English language and is on duty during that operation.

(c) **IFR.** No person shall operate under IFR unless—

- (1) that aircraft is equipped with—
  - (i) radio equipment allowing two-way radio communications with ATS when the aircraft is being operated in controlled airspace; and
  - (ii) a navigation system which will enable the aircraft to proceed in accordance with its flight plan; and
- (2) each person piloting the aircraft—
  - (i) holds a current New Zealand instrument rating, or holds a current instrument rating issued by the country of that aircraft's registry; and
  - (ii) is familiar with the New Zealand IFR en route, holding, and approach procedures prescribed in Part 97; and
- (3) at least one flight crew member of that aircraft is able to conduct two-way radio telephone communications in the English language and that flight crew member is on duty while the aircraft is operating under IFR.

*[Until Part 97 comes into force, IFR en route, holding, and approach procedures are designated under Part 19]*

## Subpart J — Operating Noise Limits

### 91.801 *Applicability*

This Subpart prescribes operating noise limits that apply to the operation of civil aircraft in New Zealand.

### 91.803 *Noise level compliance*

No person shall operate a subsonic turbo-jet aircraft of more than 34 044 kg MCTOW to or from any aerodrome within New Zealand after 31 March 2002 unless that aircraft has been—

- (1) certificated under Part 36 to Stage 3 noise levels prescribed in that Part; or
- (2) certificated by another State to the equivalent specification for Stage 3 noise levels that is acceptable to the Director.

*[Until Part 36 comes into force the noise certification requirements are specified in Part 19]*

### 91.805 *Aircraft sonic boom*

(a) No person shall operate an aircraft at a Mach number greater than 1 unless approved by the Director and in compliance with any conditions and limitations specified in the approval.

(b) No person shall operate an aircraft for which the maximum operating speed exceeds a Mach number of 1, unless information available to the pilot-in-command includes flight limitations that ensure that flights entering or leaving New Zealand will not cause a sonic boom to reach the surface within New Zealand.

(c) Each pilot-in-command of an aircraft for which the maximum operating speed exceeds a Mach number of 1 shall comply with the flight limitations prescribed in paragraph (b).

## Appendix A —Instrument and Equipment Specifications

Instruments and equipment required by Subpart F shall meet the following specifications and requirements:

### A.1 *Markings and placards*

(a) Each marking and placard shall be displayed in a conspicuous place and in such a manner to minimise the risk of erasure, disfigurement, obscuring, or removal.

(b) Each unit of measure used on a marking or placard shall be the same as that on any related instrument or in the related flight manual.

### **A.2 Fuel and oil markings**

(a) **Fuel contents gauge.** Each fuel contents gauge calibrated in US gallons shall be clearly marked to show that the calibration is in US gallons.

(b) **Fuel and oil placards.** Each aircraft shall be placarded in the immediate vicinity of each fuel and oil filler with the specification and/or grade of fuel or oil as appropriate.

### **A.3 Seating**

(a) Each seat and berth shall meet the requirements of TSO C25 or TSO C39 as applicable.

### **A.4 Restraints**

(a) Each safety belt shall meet the requirements of TSO C22.

(b) Each torso restraint shall meet the requirements of TSO C114.

(c) If a shoulder harness is fitted with an inertia reel, the inertia reel shall meet the requirements of US Military Specification MIL-R-8236.

### **A.5 Child restraint systems**

A child restraint system shall—

- (1) be secured to the aircraft seat or berth by a safety belt meeting the requirements of TSO C22; and
- (2) not be fitted with a tether strap that secures the top of the infant or child seat; and
- (3) meet the requirements of—
  - (i) New Zealand Standard 5411; or
  - (ii) Australian Standard 1754; or
  - (iii) United States Standard FMVSS 213; or
  - (iv) European Standard ECE 44.

### **A.6 Aircraft lights**

- (a) Each aircraft anticollision light system shall comprise—
- (1) a red rotating beacon; or



- (2) an aviation red or aviation white capacitor discharge light that meets the requirements of—
  - (i) TSO C96; or
  - (ii) the minimum standards of the applicable aircraft design; or
  - (iii) another standard acceptable to the Director.
- (b) For aircraft type certificated before 11 August 1971 the anticollision light system shall meet the requirements of FAR Part 23, 25, 27, or 29 as applicable, except that the colour may be either aviation red or aviation white.
- (c) Each aircraft position light shall meet the requirements of TSO C30.

#### **A.7 Aircraft flying time recorders**

Aircraft flying time recorders shall meet the requirements of any standard acceptable to the Director.

#### **A.8 Pressure altimeters**

(a) For pressurised aircraft to be operated at altitudes above 25 000 feet, each sensitive pressure altimeter shall—

- (1) for a MCTOW not exceeding 5700 kg, be—
    - (i) a counter/pointer or drum pointer altimeter at the normal pilot-in-command position; and
    - (ii) a counter/pointer, drum pointer, or three pointer altimeter at other crew stations; or
  - (2) for a MCTOW exceeding 5700 kg, be—
    - (i) a counter/pointer type at the normal pilot-in-command position; and
    - (ii) either a counter/pointer or drum/pointer type at other crew stations.
- (b) For aircraft to be operated IFR at altitudes not above 25 000 feet, each sensitive pressure altimeter shall be counter/pointer, drum/pointer, or three pointer type.
- (c) Each three pointer altimeter shall have a striped low altitude warning sector that is fully displayed at all altitudes up to 10 000 ft and progressively withdrawn above that altitude and either—
- (1) a 10 000 ft pointer that cannot be obscured by any other pointers; or
  - (2) a concentric track indicating 10 000 ft intervals; or

- (3) a combination of subparagraphs (1) and (2).
- (d) Each sensitive pressure altimeter shall—
  - (1) meet the requirements of—
    - (i) TSO C10; or
    - (ii) British Standards G115, G201, or G226; or
  - (2) be adjustable for barometric pressure in hectoPascals or millibars and be presented so as to enable altitudes to be easily read to within 20 ft.
- (e) Aircraft not required to be fitted with a sensitive pressure altimeter shall be fitted with an altimeter calibrated in increments of not more than 200 ft.

### **A.9 Communication and navigation equipment**

- (a) Radio communication and navigation equipment shall meet the requirements of—
  - (1) for Level 1—
    - (i) communication equipment, one of the following TSO as applicable: C31, C32, C37, or C38; or
    - (ii) navigation equipment, one of the following TSO as applicable: C40, C41, C60, or C94; or
    - (iii) British Civil Aviation Publication (CAP) 208 Class WR, VC, or LA I; or
  - (2) for Level 2 CAP 208 Class LA II; or
  - (3) for Level 3 CAP 208 Class LA III or G; or
  - (4) for Level 4—
    - (i) the requirements of the Radio-communications (Radio) Regulations 1993; and
    - (ii) compass safe distances determined in accordance with British Standard 3G,100: Part 2, Section 2.
- (b) Where two independent radio communication systems are required—
  - (1) each system shall have an independent antenna; or
  - (2) the two systems may use a single rigidly supported non-wire antenna.

### A.10 RNP, MNPS, and VSM equipment

Navigation systems and equipment installed for operation in RNP, MNPS or VSM airspace shall meet—

- (1) the performance requirements of ICAO Regional Supplementary Procedures Doc 7030 applicable to the airspace and routes being flown; and
- (2) the equipment and functional requirements—
  - (i) for operation in RNP airspace, contained in the ICAO Manual on Required Navigation Performance (RNP) Doc 9613; or
  - (ii) for operation in airspace designated with a VSM of 1000 feet above flight level 290, contained in the ICAO Manual on Implementation of a 300M (1000ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive Doc 9574.

### A.11 Category II and III equipment

(a) ILS localiser and glide slope equipment shall meet the requirements of Radio Technical Commission for Aeronautics (RTCA) document number DO-117.

(b) Each flight control guidance system shall meet the performance requirements of an evaluation programme.

(c) Each radio altimeter shall—

- (1) display to the flight crew the wheel height of the main landing gear above the terrain to an accuracy of plus or minus 5 ft or 5%, whichever is greater, when the—
  - (i) pitch angle is plus or minus 5 degrees about the mean approach attitude; and
  - (ii) roll angle is 20 degrees in either direction; and
  - (iii) forward velocity is between the minimum approach speed and 200 knots; and
  - (iv) sink rate is not greater than 15 ft per second at altitudes from 100 ft to 200 ft; and
  - (v) over level ground track actual altitude without significant lag or oscillation; and
- (2) when the aircraft is below 200 ft altitude and a change in terrain representing 10% of the aircraft's altitude occurs—

- (i) not unlock; and
  - (ii) have its display respond within 0.1 seconds; and
  - (iii) if the radar altimeter unlocks, re-acquire the signal in less than 1 second; and
- (3) if using a push to test feature, test the entire system at a simulated altitude of less than 500 ft; and
- (4) incorporate a positive failure warning any time there is a power loss or absence of ground return signals within the desired range of operating altitudes.
- (d) Other required instruments and equipment shall be capable of performing the necessary Category II or III operations as listed in the operator's manual required by 91.417.

#### **A.12 First aid kits**

Each first aid kit shall—

- (1) be placed in a container that—
  - (i) minimises the risk of theft or deterioration of the contents; and
  - (ii) ensures that any theft may be readily detected; and
- (2) be located and secured in such a manner that—
  - (i) the possibility of damage or loss as the result of an accident is minimised; and
  - (ii) there is no danger to the occupants of the aircraft; and
- (3) have its location marked—
  - (i) on the outside of any compartment containing the kit; and
  - (ii) for aircraft that do not exceed 5700 kg MCTOW, on the outside of the aircraft; and
- (4) when containing narcotics, be installed in an aircraft—
  - (i) in accordance with regulation 28 of the Misuse of Drugs Regulations 1977; and

- (ii) that when not in use can be locked, or placed in a lockable hangar, or have the first aid kit containing narcotics removed to a safe and secure location.

*Liferafts shall be considered to be safe and secure locations for the storage of first aid kits containing narcotics.*

### **A.13 Fire extinguishers**

Each fire extinguisher shall—

- (1) be installed and secured in such a manner that it will not interfere with the safe operation of the aircraft or adversely affect the safety of crew or passengers; and
- (2) subject to subparagraph (4), be of a type and quantity of extinguishing agent suitable for the kinds of fires likely to occur in the compartment where the fire extinguisher is intended to be used; and
- (3) minimise the hazards of toxic gas concentrations; and
- (4) contain as an extinguishing agent only—
  - (i) bromochlorodifluoromethane (halon 1211); or
  - (ii) bromotrifluoromethane (halon 1301); or
  - (iii) carbon dioxide; or
  - (iv) dry powder; or
  - (v) another agent that provides an equivalent extinguishing action.

### **A.14 Emergency equipment**

- (a) Each life preserver shall meet the requirements of TSO C13.
- (b) Each liferaft shall meet the requirements of TSO C70 and contain a survival kit.
- (c) Each survival kit shall include—
  - (1) one canopy; and
  - (2) one radar reflector; and
  - (3) one liferaft repair kit; and
  - (4) one bailing bucket; and
  - (5) one signalling mirror; and

- (6) one whistle; and
  - (7) one raft knife; and
  - (8) one compressed gas bottle for emergency inflation; and
  - (9) one inflation pump; and
  - (10) one 25 m retaining line; and
  - (11) one magnetic compass; and
  - (12) one dye marker; and
  - (13) one flashlight having at least two 'D' cells or equivalent; and
  - (14) one fishing kit; and
  - (15) two oars or two glove paddles; and
  - (16) a two day supply of food rations supplying at least 1000 calories per day for each person the raft is rated to carry; and
  - (17) 1200 mls of water for each two persons the raft is rated to carry or one sea water desalting kit; and
  - (18) one first aid kit suitable for treatment of minor injuries; and
  - (19) one book on survival appropriate for the area over which the aircraft is operated.
- (d) Each survival locator light shall meet the requirements of TSO C85.

#### **A.15 Emergency locator transmitters**

- (a) Except as provided in paragraph (j), each ELT shall meet the requirements of—
- (1) TSO C91a for transmitting on 121.5 Mhz;
  - (2) TSO C126 for transmitting on 406 Mhz.
- (b) Each ELT shall be attached to the aircraft in such a manner that—
- (1) the probability of damage in the event of an accident or impact is minimised; and
  - (2) mounting is to primary load-carrying structure but does not degrade the aircraft structural capability; and
  - (3) a force of 450 newtons applied to the mount in the most flexible direction will not cause a static deflection greater than 2.5 mm

- relative to a section of adjacent structure located between 0.3 m and 1.0 m from the mount site; and
- (4) the transmitter and any external antenna can support a 100 g load in the plus and minus directions of the three principle axis of the aircraft; and
  - (5) the transmitter and any external antenna are as close to each other as possible; and
  - (6) for fixed and deployable automatic type transmitters, the ELT is as far aft as possible.
- (c) Each ELT shall have its crash activation sensor—
- (1) located to prevent inadvertent operation; and
  - (2) axis orientated to sense a primary crash pulse along the longitudinal axis of the aircraft.
- (d) Each ELT shall have its antenna mounted—
- (1) to provide vertical polarisation with the aircraft in normal flight; and
  - (2) for an external antenna, no closer than 0.6 m from any other VHF aerial unless specified by the manufacturer; and
  - (3) for an internal antenna, exposed to a window at least 0.3 m square and insulated from metal parts.
- (e) Each ELT shall be fitted with vibration proof RF connectors on each end of the transmitter-antenna coaxial cable; and
- (f) Each ELT shall have its location identified near the point of access.
- (g) Each ELT(S) and EPIRB shall—
- (1) be self buoyant; and
  - (2) be water resistant; and
  - (3) be portable.
- (h) Each ELT(S) shall meet the requirements of TSO C91a.
- (i) Each EPIRB shall meet the requirements of Australian/New Zealand Standard AS/NZS 4330:1995.
- (j) Each ELT or ELT(S) installed prior to the coming into force of this rule shall—
- (1) meet the requirements of TSO C91 or TSO C91a; and

- (2) when the ELT or ELT(S) becomes unserviceable, replace it with an ELT meeting the requirements of TSO C91a.
- (k) For the purposes of paragraph (j)(2), an ELT or ELT(S) shall not be considered unserviceable when performing the maintenance required by 91.615.

### **A.16 Oxygen**

Oxygen used in aircraft shall be of Aviation Oxygen Standard which is gaseous oxygen with a minimum purity of 99%, maximum moisture of 0.0056 grams per cubic metre, and nil carbon monoxide.

### **A.17 Passenger oxygen masks**

Each passenger oxygen mask shall meet the requirements of TSO C64.

### **A.18 Crew member on-demand oxygen masks**

- (a) Each crew member on-demand oxygen mask shall meet the requirements of TSO C78.
- (b) Each on-demand mask for flight crew members shall, without causing undue delay in proceeding with emergency duties, be capable of—
- (1) being placed on the face with one hand from the stowed position, and
  - (2) properly secured, sealed, and supplying oxygen upon demand within five seconds; and
  - (3) providing for—
    - (i) the use of corrective eyeglasses without undue impairment of vision or loss of protection; and
    - (ii) communication by interphone with each flight crew member while in their normally seated position; and
    - (iii) communication between each of two flight crew member stations and at least one crew member station in each passenger compartment.

### **A.19 Oxygen equipment**

- (a) Flight crew member oxygen equipment shall provide an oxygen flow rate—
- (1) for continuous flow equipment, that is the greater of—
    - (i) 2 litres per minute STPD; or



- (ii) that which will maintain a MTOPP of 149 mm Hg when breathing 15 litres per minute BTPS with a tidal volume of 700 millilitres; and
  - (2) for on-demand equipment—
    - (i) up to 35 000 feet, not less than that which will maintain a MTOPP of 122 mm Hg; and
    - (ii) above 35 000 feet, not less than 20 litres per minute BTPS; and
    - (iii) above 41 000 feet, that progressively increases until not less than 15 mm Hg above ambient pressure and 30 litres per minute BTPS is achieved at 45 000 feet; and
  - (3) for protective equipment, of 30 litres per minute BTPD at a pressure altitude of 8 000 feet.
- (b) Crew member and passenger oxygen equipment shall provide an oxygen flow rate of—
- (1) from 10 000 feet to 18 500 feet, not less than that which will maintain a MTOPP of 100 mm Hg when breathing 15 litres per minute BTPS with a tidal volume of 700 millilitres; and
  - (2) from 18 500 feet to 40 000 feet, not less than that which will maintain a MTOPP of 83.8 mm Hg when breathing 30 litres per minute BTPS with a tidal volume of 1100 millilitres; and
  - (3) from 40 000 feet to 45 000 feet, not less than that which will maintain a MTOPP of 55 mm Hg when breathing 30 litres per minute BTPS with a tidal volume of 1100 millilitres.
- (c) Portable oxygen equipment shall provide an oxygen flow rate of not less than—
- (i) 2 litres per minute STPD on a low setting; and
  - (ii) 4 litres per minute STPD on a high setting.
- (d) On-demand oxygen regulators shall meet the requirements of TSO 89.

## **A.20 Protective breathing equipment**

Protective breathing equipment shall—

- (1) meet the requirements of TSO C99; and
- (2) protect users from the effects of—
  - (i) smoke; or

- (ii) carbon dioxide; or
- (iii) other harmful gases; or
- (iv) an oxygen deficient environment caused by other than aeroplane depressurisation.

#### **A.21 Crew member portable protective breathing equipment**

(a) Except as provided in paragraph (b), crew member portable protective breathing equipment shall meet the requirements of TSO C116.

(b) Crew member portable protective breathing equipment may consist of a portable oxygen supply connected to protective breathing equipment that allows unrestricted performance of crew member duties.

#### **A.22 Transponder equipment**

Each SSR transponder shall meet—

- (1) the requirements of TSO C74c; or
- (2) for Mode S capable equipment, the appropriate class of TSO C112.

#### **A.23 Altitude encoder equipment**

(a) Each pressure actuated sensitive type altimeter shall meet the requirements of TSO C10.

(b) Each altitude encoder shall meet the requirements of TSO C88.

#### **A.24 Altitude alerting system or device**

For operation below 3000 feet AGL, the altitude alerting system or device need only provide one signal, either visual or aural.

#### **A.25 Parachute assembly for emergency use**

A parachute assembly for emergency use shall meet the requirements of—

- (1) an applicable type certificate; or
- (2) TSO C23; or
- (3) a military drawing and order number or any other military designation or specification number.

#### **A.26 Glider tow lines**

Glider tow lines shall—

## CONSULTATION DETAILS

(This statement does not form part of the rules contained in Part 91.  
It provides details of the consultation undertaken in making the rules.)

### Background to the Rules

In April 1988 the Swedavia-McGregor Report on civil aviation regulation in New Zealand was completed. Following the recommendations contained in that report, the Civil Aviation Authority (CAA) (formerly the Air Transport Division of the Ministry of Transport) commenced a complete review of all existing civil aviation legislation. The existing legislation that is still appropriate is being rewritten into the new *Rules* format. New legislation is being generated where necessary for the areas not presently covered.

Considerable research was carried out to determine the format for the new legislation. It was decided that the legislative framework should incorporate the advantages of the regulatory system of the Federal Aviation Administration (FAA) of United States of America and the system being developed by the European Joint Aviation Authorities and published as Joint Aviation Requirements (JAR).

The new rules are structured in a manner similar to the Federal Aviation Regulations (FAR) of the FAA, and aim to achieve maximum harmonisation whilst allowing for national variations. Close co-operation is also being maintained with the Civil Aviation Safety Authority of Australia to ensure maximum harmonisation with their regulatory code.

New Zealand's revised legislation is published as Civil Aviation Rules (CAR) which is divided into Parts. Each Part contains a series of individual rules which relate to a particular aviation activity.

Accompanying most Parts will be at least one associated Advisory Circular (AC) which will expand, in an informative way, specific requirements of the Part and acceptable means of compliance. For instance an AC may contain examples of acceptable practices or procedures which would meet the requirements of a particular rule.

The CAR numbering system is based on the FAR system. As a general principle the subject matter of a rule Part will be the same or similar to the FAR although the title may differ to suit New Zealand terminology. Where a CAR Part does not readily equate with a FAR number code, a number has been selected that does not conflict with any existing FAR Part.

The objective of the new rules system is to strike a balance of responsibility between the State authority and those who provide services and exercise privileges in the civil aviation system. This balance must enable the State authority to set standards for, and monitor performance of, aviation participants

whilst providing the maximum flexibility for the participants to develop their own means of compliance.

Section 12 of the Civil Aviation Act 1990 requires participants in the aviation system to carry out their activities safely and in accordance with the relevant prescribed safety standards and practices. Section 28 of the Act allows the Minister to make ordinary rules prescribing general operating rules, air traffic rules and flight rules.

### **Notice of Proposed Rule Making**

To provide public notice of, and opportunity for comment on the proposed new rules, the Authority, on 25 November 1992 issued Notice of Proposed Rule Making 95-12 under Docket Number 1076 on 20 December 1995. This Notice proposed the introduction of Civil Aviation Rules Part 91 to establish General Operating and Flight Rules.

### **Supplementary Information**

All comments made on the Notice of Proposed Rule Making are available in the rules docket for examination by interested persons. A report summarising each substantive contact with the Civil Aviation Authority contact person concerning this rule making has been filed in the docket.

### **Availability of the Document**

Any person may view a copy of these rules at Aviation House, 1 Market Grove, Lower Hutt. Copies may be obtained from Publishing Solutions Ltd, PO Box 983, Wellington 6015, Telephone 0800 800 359.

### **Summary of Comments on Docket Number 1076 NPRM**

#### **1. General comments on the NPRM**

A total of 91 submissions were received, out of which 34 submissions expressed support of the comments submitted by the Helicopter Division of the Aviation Industry Association. From the 91 submissions received, 10 general issues were raised. These are discussed as follows:

**1.1** One commenter stated that Subpart D – Instruments and Equipment Requirements is a radical departure from FAR Subpart D – Large and Turbine Multi-Engine Aeroplanes. The subpart should be completely reconsidered in that context, and any airworthiness items transferred to applicable Parts or other items to Subpart B – Operating Rules.

**CAA response:** The CAA does not consider that an equivalent to the FAR Subpart D – Large and Turbine Multi-Engine Aeroplanes is required in CAR Part 91. There are not, nor is it anticipated that there will be, a significant number of such aircraft operating solely under Part 91 as is the case in the United States.

The significant items for these aircraft have been incorporated in Subpart F – Instrument and Equipment Requirements and are readily identified by the weight or passenger criteria for some items.

**1.2** Three commenters stated that there should be a rule in Part 91 addressing emergency flights.

**CAA response:** Emergency flights are now dealt with by section 13A of the Civil Aviation Act as inserted by the Civil Aviation Amendment Act 1996. This provision was inserted in response to submissions made by the Aviation Industry Association to the Select Committee for Transport considering the Civil Aviation Law Reform Bill 1996.

The new section 13A clarifies the law regarding both in flight emergencies and flights made in response to emergencies. Section 13A specifies the types of requirements that may not be dispensed with in an emergency situation. Section 13A also makes clear that the operator has responsibilities as well as the pilot in command for compliance with certain core requirements in emergency situations. The Civil Aviation Amendment Act came into force on 13 August 1996.

**1.3** One commenter stated that Part 91 should make provision for the Director to exempt the holder of an air operator certificate from any requirement in the Part.

**1.4** One commenter noted that the majority of operating rules have paragraphs in which provision is made for the application of exemptions from the requirements of the rules. They considered that, for consistency, Part 91 should have a similar provision.

**CAA response:** The CAA disagrees with comments 1.3 and 1.4 as the inclusion of such a provision signifies that exemptions are readily available. This is not the case in Part 91 though it does not preclude petitions for exemptions in accordance with Part 11.

**1.5** One commenter noted that the informal draft of Part 91 included Temporary Restricted Areas. The provision is consistent with FAR Part 91 and is appropriate for adoption in New Zealand particularly with the increase in electronic news gathering.

**CAA response:** The CAA considered that designation of Temporary Restricted Areas are best placed in Part 73 Special Use Airspace rather than in Part 91. Parts 71 and 73 are the rules covering all designation of airspace in the New Zealand system.

**1.6** One commenter referred to CAR Part 26, which, while dealt with separately, can't be disregarded in the context of Part 91. Part 26 is purported to deal with occupant safety and takes from Part 91 some items included in the

informal draft. This commenter is totally opposed to separating out of basic safety requirements where they need to be specified.

One commenter considered that the information contained in Appendix A should be contained in CAR Part 21 as, again, they are means of compliance.

**CAA response:** The instruments and equipment are structured in terms of aircraft certification requirements prescribed in Parts 21 and 26 whereas the operating rules such as Part 91 prescribe the operational requirement that the operator determines on the basis of the type of operation the aircraft is conducting. The CAA agrees with the commenter and the basic safety requirements, such as first aid kits, are now placed in Part 91.

1.7 One commenter suggested that Subpart C should be further divided into three subparts titled Flight Rules, Visual Flight Rules and Instrument Flight Rules. If this is adopted they suggest that Subpart B be renamed as General Operating Rules.

**CAA response:** The CAA agrees and the final rule is so amended.

1.8 One commenter expressed concern that this NPRM continues the practice, apparent in a number of rules, of being too prescriptive and mixing rule requirements with information on how compliance with the rule can be achieved. A number of 91 rules are cited as examples of rules which should be incorporated in an Advisory Circular as information on rule compliance. On the other hand one of the rules is already promulgated in the Aeronautical Information Publication (AIP) and the requirement to state it in a rule is questioned.

**CAA response:** The CAA does not agree and the other commenters do not agree that the rules are too prescriptive and mix rule requirements with means of compliance. The commenter makes reference to rules in the AIP. Such rules were made under the authority of the Civil Aviation Regulations 1953. In future there will be no rules prescribed in the AIP. The AIP will repeat some Part 91 flight rules, in some cases in a friendly diagrammatic format, and otherwise it in essence it will serve as an Advisory Circular for Part 91.

1.9 One commenter noted that the rule referred to CAR Part 73 and expressed concern that Part 73 or 71 have not being promulgated for consultation. On this basis the commenter considered that Part 91 should not progress as a final rule until Parts 71 and 73 are available for consideration.

**CAA response:** The CAA disagrees in that Parts 73 and 71 will designate airspace as presently designated under the Civil Aviation Regulations 1953 and any proposed changes will be processed in accordance with Part 11.

1.10 One commenter stated that the matter of continuation of glider "trial instructional flights" has not been resolved in terms of rulemaking. The

commenter considers that it is not appropriate for Part 91 to progress to the final rule stage before Part 91 or another rule part addresses the issue.

**CAA response:** The CAA does not agree. The issue of "trial instructional flights" is not dependant on Part 91. The resolution of this issue lies with the determination of whether such flights are for hire or reward and consequently which rules are applicable to them. The operations referred to by this commenter and other similar operations for hire or reward will be dealt with in Part 119, Air Operator Certification, or in Part 115, Adventure Aviation - Certification and Operations.

**1.11** One commenter suggested that Part 91 should prescribe the requirements for IFR operations at unattended aerodromes and off evaluated routes. With GPS making it possible for nearly every aerodrome to have IFR procedures, it may be impractical to continue to establish Instrument Approach Restricted Areas. At non-controlled aerodromes served by an instrument approach, a higher meteorological minima could be required for VFR NORDO operations. Operating at meteorological conditions below 1000 feet cloud base and 5 kilometres visibility could require all aircraft to have serviceable radios. This would need to be covered in 91.147 and 91.157. In addition all topographical charts, the final approach tracks of all instrument approaches could be published to provide VFR pilots additional awareness of IFR procedures.

**CAA response:** This is a matter for resolution in CAR Part 73 Special Use Airspace and the resolution may require amendment to Part 91 as suggested.

## **2. Specific comments on the NPRM**

Specific comments received from the Part 91 submissions are discussed as follows:

### **2.1 91.1 Applicability [Final rule 91.1]**

The New Zealand Parachute Federation commented that, it was not clear that Part 91 didn't apply to persons carrying out parachute descents. They suggested that paragraph (b) should include "persons carrying out parachute descents in accordance with Part 105".

**CAA response:** The CAA agrees with the commenter and has made amendments to clarify that the rule does not apply to persons carrying out parachute descents.

### **2.2 91.3 Definitions**

Four commenters stated that the definition of "Fully functioning dual controls" should include helicopters and suggested words that could be used.

### 2.3 91.5 Cost Sharing [Final rule definition of *cost sharing* and *air transport operation*]

Several commenters considered that a number of operations, the likes of ferry or test flights, trial flights, and flight training, should be included in this rule.

**CAA response:** The purpose of this rule is clarify that some types of flights, which may have an element of hire or reward and thus considered to be air transport operations are deemed not to be so. The CAA does not consider that the types of flights referred to by the commenter fall into this category. As this rule is related to the definition of air transport operations it has been reshaped as a definition of the term *cost sharing flight* which term is included as one of the exceptions in the definition of the term *air transport operation*.

One commenter suggested that the word "equally" should be removed in paragraph (a)(1)(iii).

**CAA response:** The CAA disagrees as the inclusion of this term ensures that they are bone fide cost sharing flights. The removal of this word could mean that the pilot does not need to contribute to the cost and as such the flight could be deemed to be an air transport operation.

The New Zealand Parachute Federation considered that either add an exemption for persons operating aircraft for the carriage of parachutists to altitude for the purposes of parachuting in compliance with CAR Part 105, or transfer all such definitions to the one place in CAR Part 119.

**CAA response:** The CAA agrees and this rule is now a definition in Part 1 and incorporated into Part 119 partly in response to this comment and on the basis that it assists in defining what is, and is not, an air transport operation.

### 2.4 91.7 Compliance with signs, placards and crew instructions [Final rule 91.5]

One commenter suggested an amendment to paragraph (2) inserting the words "...if installed, correctly about.....and keep it fastened correctly unless...."

**CAA response:** The CAA does not agree as the proposed amendment is superfluous and does not add value to the intent of the rule.

One commenter suggested an amendment in accordance with the sense evident in other Part 91 rules to a negative statement.

**CAA response:** The CAA does not agree and the word "shall" is used in this and other rules as an imperative for compliance.



## 2.5 91.9 Portable electronic devices [Final rule 91.7]

One commenter considered that the rule should permit the use of some portable electronic devices in addition to those exempted when identified as safe by the industry.

One commenter stated that this draft rule is totally inconsistent with the equivalent rule in FAR Part 91. The same commenter considered that paragraph (c) should be deleted in total and replaced by a simple statement that any portable electronic device may be used provided that the operator has determined it will not cause interference.

One commenter stated that the rule is an overreaction that is currently the subject of industry study. They currently permit their use after take-off but the devices are turned off prior to landing. This practice is consistent with the policies of other international carriers and seems to work well. If CAA wish to control use of portable electronic devices then a more flexible mechanism than a permanent rule needs to be found. The rule as written would impose a significant commercial disadvantage.

**CAA response:** CAA has given due consideration to these comments but has adopted a rule based on the latest information derived from research conducted overseas (RTA). The requirements of this rule will minimise the effect of portable electronic devices and is similar to the requirements being adopted by other States.

## 2.6 91.11 Carriage and discharge of firearms [Final rule 91.9]

One commenter requested that the limitation of paragraph (b)(3)(iii) regarding discharge of firearms at night be removed. Most aerial shooting operations are carried out in the late evening or early morning, the NPRM, as written, would preclude some of this work and make many existing operations illegal. We do not believe that this is an issue affecting aviation safety.

The requirements of the Arms Act for a shooter to positively identify the target will cover the situation. The advent of modern night vision systems and sights make target identification and definition much easier. If a helicopter is appropriately equipped for night operations, and the pilot is appropriately rated for night flying then it should be up to the operator to carry out any shooting operations in accordance with the requirements of the Arms Act.

**CAA response:** CAA agrees and has removed the night prohibition.

One commenter stated that they have special procedures in place currently to allow diplomatic protection squad members to carry firearms on domestic sectors. The personnel are approved by the Director. The new rule doesn't refer to such a process. Could the current practice be reviewed to see if it needs amplification in the rule.

**CAA response:** The requirements regarding carriage of firearms on air transport operations have been relocated to Parts 121 and 135. These rules now permit persons lawfully entitled to carry firearms in the course of their duties to do so providing they are authorised by the Director in accordance with rule 19.301.

## **2.7 91.51 Aircraft airworthiness [Final rule 91.101]**

Two commenters stated that all reference to aircraft logbooks should be deleted in paragraph (b)(1) and insert appropriate references to approved manuals. Not all operators carry a logbook on board aircraft. Other documents, currently acceptable to the Director constitute part of the aircraft logbook, for example technical/maintenance logs.

**CAA response:** CAA agrees and has removed the reference to a log book.

One commenter considered that paragraph (b) should also apply to aircraft ferry flight for renewal of its airworthiness certificate in paragraph (b)(1). The same commenter noted that paragraph (b)(1) states "fit for flight" and asks by whom.

**CAA response:** CAA does not agree as a special flight permit is required to ferry an aircraft in this condition. The rule has been amended to clarify who is entitled to certify an aircraft fit for flight.

## **2.8 91.55 Aircraft flight manual [Final rule 91.109]**

One commenter stated that the rule assumes all aircraft will have a flight manual but notes that 91.121 recognises that all aircraft may not have a flight manual.

**CAA response:** In terms of Part 91, all aircraft are required to have a flight manual. If there are exceptions to this requirement, they are to be found in the appropriate operating rule as an exception to this rule.

One commenter asks "whose flight manual"? This goes back to the provisions of Part 21, but does an operator have the right to get special provisions approved?

**CAA response:** The definition of aircraft flight manual has been amended to clarify that the aircraft flight manual is that specified in the airworthiness certificate issued under Part 21, Subpart H. Approval of changes to the flight manual are dealt with in Part 21.

One commenter suggested that this rule be amended to reflect the intent, as outlined in the preamble to this NPRM, that Part 91 is pivotal legislation, but able to be modified by other Parts for specific types of operation. It is suggested that after word "manual" the following be added "or such limitations as may be contained in other Parts specific to particular types of operation."

**CAA response:** The CAA does not agree that this is necessary and such a statement would be superfluous. The rules are logically structured to identify in

the applicable operational rule Part any exceptions or additional requirements to those specified in Part 91.

## 2.9 91.57 Aircraft maintenance and equipment

One commenter suggested that in paragraph (1), the words "in accordance with Part 43" be added. This will ensure maintenance has been carried out in accordance with the rules.

**CAA response:** This is not needed as this rule addresses the requirements in terms of aircraft operations whilst Part 43 addresses the specific maintenance requirements.

## 2.10 91.59 Documents to be carried [Final rule 91.111]

One commenter stated that the rule assumes all aircraft will have a flight manual but notes that 91.121 recognises that all aircraft may not have a flight manual.

**CAA response:** This issue has been addressed in response to a similar comment to 91.55.

Three commenters considered that the requirements to carry the technical log in the aircraft at all times should be removed.

One of the commenters stated that many operators have alternative methods of informing the pilot of the status of an aircraft. The requirement of 91.51(a)(2) will ensure airworthiness without an extra piece of paper to be carried in the aircraft. Carriage of the technical log is not a safety issue.

Another commenter stated that that they have an opinion that in private operations, such as our members are primarily involved with, has no need for the additional paper work of a technical log. Private aircraft in the large part are single or few pilot operated and most private owners are closely involved with the maintenance and operation of their aircraft. The inclusion of another "piece of paper" to satisfy the bureaucrats does nothing to improve the present state of knowledge, but instead increases the irritation level and therefor the chance for the overzealous inspector to pick minor holes in the operations of an aircraft. We are not convinced there is any significant gain to safety in this requirement in private operations that exist at present - just a significant loss from the irritation of yet another useless form to be completed.

The other commenter stated that the technical log is not required to be carried in the aircraft if the operator has other means of meeting the requirements of NZCAR F.6 - Paragraph 4. Therefore you will need to cover the exemptions as listed in F.6 4.3.

**CAA response:** This rule addresses the carriage of documents not the requirement to have a document. The requirements for a technical log are

contained in 91.281 and these comments are included in the CAA response to that rule.

One commenter suggested that the requirement should be for the documents to be carried in the aircraft during flight.

**CAA response:** The requirement is to carry the documents during aircraft operations and the term *flight* is too limiting.

### **2.11 91.63 Flight attendant requirements [Final rule 91.115]**

One commenter considered that the rule should be modified to reflect that one flight attendant per 50 passengers should be carried unless the aircraft flight manual requires a different figure.

**CAA response:** The CAA does not agree as aircraft flight manuals do not address the requirements for flight attendants.

One commenter recommended an amendment to say that "a flight attendant is not required to be carried in an aircraft below 10 886 kg MTOW with a single passenger compartment for not more than 27 passengers which is immediately adjacent to and accessible from, the flight crew stations.

**CAA response:** The CAA does not agree as the rule must address a safety standard applicable to all aircraft. This safety standard, as adopted internationally, requires flight attendants on any aircraft carrying 20 or more passengers. The exception provided under CASO 10 for the carriage of up to 23 passengers has been removed from this rule. A *grandfather* clause for the only aircraft types to which the CASO exception applied is included in the rule. In future, any exception to this rule will require the submission of a petition for an exemption from the rule as prescribed in Part 11.

One commenter noted that paragraph (a)(1) is inconsistent with rule 121.511(c)(3). They propose that the higher standard of one flight attendant for 16 to 24 passengers, and two flight attendants for 25 to 50 passengers be adopted.

One commenter noted that the requirements of this rule vary significantly from those stated in 121.511. The lack of consistency across two major Parts is cause for concern and suggest that greater care needs to be made in cross-checking the Parts and in providing explanation to the aviation industry.

**CAA response:** The CAA does not agree as the standard in this rule is for Part 91 operations. The commenters quite correctly refer to the higher standard required under Part 121 for air transport operations but there is no justification for applying the standards to Part 91, which primarily are operations that do not involve hire or reward.

One commenter opposes the inclusion of paragraph (b), submitting that it is impracticable to expect flight crew to be responsible for fully carrying out passenger safety functions on an aeroplane with up to 24 passengers. They recommend retention of the threshold of 19 passengers.

**CAA response:** The CAA agrees.

One commenter supports inclusion of paragraph (c) but submits that this provision should be strengthened by the addition of a requirement to read:

“has completed and been examined to the satisfaction of the person responsible for training in both written and practical safety exercises on the aircraft type.”

**CAA response:** The CAA does not agree that this requirement applies to Part 91 operations. This requirement is valid for air transport operations and as such is required under Parts 121 and 135. In reality with the exception of some aircraft operating exclusively under Part 91, most aircraft required to carry flight attendants are engaged in air transport operations and when being operated exclusively under Part 91 would carry the same trained and qualified flight attendants.

One commenter considered that an exception is required for aircraft carrying parachutists for the purpose of conducting parachute descents.

**CAA response:** CAA agrees and has added this exception in the rule.

## 2.12 91.65 Designation of pilot-in-command [Final rule 91.117]

One commenter stated that the wording of this rule is poor, and as a result is confusing. The rule should make a positive statement as to when a second-in-command is required.

One commenter stated that this rule should be modified to cover the situation of four-pilot crews with two captains with specific periods of duty. Some operators on international flights currently use this practice for safety reasons.

One commenter asks how “for the duration of the flight” would be applied to four-pilot crews with two captains with specific duty periods of duty.

**CAA response:** CAA agrees and has redrafted the rule to improve its readability and to take into account the situation of four-pilot crews.

One commenter stated that the words “when a flight is planned” should be deleted. Airlines plan their schedule months in advance and designating pilot-in-command would not be possible.

**CAA response:** The CAA does not agree as the planning in this rule does not relate to the planning of schedules. In the context of this rule the word planned is to require the operator to designate the pilot-in-command prior to every flight.

### 2.13 91.67 Alcohol and substances of abuse

This rule has been withdrawn at the request of the Ministry of Transport. It is intended that the standards be placed in primary legislation together with powers and procedures for enforcing the standards. In the interim regulation 56 of the Civil Aviation Regulations 1953 has been carried over into Part 19 Transition Rules.

### 2.14 91.71 Aircraft taxiing [Final rule 91.119]

One commenter suggested that it should include authorisation by "their approved agent as defined in the operator's exposition". This provision would allow persons and organisations nominated by the operator to authorise persons to taxi their aircraft. Another commenter stated that "authorised by the operator" might serve to hinder maintenance organisations. Could this be expanded to cover persons authorised by the maintenance organisation. The operator could ensure the maintenance firm has a procedure to determine who is competent to taxi their aircraft.

**CAA response:** CAA agrees to include persons authorised by a maintenance organisation. CAA does not agree to make reference to the "operator's exposition" as this is document is only required by the holder of an air operating certificate under Part 119.

One commenter stated that the requirement of paragraph (3) "have received instruction" raises the issue of who is competent to give instruction and does it require documentation and recurrence checking. The same commenter also suggested that paragraph (3) be amended to read "is familiar with the aerodrome layout...".

**CAA response:** CAA agrees and the rule now refers to being competent and to be familiar with the aerodrome layout.

One commenter stated that the Radio Communications Regulations 1993 required the user of a radio to be the holder of a Flight Radio Telephone Operator Certificate and the rule should recognise the requirement. The same commenter also considered that the requirement to "comply with ATC instructions if at a controlled aerodrome" should be added.

**CAA response:** The Radio Communication Regulations 1993 do not require each user of a radio to be the holder of a Flight Radio Telephone Operator Certificate and the requirement for competency in the use of a radio is correct in the context of this rule. There is no need to add the requirement to "comply with ATC instructions..." in the rule as it is included in paragraph (3).

### **2.15 91.73 Stowage of food, beverage, and passenger service equipment [Final rule 91.121]**

Two commenters stated that there should be no requirement for food trays to be in the stowed position for taxiing. This requirement should be for take-off and landing only.

**CAA response:** This is a standard requirement prescribed by most States and practised by New Zealand airline operators. There is a compelling safety reason to maintain the integrity of evacuation routes during taxiing as there is during take-off and landing.

One commenter suggested that the rule should include "each passenger seat or berth is in the specified configuration for take-off and landing, or taxiing, as applicable at the material time".

**CAA response:** CAA agrees and has included this requirement in the rule.

### **2.16 91.75 Flight instruction [Final rule 91.123]**

One commenter stated that, as the rule is applicable to helicopters, add the helicopter controls unless the definition of "fully functioning dual controls" is modified to include helicopter controls.

One commenter stated that, as written, the rule deals with a person rather than the aircraft and this is considered inappropriate. It also lacks any reference to rudder (yaw) control and in any case the control function should be used rather than the name of the control itself. Such terminology would cover the use of "elevons", for example, let alone terms for controls that have yet to be developed. The rule should be substituted and titled "aircraft suitability for flight instruction" and a draft rule is suggested.

**CAA response:** CAA agrees with the commenters and has adopted the suggested generic definition referring to pitch, roll and yaw rather than describe the control surfaces.

One commenter considered that another rule is required titled "Conduct of flight instruction". This provision in regard to flight instructor does not appear to be adequately covered anywhere else in the rule and was thought to be important enough to be included as a separate rule. Category A instructors are considered sufficiently qualified and experienced to be able to handle the flight instruction role in the lighter aircraft without the need for a specific type rating.

One commenter requested that the rule specify who, and the qualifications, for the person giving flight instruction.

**CAA response:** The qualification requirements for giving flight instruction are contained in Part 61. The purpose of this rule is to specify the requirement for dual controls which is not contained in Part 61.

One commenter stated that in their submission to the informal draft they raised the issue of aircraft that have two seats but only capable of being fitted with one set of flying controls, for example P-51 Mustang and some older agricultural aircraft. They request that this situation be given further consideration to allow instruction to be given in such aircraft for the purpose of gaining a type rating or gaining specific role experience related to the aircraft.

**CAA response:** Rather than provide an exception for such aircraft in Part 91, CAA considers that any exception should be addressed in Part 61 in terms of type ratings. This exception could be required for a number of other aircraft such as those used in agricultural operations and will be addressed in the review of Part 61.

One commenter suggested that paragraphs (1) and (2) should be combined and read "...is an aircraft equipped with flight and engine controls so arranged that these controls can be operated simultaneously from either crew station."

**CAA response:** CAA considered this suggestion but did not adopt it as the use of two separate paragraphs highlights the two different requirements.

One commenter stated that the rule does not address the possibility of dual instruction in flight for flight engineer station, nor does it take into account the critical systems operations required in some aircraft, notably large ones.

**CAA response:** The CAA doubts that there will be dual controls at flight engineer stations for the purpose of instruction and therefore has not included it in this rule.

#### **2.17 91.77 Simulated instrument flight [Final rule 91.125]**

One commenter stated that, as written, the rule deals with the person mainly rather than the aircraft and this is considered to be inappropriate. It also lacks any reference to rudder (yaw) control and in any case the control function should be used rather than the name of the control used. Such terminology would cover the case of "elevons", for example let alone terms that have yet to be invented. They suggest that the rule should be deleted and provide a draft replacement.

**CAA response:** CAA agrees and has adopted this terminology in the definition of "fully functioning dual controls".

One commenter stated that provision should be made for simulated instrument flight to be carried out with only one set of controls in situations where the flying pilot is able to rapidly remove the means of simulation. The availability of



simulated instrument flight should be maximised as the more flight practice a pilot has, the more prepared they will be when the skills are called upon in actual IMC conditions. By way of an explanation, one situation we see this provision working in is the case where an operator carries out a task and is returning to base. In a number of cases, particularly with helicopters, the role equipment installed prevents the installation of a second set of controls. Whilst a safety pilot is carried it is not legally possible to carry out simulated instrument flight, even though the safety pilot has adequate vision and the pilot flying can remove the simulation device rapidly.

**CAA response:** CAA agrees and has included this provision in the rule.

One commenter suggested that paragraphs (1) and (2) should be combined and read "...is an aircraft equipped with flight and engine controls so arranged that these controls can be operated simultaneously from either crew station."

**CAA response:** CAA considered this suggestion but did not adopt it as the use of two separate paragraphs highlights the two different requirements.

#### **2.18 91.70 Use of aerodromes [Final rule 91.127]**

One commenter stated that paragraph (a) should recognise that this rule covers operation at or in the vicinity of an aerodrome. As written it tends to infer operations of an aircraft in general when this clause concerns only one element of operation. The commenter recommends that paragraph (a) be amended by adding the words "in the vicinity of an aerodrome unless they".

**CAA response:** CAA does not agree as flight in the vicinity of an aerodrome is not appropriate in this rule, which is to do with the use of aerodromes. The flight rules applicable to flights in the vicinity of aerodromes are contained in NPRM 91.125 [Final Rule 91.223] Operating on and in the vicinity of aerodromes.

One commenter stated that the use of the word "ensure" in paragraph (a)(2) could infer that physical installation or implementation action shall be taken. In the case of landing or taking off at an aerodrome not under the direct control of the person concerned this is not appropriate. It is appropriate, however, to confirm that the lighting available is suitable for the aircraft and operation concerned. The commenter recommends that in paragraph (a)(2) the word "ensure" be replaced with the word "confirm".

**CAA response:** CAA agrees and the rule does not now contain the word ensure.

Two commenters stated that this rule, in contrast to CAR Part 139, allows aircraft to operate from a place which is not certificated under Part 139 provided the applicable standards are met. The rule needs to be rewritten.

**CAA response:** CAA does not agree. The rule does not require the use of certificated aerodromes. The reference to certificated aerodromes is only in the context that if the aerodrome used is certificated under Part 139, compliance is required with the limitations and operational conditions applicable to the aerodrome.

One commenter stated that it is impossible for a pilot to comply with paragraph (a)(4) particularly when operating at night. Whilst the runway may have been inspected at night by a responsible person there is no way that a pilot can ensure that the runway is clear of all persons, and the like, considering that the runway can be 3500 metres long. The rule should be withdrawn.

**CAA response:** CAA does not agree to withdraw this requirement but has amended the rule so that the word "ensure" is not used.

One commenter considered that paragraph (c) should refer to the applicable Advisory Circular related to Part 139 heliports rather than the general terms specified.

**CAA response:** CAA does not agree as the provisions of paragraph (c) are a must, and therefore properly in the rule as they were in Part 139.

## 2.19 91.82 Noise and vibration at aerodromes [Final rule 91.13]

One commenter suggested that the rule should take into account both the situations of pilots and engineers doing engine run ups and the operation of engine test beds. For this purpose the commenter suggested that the word "pre-take-off" should be deleted in paragraph (c)(i).

Another commenter stated that the rule makes no reference to noise and vibration when the certifying engineer is operating engines for the purpose of:

- manoeuvring the aircraft for compass swinging
- engine power and systems check
- pressurisation ground runs

The commenter stated that if this is an omission, it would be prudent to identify the Resource Management Act for the purpose of engineering ground run compliance.

**CAA response:** CAA agrees with these comments and has extended the provisions of this rule to persons other than pilots.

One commenter stated their support for this rule and believes that it should provide an appropriate legal mechanism against unrealistic local body plans.

**CAA response:** The intent of this rule is to give effect to section 97(1) of the Civil Aviation Act. The purpose of section 97(1) is to prevent the common law action

of nuisance being brought in respect of specified noise and vibration. It is not the intention of the policy to restrict any powers that territorial authorities may have under the Resource Management Act.

## **2.20 91.83 Prohibited, restricted, and danger areas [Final rule 91.129]**

Two commenters stated that they are unable to comment on this rule as Part 73 is not yet published. One commenter stated that Part 91 should not be progressed to a final rule until the NPRM's for Parts 71 and 73 are available for public scrutiny.

**CAA response:** CAA does not agree as Part 91 only prescribes the use of these areas and the absence of Part 73 does not inhibit comment on this rule. Part 73 will designate such areas in accordance with the rule making procedures and until the rule comes into force, the areas are those presently designated under the Civil Aviation Regulations 1953.

One commenter stated that the rule should also prescribe instrument restricted and low flying areas with a provision to ensure that the applicable conditions are complied with.

**CAA response:** The operating requirements for flight within instrument approach restricted areas are now found in 91.133(b)(2). The operating requirements for flight within a low flying area are now found in 91.135. These areas are designated under Part 73.

One commenter noted that the informal draft included "Temporary Restricted Areas". They are concerned that this provision was deleted from the NPRM and asks where such airspace will be addressed in the rules.

**CAA response:** CAA has concluded that "temporary restricted areas" are special use airspace and thus are now to be included in Part 73, Special Use Airspace. The NPRM for Part 73 is being developed and will be distributed for comment in the near future and there should be no delay in making this provision.

## **2.21 91.135 Low Flying Areas [Final rule 91.131]**

**CAA comment:** This rule was unintentionally not included in the NPRM. It has been added in this subpart on the basis that it is an existing requirement and in retrospect CAA considered it properly placed in Part 91 as a final rule.

## **2.22 91.103 Safety of aircraft [Final rule 91.201]**

One commenter considered that in paragraph (2), the words "during flight" should be replaced with the words "at all times". A pilot-in-command must be shown to be responsible for the aircraft and its occupants on the ground as well as in the air. However, if the term "flight" is adequately defined this amendment will not be required.

**CAA response:** CAA agrees. The rule is amended to use the words "during flight time" on the basis that this is consistent with the use of the term throughout the rules and "flight time" is defined in Part 1. This period may be extended in other rules in relation to the operator but not to the pilot-in-command.

One commenter stated that it is not reasonable to expect a pilot-in-command to "determine that the aircraft is in condition for safe flight". If there is an accident or an incident because of a mechanical failure or negligence on maintenance personnel's behalf, can the pilot-in-command be held responsible?

**CAA response:** CAA considers that it is reasonable for the pilot-in-command to determine that the aircraft is in condition for safe flight. The pilot-in-command conducts the final check of the aircraft in terms of what is commonly referred to as the *walk around*. Any failures in flight due to the negligence of another person does not place liability on the pilot-in-command if the failure is of a part or component of the aircraft that is not subject to the *walk around* check.

### 2.23 91.105 Authority of the pilot-in-command [Final rule 91.203]

One commenter considered that this rule would be more effective if it empowered the in-flight service director or equivalent person who has more contact with the passenger and better able to make the judgement first hand. Otherwise it can be a disruption just before departure when the Captain is busy.

**CAA response:** CAA does not agree as the pilot-in-command has empowerment under the Aviation Crimes Act to issue such commands and to enforce compliance. This does not prevent another person such as the in-flight service director advising the pilot-in-command that such an action is necessary.

### 2.24 91.107 Flight crew members at stations [Final rule 91.205]

One commenter stated that paragraph (a)(2) refers to a "safetybelt" whereas it is referred to a "seat-belt in 91.109(a) and consistency is needed in the use of these terms. The commenter suggested that these devices be generically termed as "specified personal safety restraints" and provided a suggested rule draft incorporating the term.

**CAA response:** CAA acknowledges the inconsistent use of "safety belt" and "seat belt" and has amended the rules to refer solely to "safety belt" which is the proper term for this equipment.

One commenter considered that the rule does not address flight dispatchers and winch operators.

**CAA response:** Any exceptions for the likes of flight dispatchers and winch operators are contained in the appropriate rule part such as Part 133, Helicopter External Load Operations, for winch operators.

**2.25 91.109 Occupation of seats and wearing of restraints [Final rule 91.207]**

One commenter considered that it is not possible in many aircraft for the pilot-in-command to "ensure that each passenger is seated in a seat or berth with their seat-belt, restraining belt, or shoulder harness fastened". The pilot-in-command can recommend either through delegation to crew, announcement of passenger lights or through the PA system that this be done but not "ensure" this has been done.

**CAA response:** CAA agrees and has amended the replacing the word "ensure" with "require". The practice on larger aircraft is that this is a crew function not conducted physically by the pilot-in-command but is given advice that this function has been done.

One commenter considered that the rule is poorly drafted as a passenger could fasten shoulder harness only and disregard the seat-belt and restraining belt. The commenter suggests that it should read "...with their seat-belt, restraining belt and shoulder harness, if fitted, fastened".

**CAA response:** CAA does not agree as the requirement for passengers to fasten their safety belt or other restraining device is contained in 91.7.

One commenter whilst agreeing with the exception for parachutists suggested that for clarity paragraph (c) should be amended to say "...or being carried during parachute operations".

**CAA response:** CAA agrees and has made this exception in the rule.

**2.26 91.111 Use of oxygen equipment [Final rule 91.209]**

One commenter stated that the rule does not allow for the operation of a pressurised aircraft unpressurised.

**CAA response:** CAA does not agree as in the context of this rule the term *pressurised* means operating in a pressurised mode not that the aircraft is capable of being pressurised. Should a pilot-in-command elect not to pressurise the aircraft, paragraph (a) would apply to that flight.

One commenter considered that the oxygen requirements of FAR 91.211 should be adopted as the standard for this rule. This would give the benefit of harmonisation and also allows greater operational flexibility, particularly when operating in the mountainous areas of the South Island. Some fixed wing operators have also advised that the raising of the altitude at which oxygen is required will assist them greatly in avoiding areas of known icing conditions that commonly exist in the 8000 to 10 000 foot heights. A 12 500 foot requirement opens up the cruising altitudes which are generally above the freezing level for use when required.

**CAA response:** The present requirements are based on physiological research and adopted by most States. It appears that the FAR requirements may be historically based on topography rather than physiological research. CAA cannot justify reducing the requirements without ascertaining that they do not increase the risk, and does not have the capability to do so in the short time-span for finalising this rule.

One commenter stated that paragraph (c) contradicts 91.235(6)(i) and (ii). The wording needs to be changed to allow descent to 14 000 feet or below in 4 minutes or less. The same commenter also stated that aircraft that are certificated to 25 000 feet are not usually equipped with pop outs which is the only way the paragraph can be complied with.

**CAA response:** CAA agrees and has amended the rule accordingly.

One commenter stated that there are no regulators on portable cylinders as suggested in paragraph (a)(2).

**CAA response:** CAA does not agree as in the case of portable cylinders, regulated fixed flow is a means of regulating oxygen.

The same commenter noted that the requirement remains for use of supplemental oxygen when one pilot is at a pilot station between FL 350 and 410. There is no requirement in the European Joint Aviation Requirements operating rules which simply states that above FL 250 quick donning masks will be available. If the Europeans don't require this rule what is the justification for us. This is an unnecessary requirement.

**CAA response:** CAA has not been able to establish the justification for the JAR requirement referred to in the time-span available for finalising this rule and the present requirements are maintained. CAA will maintain ongoing research and consideration of other standards being developed and if necessary will amend the rule at a future date.

One commenter considered that the provision in paragraph (a) should also apply to pressurised aircraft with the cabin pressure altitude within the same height band.

**CAA response:** CAA does not agree as the loss of pressurisation would instantly decrease the cabin pressure that could be hazardous to the occupants.

## **2.27 91.113 Passenger briefing [Final rule 91.211]**

Three commenters considered that paragraph (b)(1) should allow for a person other than the pilot-in-command to give the passenger briefing. There are operations such as sight-seeing when the pilot-in-command cannot brief the passengers and it would be more effective if a briefing was given by another person prior to the flight.

**CAA response:** CAA agrees and has included such a provision in the rule.

Two commenters considered that paragraph (b)(1) should state that "the pilot-in-command is responsible for ensuring the passenger briefing".

One commenter reasoned that the means of briefing should be left for the pilot-in-command to decide.

**CAA response:** CAA does not agree as it considers that this requirement equally applies to the operator as well as the pilot-in-command. For compliance in larger aircraft, the operator may be required to establish procedures to determine which crew member does the briefing, and the means to be used, followed by confirmation to the pilot-in-command that this has been done.

One commenter stated that the paragraph is too prescriptive and is restrictive on single-pilot operations where there is no crewmember or electronic presentation available.

**CAA response:** This rule covers all aircraft regardless of their size and crew numbers. The reference to using the likes of recorded presentation is in terms that they may be used and does not mandate their use for any aircraft.

One commenter considered that the statement required under paragraph (b)(4) is very general and a more specific statement is required to set a more general standard.

**CAA response:** The CAA considers that the rule is quite specific and does not consider that any further guidance is required for operators and flight crew.

Two commenters considered that the demonstration on the use of lifejackets under paragraph (b)(2) should be *if required* as lifejackets are not carried on all flights.

**CAA response:** CAA agrees and has amended the rule accordingly.

One commenter considered that the briefing on ditching procedures under (a)(5) should only be required when liferafts are carried.

**CAA response:** CAA does not agree as this briefing is required for flights over water even if a life-raft is not being carried.

The same commenter stated that, when the emergency oxygen is carried in a portable bottle, a demonstration is not practicable.

**CAA response:** The rule is amended to only require demonstration for flights above flight level 250. If portable bottles are the means of providing emergency oxygen above flight level 250, the CAA considers that a demonstration is imperative for the safety of the passengers in the event of loss of pressurisation.

One commenter stated that emergency equipment included the likes of axes, first aid equipment, and fire extinguishers. It is not practical to include such items under (5)(ii).

**CAA response:** CAA agrees and has amended the rule accordingly.

One commenter stated that briefing and demonstration on the use of oxygen should not be required for flights below 25 000 feet as these aircraft are not equipped with pop-out oxygen masks.

**CAA response:** CAA agrees and has amended the rule accordingly.

One commenter considered that paragraph (a)(4) should not require the operator to show the location of items such as, contents of liferafts and survival kits, megaphones, axes and fire extinguishers.

**CAA response:** CAA does not agree but for clarity has amended the rule to refer only to the location of survival and emergency equipment for passenger use.

#### **2.28 91.115 Carry on baggage [Final rule 91.213]**

Three commenters asked what is classed as baggage, what is the difference between baggage and cargo, and are these terms going to be defined.

**CAA response:** CAA agrees that these terms need to be defined. The definitions, based on the ICAO definitions will be included in Part 1.

One commenter considered that this requirement would be difficult to comply with in helicopters and small aircraft. The commenter suggested that that reference to "under a passenger seat in paragraph (2) should be deleted.

**CAA response:** CAA does not agree as this requirement is to maintain the integrity of unimpeded passenger egress in an emergency situation.

One commenter suggested that the rule should also address the carriage of dangerous goods.

**CAA response:** CAA does not agree as the requirements for the carriage of dangerous goods are prescribed in Part 92.

#### **2.29 91.117 Carriage of cargo [Final rule 91.215]**

Two commenters considered that the rule should include a provision for the carriage of dangerous goods.

**CAA response:** CAA does not agree as the requirements for the carriage of dangerous goods are prescribed in Part 92.

One commenter is concerned that the rule implies that cargo may not now be carried on passenger seats. Some operators have specially designed seat pods



which can be adequately restrained. The rule should clarify the situation to permit cargo carriage on such seats.

One commenter considered that the rule should allow the carriage of cargo and baggage on or under seats and that paragraph (b)(1) appears to authorise such carriage.

**CAA response:** The rule is amended for the carriage of cargo on passenger seats.

One commenter suggested that paragraph (a)(2)(i) infers that each item has to be secured by a safety belt. The rule should reflect that nets and the like are used in bulk compartments.

**CAA response:** CAA does not agree as the rule refers to seat belts or other restraining devices and the latter will include the likes of nets used in cargo compartments.

One commenter considered that cargo should be permitted to be carried in an overhead bin normally use for passenger baggage provided the various limits of the bin are met.

**CAA response:** The rule allows the use of cargo racks or bins for the carriage of cargo and this can include the use of over-head lockers within the limitations for their use.

### 2.30 91.119 Pre-flight action [Final rule 91.217]

One commenter suggested that the paragraph (6) should include heliports.

**CAA response:** By definition, aerodrome includes heliports and is therefore included in the rule.

One commenter considered that the rule should include "load assessment" as loading affects weight and balance and performance.

**CAA response:** CAA does not agree as this requirement is contained elsewhere requiring operation in compliance with the operating limitations specified in the flight manual.

One commenter suggested that pre-flight action should also include the following:

1. any applicable aeronautical information as advised by AIS NOTAMS; and
2. maintenance status of the aircraft including any defects being carried under the despatch deviation guide; and
3. company briefing notes applicable to that flight.

**CAA response:** Items 1 and 2 are covered elsewhere in Part 91. Item 3 is not applicable to Part 91 operations but is a requirement for certificated air transport operators.

One commenter suggested that the words "status of" should be inserted at the beginning of paragraph (5).

**CAA response:** CAA agrees and has amended the rule accordingly.

One commenter stated that such information, particularly current meteorological and aerodrome information, is not available for every destination. The commenter recommends that the rule should contain the words "where possible".

**CAA response:** CAA agrees and has inserted the words *where practicable* in paragraph (1).

One commenter considered that before beginning a flight a pilot must become familiar with the types of airspace and the rules and responsibilities within the airspace expected to be encountered en-route. The commenter provided a suggested draft rule to cover this.

**CAA response:** CAA agrees that this is necessary. It is addressed elsewhere in Part 91.

### **2.31 91.121 Familiarity with operating limitations and emergency equipment [Final rule 91.219]**

One commenter considered that an exception is required for the likes of hang-gliders and parapents from the carriage of emergency checklists.

**CAA response:** Exceptions to this requirement are contained in the applicable operating rule for this activity.

### **2.32 91.123 Flying equipment and operating information [Final rule 91.221]**

One commenter asked what is the significance of the engine inoperative data for multi-engine aircraft. Do we mean accelerate-stop and why do we ignore the likes of engine-inoperative for single-engine aircraft and helicopter autorotation.

**CAA response:** CAA has deleted this item as it is information contained in the aircraft flight manual which also contains the other information referred to by the commenter. An earlier rule requires compliance with the flight manual and therefore implies familiarity with this information.

One commenter stated that the carriage of charts is totally irrelevant for local flights and the words "appropriate" in (a)(2) should be preceded with the words "where possible".

**CAA response:** CAA does not agree as the word *appropriate* means that if aeronautical charts are not relevant to the flight they are not required to be carried and thus the pilot not required to be familiar with them.

One commenter stated that the reference to a means of indicating the time is somewhat loose. They suggest that the reference should be made to ensure accuracy to be able to indicate the time in UTC and to plus or minus seconds accuracy.

**CAA response:** Not all aircraft are required to be equipped with a means of indicating the time. In the context of this rule this requirement can be fulfilled by the likes of a wrist watch and accuracy is a matter to be determined by the pilot-in-command. Inclusion of a means of indicating the time in UTC in the rule is not agreed. The pilot-in-command is responsible for converting time to UTC when required and the means of conversion is one to be determined by the pilot-in-command.

One commenter suggested that "and associated appropriate navigation equipment" be added to (a)(2).

**CAA response:** This requirement is prescribed in Subpart F Instruments and Equipment Requirement.

One commenter stated that the weight passenger break of 5700 kg or nine passengers should be amended to 5700 kg or 20 passengers. A seating of nine passengers is applicable to an aircraft of approximately 2500 - 3000 kg.

**CAA response:** CAA does not agree as both the weight-break and passenger numbers are relevant to this requirement in terms of potential risk.

One commenter considered that, as written, it requires a means of indicating time at each pilot station. This requirement was originally stated in 91.207 and it should be returned to that rule and (a)(1) deleted.

**CAA response:** Not all aircraft are required to be equipped with a means of indicating the time. In the context of this rule this requirement can be fulfilled by the likes of a wrist watch. The requirement for an aircraft to be equipped with a means of indicating the time in 91.207(a)(1) is maintained in Subpart F Instruments and Equipment Requirements.

### **2.33 91.125 Operating on and in the vicinity of an aerodrome [Final rule 91.223]**

One commenter stated that: "I have misgivings about the value of ground markings such as in Figure 1. It is my belief that pilots are trained to look out and around, not so much down, that unless specifically looking for a ground signal would not actually see one and generally by the time a ground signal is

observed it is too late. Appropriate use of radio, charts and NOTAMS would achieve more".

**CAA response:** CAA does not agree as it is not always practical for advice to be given by radio, charts, or NOTAMS that such activity is being conducted.

Another commenter stated that all aerodromes should be left-hand circuit with the provision for exceptions.

**CAA response:** This rule does specify left-hand traffic circuits at all aerodromes that are promulgated in the AIP. Exceptions to this rule are contained in Part 93.

One commenter was concerned that the rule did not address the traffic pattern at aerodromes not promulgated in the AIP. The traffic pattern should be prescribed for such aerodromes that are regularly used or used by a number of aircraft on some occasions.

**CAA response:** The traffic circuit may be in any direction at aerodromes not promulgated in the AIP but the principal requirement to conform with, or avoid, the aerodrome traffic circuit formed by other aircraft applies. There are numerous aerodromes not listed in the AIP the majority have a single runway and little used, or principally used by one operator. The use of right-hand traffic circuits are not uncommon at these aerodromes because of terrain or climatic conditions and may vary from day to day. CAA considers that it is not practical to specify the traffic circuit direction at these aerodromes and is satisfied that safety is not compromised at such aerodromes.

One commenter stated that as drafted the rule requires a circuit to be flown unless otherwise instructed by ATC. The current situation where a straight-in approach or joining on base leg may be flown at an aerodrome where there is no ATC must be allowed to continue.

**CAA response:** The rule, as written, does not differ from the present requirements prescribed under the Civil Aviation Regulations 1953. Straight-in approaches or joining on base leg can be done with the proviso that they conform with the aerodrome traffic circuit formed by other aircraft.

One commenter considered that provision should be made available for operation other than in the designated circuit direction where safety or good aviation practice dictates. This would be when there is no conflict with other aerodrome traffic.

**CAA response:** The CAA does not agree. At aerodromes without ATC in attendance, there can be no assurance that there is no conflict with other aircraft.

**2.34 91.127 Operations at aerodromes with air traffic services [Final rule 91.225]**

One commenter stated that in (a)(2)(i) the reference to an "air traffic zone" is incorrect. It is preferable to use the term "aerodrome traffic circuit" in this paragraph.

**CAA response:** CAA agrees and has deleted the requirement for a clearance prior to entering an air traffic zone.

**2.35 91.129 Operating near other aircraft [Final rule 91.227]**

One commenter considered that there should be some reference to the need for pilots who carry out formation flying to be qualified, authorised, and briefed on formation flying.

**CAA response:** CAA does not agree to place a requirement for a qualification, authorisation or briefing in this rule. The requirement for prior arrangement is deemed to be adequate in this rule.

One commenter considered that for this rule to be effective formation flights must be defined, otherwise it can be argued that a flight of up to 100 or 200 metres from another aircraft is formation flight.

One commenter stated that there should also be some reference to minimum lateral spacing.

**CAA response:** CAA agrees to the suggestion of a minimum lateral spacing and has added a definition for *formation flight* which specifies minimum distances.

One commenter considered that there should be an exception for gliders to cover the situation of gliders flying in close proximity to each other, especially when thermalling.

**CAA response:** Any exception to this rule will be contained in Part 104, Operation of Gliders and Powered Gliders.

One commenter asks if there will be a definition of the term "hire or reward".

**CAA response:** The term "hire or reward" has a long legislative history and has already received significant judicial attention in transport related case-law. It is preferable therefore to leave the definition to the Courts. The essential elements of the term are:

- "Hire" has been determined to mean compensation for carriage.
- The addition of the term "reward" is intended to include situations where there is no obligation to pay but payment is made, and to ensure that any form of valuable consideration is included in the meaning of hire.

Whether an operation is for hire or reward is to be determined on the particular facts of each case.

One commenter stated that formation flying whilst parachuting is a fairly common occurrence. The aircraft involved could be operating for hire or reward and an exception is required for this type of operation.

**CAA response:** CAA agrees and the rule now has such an exception.

### **2.36 91.131 Right of way rules [Final rule 91.229]**

One commenter stated that whilst the parachutist is exempted from the requirements of Part 91, there is no provision made explicitly for persons operating aircraft to give way to persons using a parachute. It is important from a safety point of view that parachutes be given right of way as they have extremely limited performance or capability to avoid collision. The commenter suggested that the rule should be amended requiring aircraft to give way to parachutes.

**CAA response:** CAA agrees and has included this provision in the rule.

One commenter suggested that the rule should address take-off and landings at aerodromes where the operation of the aircraft is not restricted to prepared runways.

**CAA response:** CAA does not agree and considers that the rule as written is adequate in these circumstances.

### **2.37 91.139 Aircraft speed [Final rule 91.237]**

One commenter said that their understanding is that the speed restriction is a requirement under FAR 91 but believe it should adopt a more reasonable basis in New Zealand. As collision avoidance appears to be the only reason for the speed limit, the commenter suggests that it should only apply to aircraft with four or more passenger seats. The commenter reasons that any fast aircraft with less than four passenger seats is certain to be fully aerobatic and extremely manoeuvrable and able to avoid collision. A blanket speed restriction, when applied to high performance aircraft, will result in a degradation of flight safety which would not arise if a system based on the ability of an aircraft to manoeuvre was adopted.

One commenter suggested that if the minimum safe speed for any particular operation is greater than 250 knots the aircraft may be operated at that minimum speed.

**CAA response:** CAA does not agree with the premise that the ability to manoeuvre all high-speed aircraft is necessarily affected by this speed restriction. The safety of some high-speed aircraft may be affected by the speed restriction and the rule has been amended to allow such aircraft to fly at a greater speed as

prescribed in the aircraft flight manual. The speed restriction is specified for safety and the CAA believes that the only exception should be for aircraft that are required to maintain a greater speed by the flight manual and aircraft participating at aviation events.

One commenter suggested that reference to speed not being restricted at an aviation event is open to misinterpretation. They considered that in paragraph (b)(2) the words "and the activity has been approved by the Director" should be added.

**CAA response:** CAA does not agree to add these words as the requirements for aviation events, including the required approvals, are prescribed in Subpart H Special Flight Operations.

### 2.38 91.141 Altimeter settings [Final rule 91.239]

One commenter stated that they have not been able to ascertain the rationale behind this change to the transition level and it appears to be a case of *change for changes sake*.

One other commenter asked why change and if any change is required then we should standardise with the FAA and use 18 000 feet.

One commenter stated that the current system is established such that there will always be a minimum of 1000 feet between aircraft using 11 000 feet AMSL and an aircraft using the lowest available flight level. However, when the QNH is above 1013 hPa the difference between the transition altitude and the lowest useable flight level is well in excess of the minimum required. In the interest of the efficient use of available airspace a review of this situation is in order. The rule as written states that an aircraft can operate within the transition layer as instructed by ATC. The present transition layer is such that the vertical separation between aircraft at the transition altitude and an aircraft at the lowest available flight level will be from 1000 feet to nearly 3000 feet depending on the area QNH. This can be excessive at times but does achieve the safety goal. This draft rule infers that within the transition layer an aircraft can be cruising, as instructed by ATC, with reference to QNH or QNE (1013.2 hPa) depending on what separation requirement is in place. This would be confusing and not error tolerant to both pilots and ATC, and would not be permissible within AIRCAT (current radar system). Whatever the rules are to be for the use of the level within the transition layer, they must be published for pilots advice as well and it is important that they know in advance if FL140 is available. After having researched the procedures in place in Australia, USA, Canada, and the UK, the rule could implement a similar system to that in Australia since the procedures are not dissimilar to our current procedures. The procedures permit the use of an additional 1000 feet of altitude subject to QNH restriction and they ensure vertical separation between the transition altitude and the lowest available flight

level. The Australian system is such that the "thickness" of the transition level is 1000 foot less than what we currently use, and the lowest available flight level is effected by further QNH definition. The commenter proposes that the Australian system be adopted in this Part.

**CAA response:** CAA has reviewed the rule in terms of any benefits accruing from changes to the transition altitude. The Australian system was considered and referred for comment to a number of organisations. In the final analysis, CAA determined that there is no identifiable benefit accruing from a change to the present requirements and therefore has decided to maintain them. CAA will be conducting ongoing studies to determine if changes are required to improve airspace utilisation and this issue will in no doubt be revisited.

Two commenters stated that the use of QFE within an aerodrome circuit is not supported. One of the commenters stated that aircraft operating on QFE could be at an appreciable different height from any aircraft operating on QNH. The other commenter stated that there are many documented cases of accidents directly attributable to confusion between QNH and QFE altimeter settings.

**CAA response:** CAA agrees and has deleted all reference to the use of QFE.

### **2.39 91.143 Compliance with ATC clearances and instructions [Final rule 91.241]**

Two commenters suggested that the provision in (b) should be extended to violation of any rule made under this and any other Part.

**CAA response:** CAA does not agree to extend this provision to other rule Parts. Each individual Part will have corresponding infringement regulations to deal with non-compliance with an individual rule and therefore it is not necessary to duplicate compliance in Part 91.

One commenter considered that the rule as written is unnecessarily convoluted and provided a possible draft rule for consideration

**CAA response:** CAA agrees and the rule has been amended for clarity.

### **2.40 91.147 Operations in classified airspace [Final rule 91.245]**

One commenter considered that (d) should be applicable to IFR and to VFR at all times not just night. They reason that this is required to have VFR traffic on the appropriate frequency in Class E airspace.

One commenter suggested that VFR aircraft should in (d) be required to advise entry to Class E airspace with intentions and position reports.

**CAA response:** This issue is to be addressed in Part 71 designation of airspace as any change to this requirement will impact on a number of other



rules. If there is such a change, amendment to this rule would be generated in conjunction with the change.

One commenter considered that the full ICAO classification of airspace should be included by adding Class B and F airspace. Class B airspace is where separation between IFR and VFR is given, and Class F airspace is where all flights receive an advisory service. Both classifications could be used in the future and in this level of documentation should be include at the onset,

**CAA response:** CAA does not agree, as the inclusion of other classes of airspace, when such classes do not exist in New Zealand, could be confusing. If a new class of airspace is introduced in the future, this rule would be amended to include it.

#### **2.41 91.149 Use of SSR transponder and altitude reporting equipment [Final rule 91.247]**

One commenter suggested that code allocation is not an appropriate detail to be published in a rule. Although allocation of emergency codes is unlikely to change, the day-by-day use of codes may change from time to time and needs some flexibility. If a discreet code is assigned, it will not be necessary to also comply with a standard code drawn from a table and the rule should reflect this. The commenter suggests that Table 2 should be deleted and replaced by a statement in the rule to say "set the transponder in accordance with the standard SSR Airspace Codes specified in the NZAIP".

**CAA response:** CAA does not agree as the rule makes a provision for ATC to assign other codes. CAA believes that any proposed changes to the standard codes contained in Tables 2 and 3 should be the subject of the rule making process to allow industry input.

One commenter considered that SSR code setting requirements for formation flights should be addressed suggesting that the requirement be specified in the NZAIP.

**CAA response:** CAA agrees that formation flight should be addressed in the rule but not with the suggestion that it be specified in the AIP.

One commenter considered that the request period of 30 minutes for operation of an aircraft without SSR should be in an Advisory Circular as good advice.

**CAA response:** CAA does not agree as there must be some criteria for the time period for ATC consideration though in practice the actual ATC response period may be less.

One commenter considered that exemption should be provided for gliders from operating Code C. They stated that it is a current understanding gliders will be required to transmit mode A only.

**CAA response:** The rule does state that Mode C is only required if the aircraft is equipped with the equipment. The issue as to whether gliders should be equipped with it is addressed in Subpart F – Instruments and Equipment Requirements.

#### **2.42 91.249 Aircraft callsigns [Final rule 91.249]**

**CAA comment:** CAA became aware that this requirement presently prescribed in the AIP should have been included in the NPRM. The requirements are based on the ICAO standards which have been adopted by most States. As there is no change to the present requirements prescribed in the AIP, CAA consider that this rule can be included as a final rule in Part 91.

#### **2.43 91.151 Fuel requirements for flight in VFR conditions [Final rule 91.305]**

One commenter considered that this is not a flight rule and should be relocated to Subpart B.

**CAA response:** CAA does not agree as this is a specific flight rule applicable to VFR operations.

Four commenters asked the basis for the different requirements between reciprocating-engine powered aeroplanes and turbine-engine powered aeroplanes. They considered that there is no basis for this difference and one commenter noted that the equivalent rule in FAR Part 91 specified the same fuel requirements to all aeroplanes. Two of the commenters considered that that 30 minutes fuel reserve is adequate for all aeroplanes. One of the commenters suggested that the fuel reserve should be 30 minutes for day flights and 45 minutes for night flights.

**CAA response:** CAA agrees that there is no rationale for the different requirements between reciprocating engine powered aeroplanes and turbine powered aeroplanes and most States do not have this difference in their legislation. On this basis the rule is amended to require fuel as specified in FAR 91.

One commenter considered that the helicopter fuel reserve should be increased to 30 minutes for flight greater than 20 minutes stating that a 20 minute fuel reserve on an air transport flight is nowhere near enough.

**CAA response:** CAA does not agree as Part 135 specifies other factors that have to be taken into account when calculating the minimum fuel for the flight for air transport operations.

One commenter stated that (b)(2) should be deleted, referring to an article in the New Zealand Flight Safety FSS-95-2 dated 1 March 1995.

**CAA response:** CAA does not agree as the article was about fuel management and did not mention, nor consider, that the fuel reserve was an element of the occurrence referred to.

One commenter considered that (b)(2) as written seems to require a flight of 15 minutes to have 30 minutes fuel reserve as being twice the anticipated flight time. The intention appears to require a fuel reserve equal to the planned flight time.

**CAA response:** CAA agrees and has amended the rule accordingly.

#### **2.44 91.153 VFR flight plan [Final rule 91.307]**

Five commenters considered that the requirement in (c) of submitting the flight plan 30 minutes prior to the flight is not needed. One commenter stated that it is too restrictive and could deter some pilots from filing flight plans at all and negate the present practice of filing a flight plan in flight in appropriate circumstances. One commenter asked what is gained by this, as, if ATC cannot accept the flight plan in a shorter period they will say so. One commenter stated that, except in cases where a special clearance is needed, there is no practical reason for the 30 minute notice. One commenter considered that the 30 minute period was advisory material and is unnecessary where the flight plan is often passed by radio to ATC.

**CAA response:** CAA agrees with these comments and has removed the requirement.

Seven commenters considered that the rule should provide for abbreviated flight plans and the ability to flight plan by radio when airborne.

**CAA response:** The reduced requirement for submitting a flight plan makes the provision for abbreviated and in flight planning unnecessary.

Three commenters considered that there should not be a requirement to submit a flight plan for local flights. One commenter stated that the requirement is not appropriate at aerodromes with ATC or ATS in attendance as the use of radio provides the appropriate advice. One commenter reasoned that the requirement is not appropriate for flights purely local in character particularly those of a local training nature.

Another commenter considered it to be necessary to refer to a limited information flight plan to be used for the purpose of obtaining a clearance for a departure or arrival at a controlled aerodrome or for a flight through a portion of controlled airspace.

**CAA response:** CAA has reviewed the requirement to submit a flight plan for flights in controlled airspace and concluded that the flight plan did not serve any useful purpose in this context. The requirement for flight in controlled airspace

is an ATC clearance and the flight plan is not relevant or necessary for the granting of ATC clearances for VFR flight. On this basis, the rule is amended to only require the submission of a VFR flight plan for flights proceeding more than 50 nm from shore and whenever the pilot-in-command requires an alerting service.

One commenter considered that the requirement to submit a flight plan for flights more than 50 nm from shore is unnecessary. Such a flight is not going to affect ATC and it is the operator's decision as to the level of flight following they wish to carry, and who they wish to provide the service.

**CAA response:** CAA does not agree. The State has a function of providing an alerting service for the purposes of search and rescue (SAR) should an aircraft become overdue. The requirement for a flight plan for flights proceeding more than 50 nm from shore is considered necessary for the provision of an effective SAR service particularly in terms of cost. The SAR service is not a charge to the operator and flight plan details assist any SAR action and minimise the cost because of the information available. A flight that proceeds without a flight plan is also the subject of SAR when advice is received that the aircraft is overdue and the absence of flight plan information would be detrimental to the conduct of any search.

One commenter considered that many of the requirements in (d) are not relevant to the flight planning process. All that is required in a VFR flight plan is basic information to assist ATC in provision of an ATC service as in (d)(1), (3), (4), (6) and (8).

**CAA response:** CAA agrees that item (d)(5) is not relevant for VFR flights but does not agree to delete the other items. The provision of SAR service is addressed in the previous response and the items considered not relevant to ATC by the commenter are relevant information for any SAR action.

One commenter considered that the requirement to provide the number of people on board should only apply to aircraft with a seating capacity of more than 6 passengers and air transport operations. The commenter reasons that this requirement is solely for rescue-fire purposes and it is self evident how many are aboard this category of light aircraft.

**CAA response:** CAA does not agree as this information is relevant for SAR purposes.

One commenter suggested that the requirement under (f) of terminating the flight plan will require expansion in an advisory circular.

**CAA response:** The administrative details for compliance with this requirement will be contained in the NZAIP.

**2.45 91.155 Position reports [Final 91.309]**

One commenter considered that position reports should be required for aircraft operating on a flight plan. The commenter states that those of us who value our lives will still file flight plans for Search and Rescue purposes when flying outside controlled airspace.

**CAA response:** For other than flights proceeding more than 50 nm from shore the filing of a flight plan is voluntary for the purpose of providing an alerting service. CAA considers that position reports have the same voluntary status for flights outside controlled airspace. As pointed out by this commenter, prudent pilots will take advantage of the alerting service and provide position reports to enhance the effectiveness of any SAR action in the event of a mishap.

**2.46 91.157 VFR meteorological minima [Final rule 91.301]**

One commenter believes that the requirements of FAR 91.155 should be adopted for operations in New Zealand and submits a suggested wording and Table based on this rule. One of the critical components of the table is the distance from cloud requirement in Class G airspace below 1200 feet during daylight. The proposed requirement to have sight of the surface needs to be removed. Cases arise where low cloud exists below 1200 feet which obscures the surface but can safely be flown across. This is not a safety issue and is consistent with the FAR.

**CAA response:** This proposal is a major departure from the NPRM requirements. CAA has been unable, in the time-span available for developing the final rule, to ascertain the basis for the FAR rule or the impact it might have on safety and considers that wider consultation would be needed to consider its adoption. The FAR rule is complex and as such compliance with the requirements might be difficult. On this basis, CAA does not agree to adopt the FAR requirements though it is a matter that could be pursued in the future.

One commenter said that the VFR table of minima allows aircraft to operate to lesser minima outside the hours of aerodrome control by day. Logic would suggest that the lower minima should be reserved for the controlled situation.

**CAA response:** The logic is that there is a greater density of traffic at controlled aerodromes and though VFR flights are provided with ATC clearances and sequenced in the circuit, pilots are still responsible for compliance with the rules of the air to avoid collisions.

One commenter considered that all pilots should be aware of the reduced vertical minima from cloud that has been authorised for glider pilots in Part 104. As it is possible that not all pilots will have detailed knowledge of Part 104 this provision should be in this rule.

**CAA response:** CAA does not agree. The AIP will contain this as information for all pilots.

The helicopter requirements, outside controlled airspace, seem to be unspecified in terms of absolute minimum cloud base and visibility. Provided the helicopter manoeuvres at a reduced speed it seems anything goes, including hover taxiing in fog. The current minimum visibility of 1500 metres is barely enough to enable a pilot to see and avoid obstacles. 1000 metres is officially "fog" and all that you can do in fog is hover taxi. This relaxation will bring about an upsurge in controlled flight into terrain accidents if it is brought in. At the moment only experienced rescue pilots operating under Regulation 35 provisions fly in these conditions.

**CAA response:** This requirement is the same as presently prescribed in CASO 1 and is not therefore a relaxation. CAA has no basis to amend this requirement and does not agree with this comment.

One commenter stated that no mention is made of emergency situations or the situations covered in Regulation 38(a)(b), and (d) and noted that emergencies are included in 91.175.

**CAA response:** An exception for emergency situations is not provided as there is a provision in the Act for non-compliance with the rules in such a situation.

#### **2.47 91.159 Special VFR weather minima [Final rule 91.303]**

One commenter considered that the reference to a cloud ceiling requirement of 600 feet in this rule is in their view unnecessary given that (3) requires the pilot-in-command to remain clear of clouds. The commenter requests that an amendment be made to (4) to require aeroplanes to operate clear of cloud with visibility of at least 1500 metres. Consequently an amendment should be made to (5) to permit the operation of helicopters clear of cloud and with visibility of less than 1500 metres if the helicopter is operated at a speed that will give adequate opportunity to observe other traffic or any obstructions in order to avoid collisions.

**CAA response:** CAA considers that the requirement for a 600 foot cloud ceiling is necessary for the safety of aircraft and this also ensures compliance with the prescribed minimum safe altitudes. CAA agrees with the reduction in ceiling and visibility for helicopters and has incorporated the CASO1 requirements in the rule.

One commenter stated that the rule allows routine operations for helicopters at any altitude. Currently a special VFR clearance does not absolve a pilot from the requirements of Regulation 38. However, the new requirements will enable entry into a control zone by helicopters at any altitude and the commenter does not agree with this lawless regime for helicopters.

**CAA response:** This requirement is the same as presently prescribed in CASO 1 and is not therefore a new requirement. CAA has no basis to amend this requirement and does not agree with this comment.

#### **2.48 91.161 Minimum altitudes for VFR flights [Final rule 91.311]**

Three commenters considered that there should not be any height limitation for flights in designated low flying areas.

One of the commenters stated that often simulated landings are practised in low flying areas, with no intention of landing, and breaking them off at 200 feet is ridiculous. Likewise, bad weather flying practice is best performed in low flying areas, and such height restriction makes such practice ineffective. The commenter strongly support the limitation as in (4) for this.

Two of the commenters considered that there should be no height limitation for helicopter flight training in low flying areas. Low flying techniques are an important part of helicopter flight training and in the past most helicopter instructors have carried out low flying flight training, which includes underslung load training, within designated low flying areas.

**CAA response:** CAA agrees with these comments and has removed the height restriction for the use of low flying areas. The 200 foot limitation does restrict the effectiveness of some training exercises in low flying areas and the minimum height is one that should be determined by the flying instructor.

One commenter stated that it is essential that this rule be amended to directly model both the wording and intent of FAR 91.119. The FAR rule has been in place for a long time, has been subject to numerous challenges through the petition process, and has stood the test of time. With over 10 000 rotorcraft the USA is undoubtedly the home of the civil helicopter and FAR 91.119 has proven workable for operators and demonstrated an excellent level of safety.

**CAA response:** The final rule is similar to FAR 91.119 with the exception that the minimum height over any congested area of a city, town, or settlement, or over any open air assembly of persons is also applicable to helicopters. CAA does not agree to a relaxation over congested areas as provision for lower heights for operations that need to operate at such heights are specified in the appropriate rule Parts such as Part 137.

Three commenters stated that (a)(4) as written is confusing and the words "but not" should be deleted.

**CAA response:** CAA agrees and has amended the rule to avoid any confusion.

Three commenters considered that the rule does not provide for the conduct of low level operations such as, topdressing, stock spotting, survey, and patrols.

They consider that the rule should allow such operations to be flown below the minimum safe altitudes.

**CAA response:** Minimum safe heights for agricultural operations are contained in Part 137. CAA agrees that provision is needed for flight at lower heights for other operations described by the commenter and the final rule contains such a provision. This provision in paragraph (c) refers to *bona fide* purpose for the likes of the operations referred to.

Three commenters considered that the rule should have the same provision as currently in Regulation 38 which provides an exception through stress of weather encountered en-route.

**CAA response:** There is a provision in the Act applicable to emergency situations which would include stress of weather and CAA does not believe that a *carte blanche* exception should be provided in this rule.

One commenter considered that (a)(4) should include flight over the sea.

**CAA response:** CAA agrees and the final rule has been amended to extend this provision for flight over water.

One commenter considered that throughout the rule the term "altitude" means "height". Height is defined with reference to the surface feature whilst altitude is defined in relation to mean sea level. The term "height" is therefore more appropriate in the context of this rule.

**CAA response:** CAA agrees and the word height is used in the final rule.

Two commenters expressed their concern about the provisions in (a)(4). One commenter has the opinion that this provision is a licence for any pilot of any experience or ability to low fly. Not only is the pilot given *carte blanche* approval to low fly, but is given the approval to carry out this operation in an environment which is widely understood to present its own special hazards to the unwary, or inexperienced, even in a normal flight regime. With absolutely no constraints on when, why, or to a large degree, how the pilot carries out this operation, and we are left with very serious doubts as to the wisdom of this sanction. If such an operation is required for training, resource survey, deer recovery, and the likes, then this needs to be clearly spelt out and, if necessary, general or specific approval sought.

The other commenter stated that with only the general guidelines in (c), we could expect to have helicopters hover taxiing past our homes only 500 feet away horizontally, and in 100 metres visibility. There are elements in the industry who would do just that, bringing the entire industry into disrepute. The commenter doubts whether the Resource Management Act allows the CAA to relax the minimum altitude rules to this extent without consulting the entire community. The NZ helicopter industry would soon find itself legislated out of



business if it was party to such irresponsible low flying rules as those proposed in this rule.

**CAA response:** The final rule has been amended by removing the so called *carte blanche* provision for flights below 500 feet. There is a need for flight below 500 feet to effectively conduct some operations and the final rule refers to flights that have *bona fide* purposes. The types of operations requiring flight at low altitudes are too numerous and diverse to list as an option to *bona fide* purposes in the rule.

One commenter considered that it will be necessary to define congested and sparsely populated areas for this rule to have any effect.

**CAA response:** The use of "sparsely populated areas" is not used in the final rule. CAA has inserted a definition of *congested area* to aid interpretation of this term.

One commenter considered that the horizontal distances in (a)(2) and (3) should be expressed in metres.

**CAA response:** CAA does not agree. In terms of distances which have to be determined by a pilot in flight, aeronautical navigation charts are in nautical miles and feet and thus nautical miles or feet are used for distances prescribed in the rules required to be determined in flight.

One commenter considered that the rule should provide an exception for the operation of microlight flying boats over water in ground effect.

**CAA response:** CAA does not agree as any exception applicable to microlight aircraft will be contained in Part 103, Operation of Microlight Aircraft.

One commenter considered that an exception should be provided for gliders which anticipate or are preparing for an outlanding. Gliders may appropriately be operating in the vicinity of "2 or more buildings" if these are close to the most suitable area for a potential landing.

**CAA response:** CAA does not agree as any exception applicable to gliders will be contained in Part 104, Operation of Gliders and Powered Gliders.

#### **2.49 91.163 VFR cruising altitude and flight level [Final rule 91.313]**

One commenter stated that the flight level in (b)(2) should be 160 not 140 to maintain the thickness of the transition layer.

**CAA response:** The error is noted but as previously explained in response to earlier comments the final rule is amended to maintain the requirements as presently prescribes in CASO 1.

**2.50 91.165 Minimum flight crew [Final rule 91.401]**

Two commenters stated that the provision permitting single pilot operations without a co-pilot or an auto-pilot, if the flight manual so authorises, is a retrograde step from a safety point of view. One commenter stated that single-pilot IFR operations with an auto-pilot is a demanding enough a task for the inexperienced. To remove the safety feature of the auto-pilot for single-pilot IFR operations will undoubtedly increase the accident and incident rates.

**CAA response:** CAA does not agree that this is a retrograde step as most States allow single-pilot IFR operations in an aircraft not equipped with an auto-pilot. The present requirement for an auto-pilot was prescribed during the embryonic stage of IFR operations by *general aviation* aircraft in this country and has been restrictive and costly to operators. There is no evidence to suggest that this will affect safety. CAA believes that the decision to equip an aircraft with an auto-pilot is that of the operator.

One commenter considered that to specify a headset and boom microphone is considered to be over-specific. A more generic term needs to be used to allow for new technology to be used when it eventuates. The commenter suggested that (2) should read "the aircraft is equipped with operational communication equipment that is capable of hands free operation at all times".

**CAA response:** CAA agrees and has used a more generic term in the final rule.

One commenter considered that the rule as written conflicts with flight manual information and should state that the minimum pilots carried should be one or as specified in the aircraft flight manual.

**CAA response:** The rule refers to the aircraft flight manual requirements and CAA does not agree that there is a conflict.

One commenter supported the rule, provided present aircraft operating IFR single-pilot will not have to pay for achieving such authorisation.

**CAA response:** This comment is obscure as the rule does not require authorisation and therefore the matter of cost is not relevant.

One commenter considers that single-pilot IFR operations should require roll control and heading hold for aircraft under 5700 kg MCTOW. This requirement would enhance the safety of the flight and develop the pilot skills for operating air transport aircraft.

**CAA response:** CAA does not agree to mandate an auto-pilot for this purpose. This is a customer related requirement for any training organisation and a decision they have to make.

**2.51 91.167 Fuel requirements for IFR flights [Final rule 91.403]**

One commenter stated that this is an important, and unjustified, change in terminology from FAR 91.167 which refers to "flight in IFR conditions".

**CAA response:** CAA does not agree. While CAA has decided to incorporate the FAR legislative framework this does not mean that it will also adopt each rule within the framework. FAR 91.167 was considered along with similar rules of other States and the ICAO standard. There is no positive safety benefit identified with the FAR rule but there is a possible negative safety value as the rule relies on the flight being conducted in VFR conditions. On this basis the final rule refers to IFR flights.

One commenter stated that as with 91.151 we question the split in the fuel requirements between piston and turbine powered aeroplanes. We suggest that the standard of FAR 91.167 should be adopted at 45 minutes for aeroplanes and 30 minutes for helicopters.

One commenter stated that they have a problem understanding the reasons why turbine powered aircraft carry less fuel reserves. If it is because they on average are faster therefore can fly further, then the criteria should be normal cruising speed not the engine type.

**CAA response:** CAA does not agree to increase the reserve fuel for turbine powered aircraft as it would add considerable cost to the operator and there is no reason to suggest that 30 minutes is inadequate for turbine powered aircraft. This has not been a safety issue and CAA has no justification to consider this change.

One commenter considered that the notification of traffic fuel advisories with possible delays at times of congestion at certain aerodromes needs to be inferred in this rule.

**CAA response:** CAA does not agree as, if adopted, it would allow ATC to mandate fuel to be carried in aircraft. It is proper for ATC to give advice of traffic delays but the operator should determine the fuel requirements based on this advice.

**2.52 91.169 ATC clearance [Final rule 91.405]**

One commenter suggested that the words "before operating in controlled airspace" should be added at the end of the rule.

**CAA response:** CAA has removed this rule as this requirement is included in 91.245. The wording of 91.245 incorporates the commenter's suggestion.

**2.53 91.171 IFR flight plan alternate aerodrome requirement [Final rule 91.405]**

One commenter considered that the current visibility requirement should be retained as the proposed visibility requirement is excessive.

Four commenters considered that the proposed visibility in (a)(2)(ii) of 5000 metres more than the IFR minima is a significant increase over the present requirement of 5000 metres visibility. The four commenters considered that the present requirement of 5000 metres visibility should be maintained.

One commenter expressed disappointment that the visibility in (a)(2)(ii) has been increased to 5000 metres from the 4000 metres proposed in the informal draft.

**CAA response:** CAA agrees and has amended the rule as suggested to require a visibility of 5000 metres.

Two commenters submitted amendments to paragraph (a) to improve the meaning.

**CAA response:** CAA considered the submissions and has amended the wording of the rule to improve the meaning.

One commenter suggested that the rule should allow a VFR alternate aerodrome to be nominated for an IFR flight provided current weather reports and forecasts show that the alternate aerodrome weather will be cloud absent visibility unlimited (CAVU) at time of arrival.

**CAA response:** CAA does not agree with this suggestion as the weather at the alternate aerodrome is not relevant provided that it is at or above alternate minima. A pilot has the option of cancelling IFR and proceeding VFR to the alternate in these circumstances but CAA considers that a planned VFR diversion is not acceptable as the amount of reserve fuel at the alternate could very well be compromised.

One commenter stated that the visibility in (b)9(2)(ii) does not provide sufficient margin above the non-precision approach visibility. It should state a visibility of 4000 metres or 2000 metres more than that specified for the procedure whichever is the greater.

**CAA response:** CAA agrees that the rule provides insufficient margin and has amended the final rule as suggested though reducing the suggested 2000 metres to 1500 metres

One commenter asked should not (a) refer to the last aerodrome of intended landing, and what is the purpose of it as it essentially reads?

**CAA response:** The rule has been amended by replacing in (a)(1) the words *first aerodrome of intended landing* with *the aerodrome of intended landing*. The purpose of this provision is to ensure that if required an alternate is provided for each aerodrome of intended landing.

One commenter considered that (a)(2) is ambiguous as it says as long as there is an hour or more of better than 1000 feet ceiling above the instrument approach minima before estimated time of arrival is acceptable but the commenter does not think that this is as intended. The use of the word *least* is superfluous.

**CAA response:** CAA considers that the rule is not ambiguous and in the absence of similar comments has not amended the final rule.

One commenter stated that, in reference to (b), an unfiled alternate is not much use regardless of the weather at the alternate because you will not get any weather updates, and in the event of some types of equipment failure ATC will not know where you are going.

**CAA response:** CAA has some difficulty with the reference to an unfiled alternate. This rule prescribes when an alternate is required and a previous rule requires an alternate aerodrome to be nominated in the flight plan.

One commenter asked how does the pilot navigate to this alternate aerodrome, who is giving information on the current weather, is the aerodrome an attended aerodrome. The current requirement does not allow an unattended aerodrome to be nominated as an IFR alternate.

**CAA response:** For IFR the aircraft is required to be equipped with navigation equipment to navigate in accordance with the flight plan. The navigation requirements are the same for IFR regardless of whether proceeding to a destination or an alternate aerodrome. The matter of determining the weather at the alternate aerodrome is one to be established by the pilot before and during the flight. The current requirement does not prohibit the use of unattended aerodromes, though additional requirements are placed on air transport operations.

One commenter states that there are doubts about the integrity of the future application of (b)(3).

**CAA response:** This is a current provision and has been in use for a number of years without cause for concern.

#### **2.54 91.173 IFR flight plan information required [Final rule 91.407]**

One commenter considered that an exception is required for IFR flights that are purely local in character and mostly for training purposes only.

**CAA response:** The rule provides for ATC to accept lesser information and local procedures could be established for an abbreviated flight plan.

One commenter considered that the requirement to specify fuel endurance, persons on board, and survival equipment are of no benefit to ATC in handling an IFR flight plan. These requirements should be removed from this rule.

**CAA response:** As explained previously in response to similar comment about these items for the VFR flight plan, these items are relevant to the alerting service and any consequential SAR action.

One commenter stated that there is no reason for the requirement to submit a flight plan at least 30 minutes prior to the beginning of the flight.

**CAA response:** This period is required for ATC to enter the details in their system which will provide some surety that an IFR clearance will be available at the time of flight.

#### **2.55 91.177 Inadvertent change of flight plan [Final rule 91.411]**

One commenter considered that (1)(ii) should read "...or any variation of 0.01 or more...".

**CAA response:** CAA agrees and the final rule is amended accordingly.

#### **2.56 91.179 Take-off and landing under IFR [Final rule 91.413]**

One commenter stated that (f)(2) would seem to allow reduced visibility take-off regardless of the aircraft and aerodrome equipment.

**CAA response:** CAA agrees, in terms of the aerodrome, and the final rule is amended to say that the reduced minima must be authorised under Part 97. This will ensure that the runway is properly equipped and that any obstructions in the take-off flight path are taken into account. The present authorisation does not restrict aircraft other than by requiring additional equipment for two-engine propeller-driven aeroplanes and this is incorporated in the final rule.

One commenter stated that (g) does not include the requirement for the aircraft to be equipped with operative auto-coarsening or auto-feathering and this should be required. The commenter also believes that the term "RVR" is incorrect and the term should be "visibility".

**CAA response:** CAA agrees with these comments and the final rule is amended accordingly.

One commenter stated that DA is not defined.

**CAA response:** DA is included as an abbreviation in the final rule.

One commenter stated that the ICAO PANS OPS Doc 8168 and Annex 14 criteria recommends a 300 metre base line for departure fans of runways authorising 750 metre RVR for take-off. At present this criteria is only met at the Auckland and Christchurch aerodromes and this minima should not be authorised at other aerodromes.

**CAA response:** CAA agrees and applies ICAO PANS OPS criteria for the basis of authorising reduced take-off minima. Reduced take-off minima from certain runways are currently authorised under CASO 1 on the basis that these runways meet the criteria. CAA will be conducting a review of IFR procedures for the development of other rule Parts and this aspect will be included.

One commenter suggested that (e) should read "...shall immediately execute the appropriate..."

**CAA response:** CAA agrees and has amended the rule accordingly.

One commenter suggested that with the advent of GPS, allowance needs to be made for instrument approaches specified in Company documentation.

**CAA response:** CAA does not agree as GPS instrument approach procedures will be prescribed under Part 97 and as such need not be documented in company documentation.

One commenter suggested that while Part 121 provides for company minima to be specified there is no reason why a Part 91 operator should not have minima specific to the operation, perhaps approved by the Director.

**CAA response:** CAA does not agree as the minima for Part 91 operations will be that specified under Part 97. There is no reason for the rule to make a further provision for the Director to approve other minima.

One commenter stated that the specification of DA, DH, or MDA by the Director is in conflict with ICAO requirements and should be replaced with specified obstacle clearance altitudes. There should be an Advisory Circular providing for commonly used minima to allow for the unsophisticated operator to develop applicable DA, DH, or MDA.

**CAA response:** CAA agrees with this comment and intends to address this issue in other rule Parts being developed.

### **2.57 91.181 Operating in icing conditions [Final rule 91.421]**

Three commenters suggested that (a)(1) should also apply to VFR operations.

**CAA response:** CAA agrees and has included these requirements in the VFR rules.

**2.58 91.183 Minimum altitudes for IFR flights [Final rule 91.423]**

One commenter stated that the minimum safe altitude with respect to terrain is known to air traffic control, and a clearance will not be issued below this altitude, it is quite likely that the minimum altitude with respect to navigation aid reception may not be known, particularly in the event of satellite navigation system being available or in use on the aircraft.

**CAA response:** This issue will be addressed in the development of Part 95, IFR Altitudes.

One commenter noted that the horizontal distances are given in nautical miles in other rules and for uniformity this rule should use the same measurement.

**CAA response:** CAA agrees and in the final rule the distances are in nautical miles.

One commenter considered that (2)(i) and (ii) are deficient as they take no account of navigation tolerance applicable to VOR and NDB and will not provide sufficient separation from terrain. It is essential that the current navigation tolerances be retained with whatever buffers are applied (if any under these rules).

**CAA response:** CAA does not agree as these values are for flights without prescribed minimum safe heights, and navigation tolerance is not a factor in this instance. This criteria is adopted by most States, in the JAR operating rules, and are the ICAO standard.

**2.59 91.185 IFR cruising altitudes or flight level [Final rule 91.425]**

Two commenters drew attention to errors in the draft rule.

**CAA response:** The errors are acknowledged and corrected in the final rule.

**2.60 91.187 IFR radio communications [Final rule 91.427]**

One commenter stated that, currently, reporting at designated reporting points in a secondary radar environment is not required. The rule as written does not appear to address it.

**CAA response:** CAA agrees and has amended the final rule accordingly.

**2.61 91.189 IFR operations – two-way radio communications failure [Final rule 91.429]**

One commenter suggested a new paragraph to read "endeavour to establish communications by any alternative means possible". The commenter reasoned that their suggested amendment makes provision for use of such devices as cellphones if needs be and should be incorporated on the basis that some communication is better than none at all.



**CAA response:** CAA considers that this should not be in the rule as the alternative means is not deemed to be secure reliable equipment for continued two-way communication and their use could cause further uncertainty and confusion.

One commenter considered that reference should be made to use the SSR transponder facility if possible and provided a suggested amendment.

**CAA response:** The use of the SSR transponder is addressed in another rule and does not need repeating in this rule.

One commenter stated that consultation has taken place in recent months and with industry and the CAA with respect to level restrictions and radio communication failure. The commenter provided a suggested amendment which reflect the result of the consultation and amendments in hand to existing documents with respect to emergency procedures.

**CAA response:** CAA is satisfied that the suggested amendment was referred to and agreed to by representatives of the aviation industry and has incorporated them in the final rule.

#### **2.62 91.191 Category II and III precision approach procedures [Final rule 91.415]**

One commenter stated that he cannot find anything in the Act, Part III, which would allow the Director or the Minister to authorise Category II and III approaches with a specified piece of equipment inoperative in such critical operations. Because the Category's minima and equipment requirements are interlinked, nay interlocked, any absence or malfunctioning of items in the criteria invalidates the operation. The commenter considers that the provisions in (f) are equally invalid.

**CAA response:** The Act does not limit the Minister's rule making powers in this respect. The overall goal of rules must be safety orientated and this will be taken into account by imposing conditions and limitations on the operation. This rule is modelled on the FAR rule which has been in force for a number of years and any authorisation with inoperative equipment would have attached conditions and limitations taking into account the effect of the inoperative equipment.

#### **2.63 91.193 Category II precision approach procedure manual [Final rule 91.417]**

One commenter asks why identify a manual? The operations manual should cover this. It is simply just another procedure. The pilot has a set of procedures for the operation of the aircraft and these procedures should be in one location not split out into separate manuals.

**CAA response:** The operations manual is a requirement for air transport operations not for Part 91 operations. The final rule is amended to state that this is not a requirement for operations conducted by the holder of an air operator certificate issued under Part 119 which does away with separate manuals for such operations.

One commenter asks if the manual should not also be required for Category III approaches.

Another commenter believes that the manual and 91.195 should include Category III approaches.

**CAA response:** The final rule is amended to require a Category III precision approach procedure manual.

#### **2.64 91.195 Approval of Category II precision approach procedure manual [Final rule 91.419]**

One commenter considered that a rule similar to FAR 91.193 needs to be added in this rule. This is required to permit authorisation of smaller aircraft for Category II operations under Part 91. Such approvals are becoming more common in the USA and will no doubt be sought here in the future.

**CAA response:** The rule does not preclude small aircraft from performing such an approach. CAA will give further consideration to the issue and if necessary propose a rule amendment at a future date.

One commenter stated that the requirements in (d) is an increase on current requirements where the system is functionally tested during recency requirements for the aircraft and the crew.

**CAA response:** CAA does not agree as the rule does not preclude the functional flight test being conducted in conjunction with recency requirements for the aircraft and the crew.

#### **2.65 91.431 Notification of facility malfunctions**

**CAA comment:** This rule is to ensure that the holder of a certificate issued under Part 171, Aeronautical Telecommunication Service Organisations can take corrective actions and submit a facility malfunction report in compliance with Part 12, Accidents and Incidents. The same rule is contained in FAR Part 91 for the same reasons.

#### **2.66 91.201 General requirements [Final rule 91.501]**

Two commenters noted that the reference to 91.233 in (a) is incorrect and should be 91.237.

**CAA response:** The numbering of the final rules are changed and the reference is now correct.

**2.67 91.202 Location of instruments and equipment [Final rule 91.503]**

One commenter is concerned that this requirement should not be extended to include transponders in gliders. Gliders may have pre-set mounted transponders that will either transmit on code 1300 or on an identified pre-set code. The remote mounting still requires that the on-off selection switches be operable by the pilot but the code select switches are not operable in flight.

**CAA response:** The rule does not preclude the use of this equipment as the only operable item needed is the on-off switch which has to be readily seen and operated from the pilot position.

**2.68 91.203 Seating and restraints [Final rule 91.505]**

One commenter asked "what about children under 3 and infants who do not require a seat at present? This arrangement works well providing adequate safety and cost savings for the travelling public. Notwithstanding the above a person who is 3 (2) years of age or less may be held by an adult who is occupying a seat or berth. Two children whose combined weight does not exceed 77 kg and who can be safely secured by the safety belt or safety harness may occupy one seat or berth."

One commenter stated that there is a need to allow for the carriage of infants on an adult's lap with the appropriate restraint as is currently allowed.

One commenter noted that in its present wording this makes no provision for infants.

**CAA response:** CAA agrees that children under the age of 4 years do not require a separate seat or berth if sharing with an adult and have amended 91.109 (now 91.207) to this effect. This rule addresses the requirement to provide seating and restraints for aircraft for each person on board the aircraft. An exception is now incorporated for children under the age of 4.

One commenter, in relation to (f)(now 91.505(a)(4)(ii)), stated that probably all our members take flight training in their aircraft occasionally, if only in the form of a BFR every two years. Whilst the inclusion of this paragraph to aircraft principally engaged in flight training may have some validity, a blanket requirement does not. If the sentiment expressed in this paragraph can be supported to aircraft principally engaged in flight training, then it should be amended by adding "when principally engaged in flight training". Otherwise it should be deleted.

**CAA response:** CAA does not agree as the statement *when principally engaged in flight training* is not specific and open to wide interpretation. This is the

present requirement and CAA sees no safety justification for reducing this requirement.

Two commenters considered that hot air balloons should be excepted from the requirements of this rule.

**CAA response:** CAA agrees and has amended the final rule accordingly.

One commenter stated that this rule contradicted 91.109 which exempts parachutists from wearing restraints. This rule should provide an exception for aircraft used for parachute operations in accordance with Part 105.

**CAA response:** The final rule has been amended to remove the contradiction.

### **2.69 91.207 Minimum instruments and equipment [Final rule 91.509]**

The addendum proposing to require each aircraft in paragraph (a) to be equipped with a means of automatically recording and accumulating the time from each take-off until each landing attracted a number of submissions.

In general the majority of submissions, for and against, recognised the need to have hours recorded accurately.

The comments received were—

- (a) five submissions supporting the requirement; and
- (b) eight submissions expressing qualified support for the requirement; and
- (c) eight submissions that did not support the requirement.

The submissions of qualified support expressed concerns that the application of the requirement to either the larger aircraft types or to the operators of larger fleets such as aero clubs was unnecessary and that the aircraft or operator's systems were adequate to ensure correct hour recording.

The commenters that did not support the proposal based their statements on—

- (a) insufficient or no cost benefit analysis to show the need; and
- (b) no safety advantage; and
- (c) no requirement until a full equipment specification available; and
- (d) no such thing as a tamper-proof system; and
- (e) how can it be enforced; and
- (f) the use of other methods, such as tachometers currently used, should be acceptable.

**CAA response:** The CAA agrees with the general industry comments that the recording of time is a requirement. The recording of accurate time is the basis for maintenance requirements in the aviation industry. The emphasis on time recording has been highlighted by the suspected un-approved parts investigations being carried out by the CAA and reinforces the requirement that these hours be recorded accurately.

Tamper-proof time recording devices do not in and of themselves prevent incorrect time recording. The devices provide a tool for the CAA to provide safety related information to industry, and more importantly, the devices provide a direct tool for an operator to manage their aircraft, possibly more efficiently, definitely more effectively.

The requirement for all aircraft to be fitted with the devices ensures that there is a level playing field for all operators and this should encourage appropriate competition in the industry.

The CAA agrees there is no economically viable, absolutely tamper-proof, time-recording device. The New Zealand prototype viewed, two other New Zealand design researched, and an Federal Aviation Administration supplemental type certificate for a tamper proof meter, indicate that systems are available that accurately record hours and discourage tampering by defaulting to a faster accrual of hours.

The CAA disagrees, however, with the assertion that the benefit gained does not exceed the cost of fitting these meters. The costs involved in the provision of a suitable system were examined from the unit, installation, and out-of-service costs involved. In summary—

- (a) the unit costs are anticipated to be minimal and greatly outweighed by those advantages an operator could derive from the accurate recording of the flying hours for maintenance purposes:
- (b) depending on the type of design meeting the proposed New Zealand Technical Standard Order the installation costs will vary but the example viewed by the CAA had a reasonably straight forward installation process:
- (c) because of the potentially simple installation, out-of-service costs can be minimised also.

The subsequent savings by the CAA in its ongoing regulatory tasks are substantial, although the CAA will have to ensure it has appropriate procedures in place to ensure the benefits are realised. These savings are passed directly onto the industry by making the regulatory actions of the CAA more efficient and allowing some of the costs previously allocated to lengthy investigations to be used for other purposes.

The CAA agrees that a specification should be provided for industry to begin developing the required devices. Unfortunately limited CAA resources have prevented development of a New Zealand Technical Standard Order until after the rules re-write has been completed. The provision of the requirement in the final rule provides for the completion of the rule and reduces the future workload in the development and introduction of the NZTSO as the requirement already exists.

The CAA agrees with those comments by the larger aircraft operators and those operators of aircraft without finite-life components and has amended the rule accordingly.

One commenter considered that paragraph (14) would be better worded as follows "that the electrical system(s) is(are) functioning correctly".

**CAA response:** The final rule is amended using words similar to this comment.

#### **2.70 91.209 VFR instruments and equipment night [Final rule 91.511]**

One commenter stated that helicopters are currently allowed to fly cross-country (beyond 25 nm) and CASO 20 attempted to prescribe sensible minimum instrumentation for this. However, in the printing, CASO 20 paragraph 3.4.1.3. wrongly referred to lesser instrument fit in 3.4.1.2 instead of 3.4.1.1. Somewhere in Part 91 or Part 135, there should be a minimum instrumentation list as there is in CASO 20 for night VFR flight.

**CAA response:** CAA does not agree as the additional equipment referred to in CASO 20 for commercial operations are not applicable to Part 91 operations. Additional instruments and equipment for air transport operations are prescribed under Part 135.

**CAA comment:** A means of indicating rate of turn and slip was prescribed for IFR flight in the NPRM. It is presently prescribed under CASO 9 for VFR night flights and on this basis the requirement is now placed in this rule.

#### **2.71 91.211 IFR instruments and equipment [Final rule 91.517]**

One commenter stated that aircraft such as the Saab 340 are not equipped with, nor do they require, a turn indicator. It would serve no useful purpose to retrofit such a device.

**CAA response:** CAA took this comment into account and found that FAR part 91 has a provision that aircraft with a third attitude instrument indicator that is usable through 360° of pitch and roll does not need to be equipped with a means of indicating turn. This same provision is now included in the final rule.

One commenter stated that they can see no reason for the requirements in (b) in an airline environment.

**CAA response:** CAA has concluded that paragraph (b) is not valid and has been deleted in the final rule. This requirement, if applicable, is prescribed under the aircraft certification rules rather than as an operational requirement.

One commenter requested that in (a)(5) the words "and calibrated in not less than 50 foot increments" should be added.

**CAA response:** This is not required in this rule as this is the standard prescribed in Appendix A of this Part.

One commenter suggested that (a)(1) should read "rate of turn and slip or skid".

**CAA response:** CAA does not agree as the terminology used throughout the rule Parts refers to *turn and slip*.

One commenter suggested that (a)(4) should include "inertial reference system".

**CAA response:** CAA does not agree as this is equally valid for an inertial reference system.

#### **2.72 91.213 Category II precision approach procedure [Final rule 91.521]**

One commenter asked does (a)(10) meet current ICAO requirements or is a DME or GPS a satisfactory alternative to a marker beacon?

**CAA response:** Paragraph (a)(10) is in accordance with the ICAO standards and at this time DME or GPS are not an alternative to a marker beacon.

#### **2.73 91.215 Emergency equipment [Final rule 91.523]**

One commenter questioned the reason for the 1500 kg weight break in (a). The commenter suggested that a 19 passenger break be used for this requirement, if in fact there is justification for this archaic requirement. Other forms of passenger transport this size do not have such stringent requirements and the commenter doubts the need for it in aircraft in excess of 1500 kg MCTOW not even air transport aircraft. This section should be in Part 26 as it seems to impinge on occupant safety, which seems to be the criteria.

**CAA response:** CAA agrees that the 1500 kg weight break is not valid and has adopted the FAR 91 requirement applicable to aircraft having a certificated seating capacity, excluding any pilot seat, of 10 seats or more. CAA does not agree that this requirement should be in Part 26 as this is an operational requirement and is rightly located in Part 91. Part 26 only prescribes instruments and equipment applicable to aeroplane certification.

One commenter noted that there is no mention of approval in (a)(1) and asks is this an option.

**CAA response:** The requirement for this and other equipment is that they must meet the applicable standard specified in Appendix A of this Part.

One commenter believes that the MCTOW should be less to include most light aircraft.

**CAA response:** CAA does not agree nor do other commenters. CAA believes that the relevant factor is the number of persons being carried and has based the rule on this premise.

One commenter referring to (d) asks how do you clearly indicate the method of operation of an axe?

**CAA response:** CAA agrees and has deleted this from the final rule.

#### 2.74 91.217 Flights over water [Final rule 91.525]

Three commenters noted that (a)(4) referred to a non-existent (b)(2).

**CAA response:** The final rule has been amended with reference to the correct paragraph.

One commenter stated that the number of ELTs required to be carried will increase as at present only two ELTs are required. This is added cost with minimal increase in safety.

**CAA response:** CAA agrees and has amended the rule in accordance with the present requirement.

One commenter stated that the requirements for safety equipment detailed for helicopters in CASO 20 seem to have been lost. Helicopters descend rapidly in autorotation and do not float for long. This gives the passengers little time to find stowed jackets and to don them. Without pop-out floats it is unlikely that anyone other than crewmembers would escape from a ditched helicopter. There is no reference to pop-out floats, or immersion suits in their absence. The commenter believes that a stowed lifejacket is insufficient equipment out to 100 nm from land in a single-engine helicopter. New Zealand, unlike the UK, does not have a fully integrated SAR system with rescue vehicles covering the country and the coastline.

**CAA response:** The requirements prescribed under CASO 20 are applicable to commercial operations. The requirements of this rule relate to the present requirements prescribed for operations that are equivalent to those to be conducted under Part 91.

One commenter considered that multi-engine aircraft not capable of continuing flight with one or more engines inoperative should be tied to a requirement similar to (a)(1).

**CAA response:** CAA agrees and has amended the final rule accordingly.



## 2.75 91.223 Radio and navigation equipment for IFR overwater operations [Final rule 91.519]

One commenter stated that the rule is modelled on FAR 91.511 which only applies to large aircraft. The commenter does not object to the rule covering all aircraft but considers it essential for the rule to be amended. The FAR and the informal draft CAR Part 91 made provision for aircraft with two VHF radios to only have to carry one HF radio and this should be the case in the final rule. It is also unreasonable to expect light aircraft to be equipped with two independent electronic navigation sets. This requirement has been removed from large aircraft in the USA and it would be an inappropriate requirement for New Zealand operators.

One commenter consider the requirement for two HF radios is impractical for light aircraft.

Another commenter asked why the increase of requiring two HF radios for oceanic IFR operations. The commenter reasoned that provided operations are conducted below 10 000 feet there is no danger to international commercial traffic through the loss of HF communications as communication can be established when in VHF range.

**CAA response:** CAA agrees with these comments and has deleted the requirement to have two independent communication equipment. The final rule does not distinguish between IFR and IFR overwater operations on the basis that the equipment requirement is the same for both cases.

One commenter considered that communication should be defined as either voice or data.

**CAA response:** The rule does not preclude the use of communication by data. CAA is conducting an on-going study of this equipment and in due course anticipates that the specification of such equipment will be included in Appendix A of this Part.

One commenter stated that with the reliability of GPS units, the addition of a second GPS unit would not provide any increase in the reliability of navigation. This principle has been applied to ground based DME units where again duplication provides no increase in reliability.

**CAA response:** The requirements for the use and the standards for GPS equipment under IFR are presently being developed and will be promulgated as an NPRM for comments. Any required amendment to this rule will be included in the NPRM.

**2.76 91.225 Aircraft communication equipment [Final rule 513]**

One commenter stated that this rule does not allow for NORDO flights and is apparently in conflict with 91.127(a)(1).

**CAA response:** CAA agrees and has made provision for NORDO flights in the final rule.

**2.77 91.227 Aircraft navigation equipment [Final rule 91.519]**

One commenter stated that the terms VSM and RVSM are not defined.

**CAA response:** These two terms are now included in the definitions.

One commenter stated that it would appear that the rule would require two autopilots and two altitude alerts.

**CAA response:** The final rule is amended to remove the requirement for two auto-pilots and two altitude alerts.

One commenter considered that in (c), the words "or VSM" should be deleted.

**CAA response:** The final rule is restructured and the word VSM in this rule is used in its proper context.

**2.78 91.229 Emergency locator transmitter [Final rule 91.529]**

One commenter stated that presently balloons are not required to carry an ELT and they should be included in the exceptions to this rule.

**CAA response:** CAA does not agree as the requirement to carry this equipment to assist any SAR action is as valid for balloons as it is for other aircraft. Some balloons can carry more than 10 passengers and in the event of an emergency, and given that their flight path may be difficult to predict, an ELT would be invaluable in locating the balloon.

One commenter expressed a view that gliders should not be excepted from carrying ELT. There have been a number of long visual searches for crashed gliders that would have been shortened considerably if the gliders were equipped with ELT. They are not expensive, they weigh very little, and require little maintenance. If it is important for every other aircraft to carry ELT then a glider should as well.

**CAA response:** CAA agrees and the final rule requires gliders to be equipped with an ELT as from 1 April 1998.

One commenter considered that (b)(2) should read "manufacture recommended battery life".

**CAA response:** CAA agrees and has amended the rule accordingly. This paragraph addresses the maintenance of ELT's and as such is relocated to Subpart G - Maintenance in the final rule.

One commenter supported the requirement for ELT but considered that single-seat aircraft should be excepted from the requirement as they are presently. The commenter's understanding is that the exception for single-seat aircraft was on the basis that if an individual wishes to accept the risk, he should be entitled to do so as there are no passengers for the risk.

**CAA response:** CAA does not agree as SAR action is conducted once it becomes known that any aircraft is overdue and this includes single-seat aircraft. As stated previously in response to other comments the purpose of the ELT is for the conduct of effective SAR. The absence of an ELT can make the location of a crashed aircraft difficult resulting in delay providing succour to any injured occupants and involve considerable increased expenditure for the State.

One commenter considered that provision should be made to permit aircraft to fly normal operations for short periods of time without ELTs. Not all areas have equipment capable of testing these items and failure, requiring repair, will occur. To ground an aircraft during these times is unreasonable and spares for every type of unit is not realistic. A compromise where a carry-on portable unit be permitted during these times would be reasonable.

**CAA response:** CAA does not agree as it would be unreasonable not to provide this equipment for the benefit of the occupants in the event of an emergency.

#### **2.79 91.231 Oxygen [Final rule 91.531]**

One commenter stated that this rule and 91.233 and 91.235 are obviously based on FAR Part 121 and are not appropriate in a Part 91 environment. Oxygen requirements for Part 91 operations are adequately covered in 91.111 and hence 91.231, 91.233, and 91.235 should be removed entirely.

**CAA response:** CAA does not agree in that that the proposed rule 91.111 prescribed the use of oxygen and this rule and the following two rules prescribe equipment and oxygen requirements for compliance with 91.111.

Three commenters stated that there is a contradiction between this rule and 91.233. This rule requires oxygen above 10 000 feet while 91.233 only requires oxygen for flights in excess of 30 minutes between 10 000 and 13 000 feet AMSL.

They suggested that the words "for more than 30 minutes" should be added to the rule.

**CAA response:** CAA agrees and the final rule is amended accordingly.

One commenter stated that the passenger "drop down" systems usually do not have an indicator of the amount of oxygen available but does have flow indicators in the mask inlet tubing. The requirement for indicating the amount of oxygen available in (1)(i) should be deleted.

**CAA response:** The final rule is amended making this requirement applicable to flight crew equipment only.

## **2.80 91.235 Oxygen for pressurised aircraft [Final rule 91.535]**

One commenter considered that after (a)(5)(ii) the word should be "or" not "and".

**CAA response:** CAA agrees and the final rule is amended accordingly.

One commenter stated that the requirement in (d)(2)(ii) for two outlets in washrooms is not, we understand, a certification requirement and should be deleted. Most, if not all, business-type jets would be unable to comply with this. Whilst we have not investigated this in depth, we believe the requirements of this rule do not match up with aircraft certification requirements and this aspect should be investigated.

**CAA response:** CAA agrees and the requirement for two oxygen outlets in washrooms is not required in the final rule.

One commenter stated that the demand mask plus goggles serves both the functions of (a)(1) and (ii) at present.

**CAA response:** The rule does not preclude the use of a demand mask plus goggles for compliance with this rule.

One commenter stated, with reference to (a)(3), that, currently, protective breathing equipment is required for each fire extinguisher that is carried in the aircraft.

**CAA response:** CAA reviewed the oxygen requirements to ensure that they are compatible with the aircraft certification requirements under Part 21 which incorporates FAR Part 23 and 25. The requirements of (a)(3) are compatible with the aircraft certification standards and therefore adopted in this rule. Any departure from the aircraft certification standards would incur additional expenditure for the operators of New Zealand without an identified safety benefit.

One commenter considered that the words "each aircraft with a pressurised cabin that is to be operated at altitudes..." used in this rule are incorrect and should read "each aircraft, with a pressurised cabin, that is to be operated at altitudes".

**CAA response:** CAA agrees and the final rule is amended accordingly.

**2.81 91.237 Inoperative instruments and equipment [Final rule 91.537]**

One commenter considered that the restriction on operations under (c) to gliders and single-engine aircraft under 2730 kg MCTOW is not practical, has no safety benefit, and is inconsistent with FAR 91.213. Any aircraft should be able to operate without an MEL in accordance with (c) provided the requirements are met. For example, take a Piper Navajo, about 3500 kg MCTOW and two engines without an MEL. The aircraft has an unserviceable ADF and the pilot wishes to fly VFR from Auckland to Ardmore. The aircraft cannot legally move until all items are serviceable. You would be extremely unlikely to find an aircraft in this country that isn't carrying a minor defect of some description, most of us have some form of recording and advising other pilots or engineers of these items. We have the technical log for recording defects so let people record them and make the appropriate maintenance decisions based on the circumstances.

**CAA response:** CAA agrees and has amended the final rule to allow aircraft that do not exceed 5700 kg MCTOW to be operated without an MEL.

One commenter stated that (b) effectively prohibits the use of MEL. For example, when weather radar is required, the rule precludes flight with it inoperative. The rule must allow the use of an approved MEL even if the equipment is required by type certification or Parts 91, 121, or 135.

One commenter stated that it is very difficult to determine whether there are any differences between this proposed rule and the current requirements. Currently, they can release an aircraft on the MEL with unserviceable weather radar provided there is no ice or rain forecasted but does not appear to be the case under (b).

One commenter suggested that allowance should be made for operation without weather radar under the MEL where provision is made for operation until such time as the aircraft is passing through a base where the weather radar can be repaired.

**CAA response:** CAA agrees with the comments and has amended the final rule to allow for items of equipment in the MEL similar to those presently authorised.

One commenter stated that it appears in this day and age to be unnecessary to have a rule specifying the minimum equipment of an aircraft. Aircraft are built under specific certification and minimum equipment lists specify the minimum that can be carried. It is suggested that this rule be updated to meet the current certification.

**CAA response:** CAA does not agree that this is the case as, in addition to the aircraft certification requirements, Part 91 prescribes instruments and equipment for operational requirements. The MEL addresses the instruments and equipment

required for specific operations under Part 91 stating items that can be inoperative for certain types of operations.

**CAA comment:** Commenters should note that NPRM 91.237 has been separated into two rules which is to clearly identify the two different requirements of the MEL specification versus the requirements for approval.

**2.82 91.239 SSR transponder and altitude reporting equipment [Final rule 91.541]**

One commenter considered that the exception in (b) that permits gliders and balloons to operate without Mode C should be removed. We are sharing the same airspace and deserve the protection of all aircraft having Mode C equipment. An altitude encoder is not heavy, doesn't use much power, requires very little maintenance, and is not expensive. This is a matter of safety for all airspace users and should be acted upon accordingly.

**CAA response:** CAA agrees and the final rule will require gliders and balloons to be so equipped as of 1 April 1998.

**2.83 91.241 Weather radar [Not included in the final rule]**

One commenter stated that this requirement is not contained within FAR 91 and is not appropriate in this country either. It should be included in Parts 121 and 135 as appropriate. Many aircraft over 5700 kg would not be able to have the weather radar fitted.

**CAA response:** CAA agrees and has amended the rule accordingly.

Two commenters suggested that the rule should refer to *turbine-engine powered aircraft* to be consistent with the terminology used elsewhere in this Part.

**CAA response:** These comments are not now relevant as the requirement for weather radar is not required in the final rule.

**2.84 91.243 Ground proximity warning system [Not included in the final rule]**

One commenter stated that this requirement is not contained in FAR Part 91. It is not appropriate for Part 91 operations and should be contained in Part 121 and 135.

**CAA response:** CAA agrees and this requirement is not included in the final rule.

Three commenters considered that, with the spurious warnings obtained with GPWS in New Zealand, the requirement should be only for turbojet powered aircraft. The Canadian legislation is more appropriate to New Zealand as it only

requires GPWS for turbojet aircraft due to spurious warnings experienced by turbine-engine aircraft.

One commenter stated that accidents which involve controlled flight into terrain still occur with aircraft fitted with GPWS. Statistics on light twin commuter aircraft with seating capacity of 10 to 30 seats indicates that fitment of GPWS would not appreciably effect the safety of this type of operation in New Zealand.

One commenter considered that the weight-passenger-break in (b) should be amended to read a certificated seating capacity of more than 20 passengers to be in accord with the weight of 5700 kgs.

**CAA response:** This requirement is not included in the final rule for Part 91 operations and therefore there is no response to these comments.

### **2.85 91.245 Altitude alerting system or device turbojet powered aircraft [Final rule 91.543]**

One commenter suggested that (b) needs to be amended to exempt restricted category aircraft, and VFR-only aircraft, from the requirements to carry this equipment. Aircraft like the Venom and Vampire would not physically be able to have this equipment installed.

**CAA response:** CAA agrees and the final rule contains an exception for any aeroplane that has an airworthiness certificate issued in the restricted or special category.

One commenter considered that the rule should include turbo-fan aircraft as the definition of turbojet does not include turbofan.

**CAA response:** CAA agrees and has amended the final rule accordingly.

One commenter suggested that the word "turbojet engine" should be replaced with the word "turbine-engine".

**CAA response:** The rule now refers to turbojet or turbofan engines for completeness. Both of these terms are now defined and used when needed throughout the rules.

### **2.86 91.253 General maintenance requirements [Final rule 91.603]**

Three commenters thought 91.233 should read 91.237.

**CAA response:** The CAA agrees and has ensured the cross references are correct.

One commenter thought the wording 'at the next required inspection' should read 'in accordance with the requirements of the MEL'.

**CAA response:** The CAA disagrees. At the next inspection the item may still be permitted to be inoperative under 91.537 but the requirement ensures that the item is re-examined at the next inspection.

**CAA comment:** The CAA has amended the rule to better reflect which required inspection is being referred to.

One commenter suggested corrections for glider engineers.

**CAA response:** The CAA considers this to be covered by Part 104 and Part 43.

### **2.87 91.255 Required Inspections [Final rule 91.605]**

One commenter suggested that the re-scheduling after the 10% extension should be unnecessary as the release being certified was for the next 100 hours.

**CAA response:** The CAA disagrees. The nominal inspection period is 100 hours and inspections would, ideally, be carried out exactly each 100 hours. The extension provision is not provided as a planning tolerance and should only be used when the nominal period has been completed. If the extension provision was intended to be a planning tolerance the rule would state 110 hours with no latitude.

One commenter stated that there was a conflict in that 91.255 says all aircraft must be inspected and AOC aircraft are not exempt in 91.251(d).

**CAA response:** The CAA agrees and the rule has been amended.

One commenter suggested that 91.269 should be added for consistency.

**CAA response:** The CAA disagrees as the annual review of airworthiness is not considered to be a maintenance function.

### **2.88 91.259 Radio station inspections [Final rule 91.609]**

One commenter suggested that these should be 48 months for gliders.

**CAA response:** The CAA disagrees and the maintenance programme required under Part 104 will be required, as a minimum, to address the applicable items from Part 91. Rule 91.601 gives the specific exceptions to the Part 91 requirements for gliders.

### **2.89 91.261 Altimeter tests [Final rule 91.611]**

One commenter suggested that the rule be reworded to talk about only altimeters with altitude reporting equipment.

**CAA response:** The CAA disagrees as the intent of the rule is to address all altimeters.



One commenter suggested that these should be 48 months for gliders.

**CAA response:** The CAA disagrees and the maintenance programme required under Part 104 will be required, as a minimum, to address the applicable items from Part 91. Rule 91.601 gives the specific exceptions to the Part 91 requirements for gliders.

#### 2.90 91.263 SSR transponder tests [Final rule 91.613]

One commenter suggested that these are testing 'on entry to airspace'.

**CAA response:** The CAA disagrees. The transponders are checked for satisfactory reporting by the ATS unit on entry to the TMA but this check does not constitute the required maintenance.

One commenter suggested that the specific reference to Subpart D be put in.

**CAA response:** The CAA agrees but recognises that should the equipment subpart change then the maintenance subpart would also need amendment. To aid future administrative actions and reduce amendment costs the general reference has been retained.

One commenter suggested that these should be 48 months for gliders.

**CAA response:** The CAA disagrees and the maintenance programme required under Part 104 will be required, as a minimum, to address the applicable items from Part 91. Rule 91.601 gives the specific exceptions to the Part 91 requirements for gliders.

#### 2.91 91.265 ELT tests [Final rule 91.615]

One commenter suggested that the checking should be left up to the operator 'if they are unsure of the performance' or, alternatively, at battery changes.

**CAA response:** The CAA disagrees. Under the commenter's suggestion the only instance when an operator could be unsure of the performance of an ELT would be at the time of an accident.

One commenter suggested that the specific reference to Subpart D be put in.

**CAA response:** The CAA agrees but recognises that should the equipment subpart change then the maintenance subpart would also need amendment. To aid future administrative actions and reduce amendment costs the general reference has been retained.

#### 2.92 91.269 ARA [Final rule 91.619]

One commenter suggested that this was the same as the annual in 91.255.

**CAA response:** The CAA disagrees as the annual review of airworthiness is not considered to be a maintenance function.

**2.93 91.273 Maintenance programmes [Final rule 91.621]**

One commenter suggested this should be turbo-jet or turbo-fan.

**CAA response:** The CAA agrees and a definition of turbine-powered has been added to Part 1.

**2.94 91.275 Approval of maintenance programmes [Final rule 91.623]**

One commenter suggested this should be clarified in the advisory circular as to the 10% clause.

**CAA response:** The CAA agrees and will be providing advisory circular information on maintenance programmes.

**2.95 91.281 Technical Log [Final rule 91.629]**

Two commenters suggested that the contents of the Technical Log were too complex for large air transport operators and the responsibility was in fact with the operating organisation not the pilot.

**CAA response:** The CAA disagrees that the content is too complex for large air transport operators. The information is considered to indicate what is required for the pilot to determine the maintenance status of the aircraft. The CAA agrees that the organisation has a responsibility and this is covered by the use of the term operator, as defined in Part 1. The pilot, however, also has a degree of responsibility and this is covered in the definition of operator.

Two commenters suggested that the rule be reworded to allow other documents acceptable to the Director.

**CAA response:** The CAA agrees and considers that the wording of the rule allows the flexibility in the format and provision of the information in the Technical Log.

One commenter didn't want to be locked into the CAA form.

**CAA response:** The CAA agrees and has stipulated the contents only, not the format.

One commenter didn't want the Technical Log for private operations.

**CAA response:** The CAA disagrees. All pilots require the information presented in the technical log to enable them to determine the maintenance status of the aircraft.

One commenter suggested that the rule provide for the alternate means of compliance.

**CAA response:** The CAA agrees and has stipulated the contents only, not the format. In fixed base operations the alternative format may be other than an actual form, such as a suitable computer system providing printouts to the pilot.

One commenter suggested that the log be kept with logbooks - that is 6 months after retirement.

**CAA response:** The CAA agrees and the rule has been amended.

One commenter didn't want the Technical Log for private sole pilot/owner operations.

**CAA response:** The CAA disagrees. All pilots require the information presented in the technical log to enable them to determine the maintenance status of the aircraft. By stipulating the contents only and not the format an owner operator may use the logbook itself to record the required information. In this situation the logbook and the technical log would be the same document but the CAA cautions operators as to the carrying of aircraft logbooks in the aircraft they relate to.

One commenter didn't see the need to record time when the tacho was used and simply reading the tacho on entry to the aircraft provided the required information.

**CAA response:** The CAA disagrees. The tacho time is a useful aircraft usage management tool but tacho time is not considered to be maintenance time. Also, without a record of the time that is accrued, there is no assurance that the tacho is functioning correctly.

**CAA comment:** The technical log is required primarily for away from base operations and where the logbook is not available. Where the logbook is available to record the required information, and is available to the pilot prior to flight, then the logbook should be completed.

## **2.97 91.301 Aerobatic flight [Final rule 91.701]**

One commenter considered that the provisions of (b) and (c) are not appropriate here and should be included in Part 61.

**CAA response:** CAA agrees and in response to suggestions from organisations involved in aerobatic flight will introduce an aerobatic rating under Part 61. The final rule therefore refers to an aerobatic rating issued under Part 61.

Two commenters considered that aerobatic flight should be defined in this Part or Part 1.

**CAA response:** CAA agrees and the definition of aerobatic flight is to be included in Part 1.

One commenter considered that (c) should include the wording in the aerobatic type certification "in aerobatic flight for the following manoeuvres".

**CAA response:** This comment is not now relevant with the introduction of an aerobatic rating.

One commenter considered that (a)(2) should specify a lateral distance from such areas.

**CAA response:** CAA agrees and the final rule prescribes a lateral distance of 2000 feet.

One commenter stated that their association would like the ability to approve "over-water" safety courses for hang gliders. The flight manoeuvres involved in these safety courses would include aerobatic flight over water and under a height of 1500 feet.

**CAA response:** Any exception to this rule will be addressed in Part 106, Operation of Hang Gliders.

### 2.98 91.303 Aviation events [Final rule 91.703]

One commenter considered that aviation events should be defined in Part 1 or Part 91 but not in the rule.

One commenter considered that it would be more logical to place the definition of aviation event at the beginning of this rule.

**CAA response:** CAA agrees with the first commenter and the definition of an aviation event will be included in Part 1.

One commenter noted that the FAR Part 91 permit aerobatics below an altitude of 1500 feet above the surface instead of 3000 feet required in New Zealand.

**CAA response:** After further consultation with aerobatic organisations, the new rule is amended to require an aerobatic rating for aerobatics below 3000 feet. CAA believes that this provision will ensure that persons conducting aerobatics below 3000 feet will be competent to do so.

One commenter considered that the definition of congested area in the legal analysis "a settlement of 2 or more buildings in an isolated area" is far too restrictive if you relate it to rural areas. We do not need to rely on US case law. The adjective "populous" defined as "thickly" inhabited" is better than "congested" which means "obstructed or blocked" in the Oxford Encyclopaedia Dictionary.

**CAA response:** The CAA has decided to retain the term congested area in the interests of harmonisation with the US system. A suitably flexible definition has been developed to give further guidance on the meaning of this term.

**2.99 91.305 Parachute drop operations [Final rule 91.705]**

One commenter considered that the rule should require procedures to ensure that aircraft propellers are stopped during parachute descents at aerodromes.

**CAA response:** CAA does not entirely agree as such a rule can unnecessarily disrupt the operations of other aircraft. Part 105, Parachuting Operations, introduces the requirement for parachuting landing areas (PLA). The specification for a PLA will include minimum distances for separation between any PLA and the aerodrome movement areas for the simultaneous operation of parachutes and aircraft. In the case of a PLA which do not meet the separation specifications, aircraft operations are not allowed to be conducted simultaneously with parachute drops.

Two commenters stated that (7) needs a provision for the carriage of persons who, because of operational requirements, need to be able to move about the cabin of the aircraft and therefore cannot be restrained in a seat. Typical examples would be a parachute jumpmaster who is required to dispatch students but who will not personally carry out a descent, or a film camera person who needs to film within the aircraft but cannot do so in a seat.

**CAA response:** CAA agrees and has amended the rule accordingly.

One commenter considered that the use of the term "emergency or reserve parachute" is very narrow. The commenter suggests the use of the term "parachute assembly" which is defined in Part 105 as being the complete set of parachute equipment.

**CAA response:** CAA agrees and this terminology is used in the final rule.

One commenter considered that the wording of (b)(8) is too restrictive in only requiring compliance by persons carried in the aircraft who are actually intending to carry out a descent. The wording should apply to each person carried in the aircraft during parachute operations.

**CAA response:** CAA agrees and has amended the final rule accordingly.

One commenter considered that the intent of (c)(1) is quite clear but a strict interpretation would not allow a change of plan whilst airborne if weather or other operational conditions required a change. The commenter suggested that the words "and adequate notice of any change of detail of the proposed descent whilst in flight" be added.

**CAA response:** CAA does not agree as the rule does not preclude a change of plan while airborne. This rule is to ensure that the pilot is familiar with details of the proposed descent and any change required while airborne due to climatic conditions and the like are matters which the pilot-in-command has to agree to in that capacity.

One commenter considered that the requirement under (c)(2) is too restrictive and ignores people who may be operating under a special approval by the Director. Such special approvals may be required for the transition period for Part 149 implementation or for commercial operations. The commenter suggests that the words "or has been otherwise authorised by the Director to carry out parachute descents" be added.

**CAA response:** CAA agrees and the final rule includes an alternative approval by the Director.

### **2.100 91.307 Emergency parachutes [Final rule 91.707]**

One commenter stated that their association members do carry a reserve parachute (a form of parachute) in the event of an emergency in a hang glider. These reserve parachutes are made to technical standards laid down by manufacturers which are not the C-23 standards.

**CAA response:** This is a matter to be addressed in Part 106, Operation of Hang Gliders, as it is not the equipment referred to in this rule.

One commenter considered that the rule title should read "Emergency parachute assemblies" to more accurately reflect that an emergency parachute is a complete assembly of harness, container and parachute. The same wording should also be used in (a) instead of parachute.

**CAA response:** CAA agrees and this terminology is used throughout the final rule.

One commenter considered that the list of hazards under (a)(2) must be totally inclusive of all hazards to the parachute assembly and suggested that (a)(2) should read "has been adequately protected from damage especially from ultraviolet light, acid, and any other substance that may be deleterious to the materials from which the parachute assembly has been constructed".

**CAA response:** CAA agrees and the final rule refers to *damage or condition or substance that may be harmful to the materials from which the parachute assembly has been constructed*. The use of this terminology makes it all inclusive rather than list conditions which may not be complete.

One commenter considered that (c)(1) should make provision for the use of "approved type" equipment that has originated in other jurisdictions such as the Eastern block countries or China which is not manufactured under a type certificate system. The commenter suggested a more inclusive wording by adding the words "or other standard acceptable to the Director" to (c)(1).

**CAA response:** CAA does not agree as such parachutes must be shown to meet the prescribed specifications to ensure the integrity of the parachute assembly.

**2.101 91.309 Towing gliders [Final rule 91.709]**

One commenter asked is there a place for flight instructors who are current tow pilots holding a rating issued by a gliding organisation to be able to certify a person's log book for the purpose of a tow rating?

**CAA response:** Pilots holding a rating issued by a gliding organisation will be required to apply for the issue of a Part 61 glider tow rating. Their gliding organisation rating will be accepted for the issue of the Part 61 rating.

One commenter stated that, in accordance with the stated purpose of Part 104, the rules relating to the towing of gliders should be incorporated in Part 104.

**CAA response:** CAA does not agree as Part 91 is applicable to all aircraft while Part 104 is specifically applicable to gliders and powered gliders.

One commenter considered that the provisions of (b)(4) would permit every tow-pilot to create their own signals for use when towing gliders. This is not acceptable as a set of well established and internationally recognised signals are presently used and the continued use of these signals will enhance safety in the future. The commenter suggested that (b)(4) be amended to require the use of signals, as promulgated by the approved gliding association.

**CAA response:** CAA agrees and has amended the final rule accordingly.

**2.102 91.311 Towing objects other than gliders [Final rule 91.711]**

One commenter considered that there is a requirement for additional information to be included in this rule from both a safety and operational view. The commenter suggested the addition of two items as follows—

1. the tow aircraft is equipped with an approved quick release system; and
2. a positive en-route rate of climb with maximum continuous power is available while carrying out the tow operation. (taken from CASO 9 section 4.3.5)

**CAA response:** CAA agrees and has amended the final rule accordingly.

**2.103 91.313 Restricted category airworthiness certificate – Operating limitations [Final rule 91.103]**

One commenter considered that (b) should be amended to permit the carriage of non-essential persons when such persons are not carried for hire or reward. This will permit private operations in restricted category aircraft. Such a provision should not be of concern as restricted category aircraft are certified to a traceable standard where an experimental aircraft is not and thus not permitted to carry passengers.

One commenter stated that aircraft running on Mogas were issued with restricted category airworthiness certificates some years ago and this proposed rule means that such aircraft will no longer be able to carry passengers. Unless there is significant evidence that this is life threatening, that the likes of a Cessna 172 cannot carry passengers because it has a restricted airworthiness certificate, then this rule needs re-writing.

**CAA response:** CAA agrees and paragraph (b) is not included in the final rule.

**CAA comment:** This rule and the following rule about special category airworthiness certificates have been re-located to Subpart B in the final rule. CAA considered that it was appropriate to locate these rules in Subpart B for ease of reference.

One commenter suggested that (b) should read "carry any person on or in the aircraft".

**CAA response:** CAA does not agree as the carriage of persons is addressed in another rule.

#### **2.104 91.351 Applicability**

One commenter considered that virtually all aircraft in use in New Zealand are "foreign aircraft" in that only a few were manufactured in this country. To retain the intent of this rule, the commenter suggested that the Subpart title and this rule should refer to "foreign registered aircraft".

**CAA response:** CAA agrees and has amended the final rule accordingly.

#### **2.105 91.355 Special rules for foreign aircraft operations**

One commenter considered that there needs to be an Advisory Circular explanation of how the provisions of (c)(2)(ii) are going to be met.

**CAA response:** CAA does not agree, as in essence this is done by reference to the AIP as is the case in any other country.

One commenter considered that the provisions of (c)(1)(i) should also apply to VFR flight.

**CAA response:** CAA does not agree as this would be too specific for VFR operations. The requirement is intentionally broad as it covers flights in controlled airspace and in any other airspace where radio communication is required.

#### **2.106 91.403 Noise level compliance**

One commenter considered that this rule should only apply to standard category aircraft as in FAR 91.801. This will be necessary to permit some of the



experimental warbird aircraft that are being considered to continue operating after the year 2002.

**CAA response:** CAA does not agree as it considers that this should apply to every aircraft for the protection of persons and property. The rule does not preclude the granting of an approval to operate above Mach 1 to the type of aircraft referred to by the commenter.

One commenter considered that (2) should include a provision for certification by an acceptable organisation.

**CAA response:** CAA does not agree as certification is a function of a state's civil aviation authority and is not extended to any other organisation.

### 2.107 91.405 Aircraft sonic boom

One commenter suggested an amendment to (b), lines three and four, to read "limitations which ensure that flights entering or leaving New Zealand will not cause a sonic boom to reach the surface of the earth within mainland New Zealand or immediate island territories for the prevailing meteorological conditions."

**CAA response:** CAA does not agree as it considers that the rule adequate as written and the Civil Aviation Act limits the applicability of the rules to New Zealand.

## Appendix A – Instrument and equipment specifications

### 2.108. General

One commenter stated that Appendix A is completely inappropriate for Part 91.

**CAA response:** CAA does not agree. Appendix A contains the specifications for the equipment required under Part 91 and logically they both should be in the same rule part.

One commenter considered that the order of the equipment in the Appendix is inappropriate and suggested that the subparagraphs should be rearranged.

**CAA response:** Appendix A is arranged in the same sequence as the final rules and CAA considers that this is appropriate and logical.

One commenter suggested that in the first sentence, the words "or later approved versions" should be deleted as they are too non-specific.

**CAA response:** CAA agrees and this has been removed in the final rule.

One commenter stated that placards on aircraft have varying standards. An example is limiting speeds on UK certificated aircraft are in terms of IAS while

on Canadian certificated aircraft in terms of CAS. The commenter recommends that Appendix A be used to obtain standardisation.

**CAA response:** CAA does not agree as the values used for aircraft certification are not significant for compliance with the flight rules. The significant issue is that the instruments and equipment provide the flight crew with the correct information for air navigation within New Zealand.

One commenter considered that (a) and (b) should include Part 26, Appendix B. The same commenter considered that Part 26, Appendices D and E should be in Part 91.

**CAA response:** CAA does not agree as the Appendices in Part 26 relate to equipment required under that part for aircraft certification.

#### **2.109 Paragraph (b) [Final rule A.2]**

One commenter considered that (b)(1) should also require the same for pounds and kilograms.

**CAA response:** CAA does not agree as the use of gallons needs to be clarified but the use of kilograms needs no further clarification.

#### **2.110 Paragraph (h) [Final rule A.11]**

One commenter considered that this paragraph should also include Category III equipment.

**CAA response:** CAA agrees and has amended the rule accordingly.

#### **2.111 Paragraph (i) [Final rule A.13]**

One commenter referring to (i)(4) believes methyl bromide is toxic and should not be used in cabins. The commenter asks that in (iii), equivalent to what, for what type of fire, saying that this statement is not specific enough.

**CAA response:** The final rule has been amended deleting reference to methyl bromide. The equivalency in (4)(iii) is in terms of extinguishing action and CAA believes that this is specific.

#### **2.112 Paragraph (j) [Final rule A.14]**

One commenter considered that (j)(1) should refer to "life preservers" to encompass all life jackets/vest/floatation devices not just life jackets.

**CAA response:** CAA agrees and has incorporated this terminology in the final rule.

One commenter considered that (j)(3)(x) should be expressed as a metric measure of 25 metres to be consistent with the use of metric measurements elsewhere in the rules.

**CAA response:** CAA agrees and has amended the rule accordingly.

One commenter suggested that (10) should be amended to read "when ELT becomes beyond economical repair."

**CAA response:** CAA does not agree as the issue of economical repair is one to be determined by the operator. A definition unserviceable has been included in the final rule for clarity.

One commenter stated that the requirement for external markings to indicate the location of first aid kits is not practical for large aircraft as it is not possible to identify the exact internal location this way. The commenter that this should only apply to aircraft not exceeding 5700 kg MCTOW.

**CAA response:** CAA agrees and has amended the rule accordingly.

One commenter stated that regardless of standards, all ELTs currently installed as approved should be included in (10), whether they meet the TSOs listed or not. The commenter believes that there are sets currently approved but not meeting TSO C91.

**CAA response:** TSO C91 is the present standard and there are no ELT's approved that do not meet this standard

One commenter considered that first aid kits should be included in (j).

**CAA response:** CAA agrees and has added first aid kits in Appendix A.

### **2.113 Paragraph (k) [Final rule A.16]**

One commenter why the use of cartridge-oxygen in solid-candle form is not included? It is a very safe and convenient form of equipment for light aircraft short term use, and large transport aircraft have used it for passengers during emergency descents for years.

**CAA response:** The rule does not preclude the use of cartridge oxygen in candle form (oxygen generators) for compliance with the requirements to provide oxygen.

### **Regulatory activities**

Part 91 replaces numerous requirements from the Civil Aviation Regulations 1953, the Civil Aviation Safety Orders, and the New Zealand Airworthiness Requirements.

Section 14(2) of the Civil Aviation Amendment Act 1991 (as amended by section 34 of 1996 No. 91) deems the Civil Aviation Regulations 1953 that are continued in force by section 8 of that Act to be revoked on the close of 31 March 1997.

Section 14(3) states that any order, notice, requirement, circular, or other publication continued in force by section 8 shall expire on the close of 31 March 1997.

### **Conclusion**

The Authority concludes from this consultation that the aviation industry participants favour the direction of the new rules. The rules also meet New Zealand's international obligations under the applicable ICAO Annex. The comments and all background material used in developing the rules are held on the docket file and are available for public scrutiny. Persons wishing to view the docket file should call at Aviation House, 1 Market Grove, Lower Hutt and ask for docket file 1022.