CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

PURSUANT to Sections 28, 29 and 30 of the Civil Aviation Act 1990

I, HARRY JAMES DUYNHOVEN, Minister for Transport Safety,

HEREBY MAKE the following ordinary rules.

SIGNED AT Wellington

This 23rd day of October 2007

by **HARRY JAMES DUYNHOVEN**

Minister for Transport Safety

Civil Aviation Rules

Part 91, Amendment 18

General Operating and Flight Rules

Docket 4/CAR/8

Contents

Rule objective

The objective of amendment 18 to Part 91 is amend and update existing operating rules to meet ICAO standards for emergency locator transmitters (ELT) to operate on 406 and 121.5 MHz.

Amendment 18 to Part 91 is associated with the following consequential amendments:

- Part 1 amendment 36:
- Part 43 amendment 6:
- Part 121 amendment 18:
- Part 129 amendment 6.

Extent of consultation

Satellite monitoring of ELT signals is carried out by the international COSPAS-SARSAT system. This search and rescue satellite-aided distress alert and location system currently processes signals on the international civil and military distress frequencies of 121.5 MHz, 243 MHz and 406 MHz. Most of the current ELTs used in civil aviation operate on 121.5 MHz only.

Due to the limitations of the 121.5 and 243 MHz signal characteristics together with a high number of false alerts from 121.5 MHz ELTs, the international agencies involved in search and rescue – the International Maritime Organisation (IMO), International Civil Aviation Organisation (ICAO), and the providers of the COSPAS-SARSAT system – have agreed that satellite monitoring and processing of 121.5 MHz and 243 MHz signals will cease from 1 February 2009. The ICAO standard now requires ELTs to operate on 406 MHz and 121.5 MHz, with the 406 MHz signal providing the initial alert and location via the COSPAS-SARSAT system and the 121.5 MHz signal used for final homing by search aircraft.

In March 2005 the CAA issued a Rule Project Scope Statement to address the change to the carriage of the 406 MHz ELT. This Project Scope Statement identified the issues that would require amendments to various rules to reflect the technical characteristics, carriage

requirements, coding and registration, and maintenance aspects associated with the change to the 406 MHz ELT.

Following the publication of the Rule Project Scope Statement considerable discussion took place between the CAA and a number of airline operators, aviation industry representatives, New Zealand distributors of ELT equipment, overseas regulatory authorities, and the Rescue Coordination Centre New Zealand (RCCNZ) regarding various matters associated with the change to the 406 MHz ELT. These informal discussions formed the basis for the development of the proposed rule amendments.

A Notice of Proposed Rulemaking, NPRM 06-03, containing the proposed amendments to Parts 1, 43, 91, 121 and 129 was issued for public consultation under Docket 4/CAR/8 on 22 June 2006.

The publication of this NPRM was notified in the Gazette on 22 June 2006 and advertised in the daily newspapers in the five main provincial centres on 24 June 2006. The NPRM was published on the CAA web site and mailed to identified stakeholders including representative organisations who were considered likely to have an interest in the proposal.

A period of 39 days was allowed for comment on the proposed rule.

Summary of submissions

Twenty-four written submissions were received on the NPRM. These submissions and comments have been considered and as a result amendments to the following proposed rules in Part 91 have been made:

- the dispensation in 91.529(e)(3) for microlight aircraft to operate without an ELT has been extended to 2 seat microlights to cater for training flights near an aerodrome.

- the requirement for bench testing 406 MHz ELTs in 91.605(e)(4)(ii) has been deleted as modern test equipment allows for these ELTs to be tested without being removed from the aircraft.

- the detail of persons authorised to carry out tests and inspections in 91.605(e)(4)(ii) and (iii) has been deleted as this detail is now covered in Part 43 and Part 66.

The rule as amended was then referred to Parliament's Regulations Review Committee before being signed by the Minister for Transport Safety.

Examination of submissions

Submissions may be examined by application to the Docket Clerk at the Civil Aviation Authority between 8:30 am and 4:30 pm on weekdays, except statutory holidays.

Insertion of Amendments

The amendments to the rules in this Part are reflected by the revocation of some existing rules and replacing them with new rules, the revocation of an existing appendix and replacing it with a new appendix, and the insertion of a new appendix.

Effective date of rule

Amendment 18 to Part 91 comes into force on 22 November 2007.

Availability of rules

Civil Aviation Rules are available from–

CAA web site: http://www.caa.govt.nz/
Freephone: 0800 GET RULES (0800 438 785)

Part 91 Amendments

Subpart F—Instruments and Equipment Requirements

Rule 91.529 is revoked and replaced with the following new rule

91.529 Emergency locator transmitter

(a) A person must not operate an aircraft without an automatic ELT installed in the aircraft except as provided in paragraphs (b), (d), and (e), Appendix C, rule 121.353(b), and rule 129.109.

(b) An aircraft may be operated without an automatic ELT installed if—

(1) the operation is to ferry the aircraft from the place where the operator takes possession of the aircraft to a place where the automatic ELT is to be installed; and

(2) the aircraft does not carry any passenger.

(c) Despite rule 91.501(4), an aircraft may be operated with an inoperative automatic ELT if—

(1) the operation is to ferry the aircraft from a place where repairs or replacement of the ELT cannot be made to a place where the repairs or replacement can be made; and

(2) the aircraft does not carry any passenger.

(d) Despite rule 91.501(4) and paragraph (a), an aircraft may be operated without an operable automatic ELT for a period of not more than 7 days if the aircraft is equipped with an ELT(S) or PLB that is accessible to any person on board the aircraft.

(e) Paragraph (a) does not apply to the following aircraft:

(1) an aircraft that is equipped with no more than 1 seat if the pilot is equipped with an ELT(S) or PLB:

(2) a glider or microlight aircraft if at least 1 person carried in the glider or microlight aircraft is equipped with an ELT(S) or PLB:

(3) a glider, or powered aircraft, including a microlight aircraft, that is equipped with no more than 2 seats, if the glider or powered aircraft is operated not more than 10 nm from the aerodrome from which the glider or powered aircraft took off:

(4) a manned free balloon.

(f) A holder of a certificate of registration for a New Zealand registered aircraft that is equipped with an automatic ELT, or carries an ELT(S), EPIRB, or PLB that operates on 406 MHz must not operate the aircraft unless—

(1) for an automatic ELT or ELT(S), the ELT is coded with the International Telecommunication Union (ITU) country code for New Zealand, and any of the following:

(i) the ELT serial number:

(ii) the 24-bit aircraft address:

(iii) the ICAO aircraft operating agency designator:

(iv) the aircraft nationality and registration marks; and

(2) for an EPIRB or PLB, the EPIRB or PLB is coded with—

(i) the International Telecommunication Union (ITU) country code for New Zealand; and

(ii) a unique code to identify the EPIRB or PLB; and

(3) the holder of the certificate of registration has notified the Rescue Coordination Centre New Zealand of—

(i) the code, in accordance with paragraph (f)(1) or (f)(2), for each ELT, EPIRB, or PLB that is installed or carried in the aircraft; and

(ii) the name and emergency contact details of the aircraft operator.

(g) A person must not operate a foreign aircraft in New Zealand that is equipped with or carries an ELT that operates on 406 MHz unless the ELT is coded with—

(1) the International Telecommunication Union (ITU) country code of the State of registry; and

(2) any of the following:

(i) the ELT serial number:

(ii) the 24-bit aircraft address:

(iii) the ICAO aircraft operating agency designator:

(iv) the aircraft nationality and registration marks.

Subpart G—Operator Maintenance Requirements

Rule 91.605 is revoked and replaced with the following new rule

91.605 Maintenance programmes and schedules

(a) Subject to paragraphs (b), (c), and (d), the operator of an aircraft must maintain the aircraft in accordance with—

(1) a maintenance programme approved under Part 119; or

(2) a maintenance programme approved under rule 91.607; or

(3) the manufacturer's maintenance schedule; or

(4) if the aircraft is powered by a piston engine and has a MCTOW of 2730 kg or less, a maintenance programme that is acceptable to the Director and includes at least the following:

(i) details of the responsibilities and standards for maintenance of the aircraft in accordance with the applicable rule requirements:

(ii) details of pre-flight checks:

(iii) details of scheduled maintenance checks and inspections.

(b) The operator of an aircraft that is—

(1) used for air operations under the authority of an air operator certificate issued in accordance with Part 119 must maintain the aircraft in accordance with the maintenance programme that is required under Part 119 for the issue of the air operator certificate; or

(2) issued with a *special category - experimental* airworthiness certificate must maintain the aircraft in accordance with a maintenance programme approved under rule 91.607.

(c) If the manufacturer's maintenance schedule referred to in paragraph (a)(3) does not provide for an aircraft that operates for less than 100 hours of time in service per year, the operator must ensure that the manufacturer's 100-hour inspection or an equivalent inspection is completed within the preceding 12 months.

(d) If the Director determines that a manufacturer's maintenance schedule referred to in paragraph (a)(3) is deficient, the Director may require the operator to submit a maintenance programme for approval under rule 91.607.

(e) Except as provided in paragraph (f) and rule 91.611, the operator of an aircraft must not operate the aircraft unless—

(1) every aircraft radio station that is required to be installed in the aircraft under Subpart F for operations under IFR has been tested and inspected in accordance with Part 43, Appendix B within the preceding 24 months; and

(2) every static pressure system, altimeter instrument, or automatic pressure altitude reporting system that is required to be installed in the aircraft under Subpart F, or required for an SSR transponder installed in the aircraft, has been tested and inspected in accordance with Part 43, Appendix D—

(i) within the preceding 24 months; and

(ii) 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

(iii) following installation of, or maintenance on, the automatic pressure altitude reporting system where data correspondence error could be introduced; and

(3) every SSR transponder that is required to be installed in the aircraft under subpart F has been tested and inspected, in accordance with Part 43, Appendix E within the preceding 24 months; and

(4) every emergency locator transmitter that is required to be installed in the aircraft under subpart F—

(i) for a 406 MHz emergency locator transmitter, has been tested and inspected in accordance with Appendix F of Part 43 within the previous 12 months or 100 hours of aircraft time in service, whichever is the sooner; and

(ii) for a 406 MHz emergency locator transmitter, has been tested in accordance with the manufacturer's instructions within the previous 24 months; and

(iii) for a 406 MHz emergency locator transmitter, has the battery replaced in accordance with the manufacturer's instructions, when the life of the battery, as established by the manufacturer, has expired; and

(iv) for a 121.5/243 MHz emergency locator transmitter, has been tested and inspected in accordance with Part 43, Appendix F within the previous 12 months; and

(v) for a 121.5/243 MHz emergency locator transmitter, has its batteries replaced after the ELT has been in use for more than 1 cumulative hour; and

(vi) for a 121.5/243 MHz emergency locator transmitter, has its batteries replaced when the useful life of the battery, as established by the manufacturer, has expired; and

(5) every compass that is required to be installed in the aircraft under Subpart F has been calibrated—

(i) within the preceding 24 months; and

(ii) following any out of phase event that may affect the calibration of the compass unless the aircraft manufacturer specifies otherwise; and

(6) every first aid kit that is required to be installed in the aircraft under Subpart F has been inspected—

(i) within the preceding 12 months to ensure that appropriate quantities of items are included and time-expired items are replaced; and

(ii) after every reported use to ensure that appropriate quantities of items are included; and

(7) every portable fire extinguisher that is required to be installed in the aircraft under Subpart F has been inspected for condition and tested in accordance with the manufacturer's instructions or other equivalent instructions acceptable to the Director within the preceding 12 months; and

(8) all flotation equipment that is required to be installed in the aircraft under Subpart F has been inspected for condition and

tested in accordance with the manufacturer's instructions or other equivalent instructions acceptable to the Director within the preceding 12 months; and

(9) the aircraft's empty weight and centre of gravity is re-established if—

(i) changes have been made to the aircraft that could affect the empty weight and centre of gravity; or

(ii) the operator has any reason to suspect that the information in the aircraft's flight manual is no longer accurate; and

(10) for a powered aircraft with a maximum certificated seating capacity of 4 or more seats, the aircraft has been weighed within the preceding 10 years.

(f) The operator of an aircraft that is maintained in accordance with a maintenance programme referred to in paragraphs (a)(1) or (a)(2) is not required to comply with any particular requirement in paragraph (e) if the maintenance programme for the aircraft includes a test, inspection, or other action that is equivalent to the particular requirement in paragraph (e).

(g) The operator of an aircraft must—

(1) identify in the maintenance logbook for the aircraft which maintenance option under paragraph (a) is to be used for the aircraft; and

(2) if the maintenance programme is one that is approved under Part 119 or approved under rule 91.607, identify in the maintenance programme the person who is responsible for scheduling the maintenance that is required in the programme; and

(3) if changing from the maintenance programme or option identified under paragraph (g)(1) to another programme or option under paragraph (a), schedule the inspections required

by the new programme or schedule, to provide for the continued airworthy condition of the aircraft; and

(4) provide a copy of the applicable maintenance programme or schedule to the person who performs maintenance on the aircraft, and upon request to the Director.

Appendix A—Instrument and equipment specifications

Appendix A.15 is revoked and replaced with the following new appendix

A.15 Emergency locator transmitters

(a) Except as provided in Appendix C, an automatic ELT and an ELT(S) must—

(1) meet the requirements of TSO C126; and

(2) transmit on both frequencies of 406 MHz and 121.5 MHz.

(b) An automatic ELT must—

(1) be attached to the aircraft in such a manner that—

(i) the probability of damage to the ELT in the event of an accident or impact is minimised; and

(ii) the ELT mounting is to a primary load-carrying structure provided the attachment does not degrade the structural capability of the aircraft; and

(iii) a force of 450 newtons applied to the ELT mounting in the most flexible direction does 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 attachment site; and

(iv) the ELT and any external antenna can support a 100 g load in the plus and minus directions of the 3 principal axes of the aircraft; and

(v) the ELT and any external antenna are as close to each other as possible; and

(vi) for a fixed or a deployable automatic ELT, the ELT and external antenna are attached as far aft as possible; and

(2) have its crash activation sensor—

(i) located so as to prevent inadvertent operation; and

(ii) axis orientated to sense a primary crash pulse along the longitudinal axis of the aircraft; and

(3) have its antenna—

(i) mounted to provide vertical polarisation with the aircraft in normal flight; and

(ii) for an external antenna, mounted not less than 0.6 m from any other VHF antenna unless the manufacturer specifies that a closer mounting may be used; and

(iii) for an internal antenna, insulated from metal parts and exposed to a window of at least 0.3 m square; and

(4) be fitted with vibration proof RF connectors on each end of the ELT-antenna coaxial cable; and

(5) have its location identified near the point of access.

(c) Except as provided in Appendix C, an EPIRB must—

(1) meet the requirements of Australian/New Zealand Standard AS/NZ 4280.1; and

(2) transmit on both frequencies of 406 MHz and 121.5 MHz.

(d) An ELT(S) and EPIRB must—

(1) be self buoyant; and

(2) be water resistant; and

(3) be portable.

(e) Except as provided in Appendix C, a PLB must operate on both frequencies of 406 MHz and 121.5 MHz, and must—

(1) meet the requirements of Australian/New Zealand Standard AS/NZS 4280.2; or

(2) be COSPAS-SARSAT type approved.

(f) An ELT(S) must be stowed in the aircraft in a manner that allows it to be readily available to any person on the aircraft in the event of an emergency.

The following new appendix is inserted

Appendix C—Transitional arrangements (ELT, EPIRB, and PLB)

(a) The requirements prescribed in rule 91.529 for an emergency locator transmitter to be installed in an aircraft do not apply to a person operating a microlight aircraft until 1 July 2008.

(b) A pilot of an aircraft may use a portable ELT operating on 121.5 MHz to meet the requirements of rule 91.529(e) (1) and (2) until 1 July 2008.

(c) The requirements prescribed in A.15(a) of Appendix A for an automatic ELT and an ELT(S) do not apply until 1 July 2008 if—

(1) the automatic ELT or the ELT(S), as the case may be, was installed in the aircraft before 22 November 2007; and

(2) the details of the aircraft specified in rule 47.55(b) for the aircraft already appear in the New Zealand Register of Aircraft on 22 November 2007; and

(3) the automatic ELT or the ELT(S) meets the requirements of—

(i) TSO C91a: or

(ii) TSO C91 if the automatic ELT or ELT(S) was installed in the aircraft before 1 April 1997 except that if the ELT or ELT(S) becomes unserviceable it must be replaced with an automatic ELT or ELT(S), as the case may be, that meets the requirements of TSO C91a, or the requirements of A.15(a) of Appendix A.

(d) For the purpose of paragraph (c)(3)(ii), an automatic ELT or ELT(S) is not considered unserviceable when maintenance required by rule 91.605(e)(4) is performed.

(e) The requirements of A.15(c) of Appendix A for an EPIRB do not apply until 1 July 2008 if the EPIRB meets the requirements of—

(1) Australian/New Zealand Standard AS/NZS 4330:2000: or

(2) Australian Ministerial Standard MS241.

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.)

A Notice of Proposed Rulemaking, NPRM 06-03, containing the proposed rules was issued for public consultation under Docket 4/CAR/8 on 22 June 2006 A period of 39 days was allowed for comment on the proposed rule.

A total of 24 written submissions were received. Of these, 14 submissions were from organisations and 10 from individuals. The CAA has worked through these submissions and as a result has amended the rules where appropriate.

The structure of some rules has been amended and editorial changes have been made to provide clarity as a result of these submissions.

Summary of Submissions and CAA Responses

Submissions were received from international airline operators, maintenance organisations, aviation organisations, and individuals.

The submissions generally fell into three areas:

- Objections to the proposal to retrofit automatic ELTs to aircraft operated internationally under Part 121 and Part 129
- Comments on the maintenance and testing rules in Part 91 and Part 43
- Comments on the removal of the exception regarding microlight aircraft.

Subject area

Placement and Design of ELT Aerials

Three submissions were received regarding ELT aerials in crash situations, and issues regarding aerial installation.

One submitter emphasised the importance of the automatic ELT aerial being able to tolerate damage in a crash, and recommended that the CAA should be actively working with the appropriate authorities to

revise the current FAA TSO to require aerials to be crash tolerant, and that a NZ TSO that prescribes a crash tolerance test be developed for ELT aerials. Two submitters provided detailed technical comments regarding ELT aerial installations; the placement of the aerial on different aircraft, and the need to ensure the output from the ELT was efficiently transferred to the aerial. Both submitters expressed concerns over the installation/placement of aerials on some general aviation aircraft.

CAA Response

The CAA agrees that it is important that ELT aerials have some degree of crash tolerance but any changes to aerial design would need to come from the Requirements and Technical Concepts for Aviation (RTCA) through the relevant FAA Technical Standard Order (TSO) The CAA is a member of the (RTCA) Special Committee (SC) 204 that is revising the design, performance, and installation requirements for 406 MHz ELTs, and is monitoring developments from this SC. The CAA is also aware that a major New Zealand distributor of ELTs has developed a Secondary Antenna Switching Device (SASD) for use with an automatic fixed ELT. This device is designed to deploy a secondary aerial in the event that the main aerial is damaged in a crash, and is currently waiting international type approvals. The CAA is monitoring this development.

The CAA intends to address issues regarding ELT installation/placement by revising the relevant Advisory Circulars. This revision will take into account the submissions made on installation issues and draft versions of the Advisory Circulars will be circulated for industry comment.

Bulk Purchase of ELTs

A submitter suggested that CAA make a bulk purchase of 406 MHz ELTs for general aviation aircraft and offer them for sale at cost, on similar lines to the installation of transponders some years ago.

CAA Response

The bulk purchase of transponders was undertaken by the Airways Corporation as part of the introduction of the secondary surveillance radar system in New Zealand. It would not be appropriate for the CAA

to become involved in what is essentially a commercial activity as suggested by the submitter, and any such initiatives need to come from within the aviation industry. The CAA understands that at least one aviation organisation has organised a bulk purchase of ELTs for its members.

Rule Reference

Retrofitting of Automatic ELTs (Part 121, 121.353, Part 129 Appendix A)

Three submissions were received objecting to the proposal that operators conducting international air operations under Part 129 and Part 121 retrofit automatic 406 MHz ELTs.

All three submitters expressed concern that the CAA was proposing a more stringent ELT requirement for existing aeroplanes than the proposed ICAO Standard called for, and that the CAA was attempting to introduce a unique New Zealand requirement in respect to retrofitting automatic ELTs for international operations.

Two submitters provided a detailed break-down of costs involved, detailed the time it would take to retrofit existing aeroplanes, and advised that new aeroplanes being purchased as fleet replacements would come with automatic ELTs installed.

All the submitters considered the proposal unacceptable and recommended that the CAA adopt the ICAO Annex 6 requirements for ELTs for aeroplanes performing international operations.

CAA Response

In light of these submissions, the CAA has reviewed the proposal to require foreign operators, and Part 121 operators conducting international operations, to retrofit automatic ELTs in existing aeroplanes. The CAA will now adopt the ICAO Standards for international operations proposed for amendment of Annex 6, as contained in ICAO State Letter AN 15/12-06/12 dated 20 January 2006. These standards will be incorporated in the Part 129 rules and the Part 121 rules for international operations.

406 MHz ELT Self-Test Function (Part 43 Appendix A and Appendix F)

A submitter asked if all 406 MHz ELT will have a self-test function

CAA Response

Yes- the self-test function is a requirement of TSO-C126 for a 406 MHz ELT.

Aircraft Radio Station Inspection (Part 43 Appendix B)

Two submissions were received. One submitter questioned the residual noise level figure, the signal to noise ratio, and signals of normal magnitude detail in Appendix B(4)(i) and (ii). The other submitter considered that the tests in Appendix B are a means of maintaining compliance with required criteria, but in many cases are not the only means. The submitter recommended that items (4) to (13) should be moved to guidance material.

CAA Response

The details in Appendix B(4)(i) and (ii), and items (4) to (13) are outside the scope of this NPRM as they do not refer to an ELT. However, the comments have been noted for future reference. The reference to VSWR in (5)(iv) in respect to an ELT has been deleted and is now covered by the Part 43 Appendix F inspections and tests for ELT.

Emergency Locator Transmitter Inspections and Tests (Part 43 Appendix F)

Five submissions were received. A number of submissions questioned the usefulness of VSWR tests and that a test of radiated power was of more use. One submission made detailed comment on the expression of the VSWR ratio and considered that current terminology could be confusing.

One submitter questioned whether the inspections and tests were now an engineer type inspection or was it the intention to change them to a pilot maintenance level function check. The submitter also considered there could be a case for a standardised 24 monthly test.

One submitter was concerned that the Rules should be written in terms of function and performance criteria only so that they are time

independent If they are written on the basis of current practice or technology, they will eventually become obsolete through the development of new technology and methods. The submitter recommended requirements be defined only in terms of function and performance criteria with acceptable means of compliance being provided in guidance material.

CAA Response

Since publication of the NPRM, the CAA has received additional information in respect to the capabilities of the 406 MHz ELT self-test function, and the capabilities of the specialised test equipment that has been developed for use with this ELT. In light of this and the submissions received on the subject of VSWR, the CAA has removed reference to VSWR checks for the 406 MHz ELT as this check can be covered by the self-test function. Other comments on VSWR for other than ELT equipment are outside the scope of this NPRM, however the comments have been noted for future reference.

While pilots need to know how to operate 406 MHz ELTs the inspections and tests in Appendix F are intended as engineer type inspections. The requirements for pilots/operators are detailed in Part 91 (91.605) which also details the frequency of the various tests and inspections. The CAA view is that 406 MHz ELT tests and inspections need to be done in accordance with the manufacturers' instructions rather than to a standardised test. The CAA intends to develop guidance material on testing and inspecting requirements in the revision of the relevant Advisory Circulars.

The CAA agrees in principle that rules should be written so that they are time independent, and this has been done where possible with additional information in the form of guidance material to be developed for inclusion in the relevant Advisory Circulars. Appendix F has been amended by deleting the VSWR check and the proposed amendment to Part 91 (91.605) has been revised.

Requirement for Emergency Locator Transmitters (Part 91, 91.529)

Twelve submissions were received. One submitter considered that the requirement for an automatic ELT for general aviation aircraft not conducting an air operation was not justified and should be removed and replaced with a requirement for a personal locator beacon (PLB).

Another submitter considered that making the requirement for an ELT that could be removed and operated away from the aircraft provided greater flexibility.

One submitter considered that there were too many options available for the coding of a 406 MHz ELT, and that the requirements for foreign registered aircraft could be merged with the requirements for a New Zealand registered aircraft.

One submitter was concerned that the status *quo* be retained regarding the dispensation in the current rules from the carriage of an automatic ELT for gliders. Two submitters considered that gliders and microlights should carry automatic ELTs, and that the 10 nm dispensation from an aerodrome could still take in bush, rugged terrain etc.

A number of submitters considered that the dispensation for microlights should be extended to 2 seat microlights, to cover training flights in the local circuit. One submitter considered that the distance from an aerodrome for a microlight dispensation should be extended to 50 nautical miles.

One submitter sought confirmation that the requirement to register a 406 MHz ELT with RCCNZ only applied to New Zealand registered aircraft and not to an aircraft manufactured in New Zealand for export.

CAA Response

The purpose of this NPRM is to amend existing ELT rules to meet international frequency standards for emergency beacons, and therefore the question of whether automatic ELTs should be required in general aviation aircraft is outside the scope of this NPRM . In addition, the existing ELT rules for general aviation aircraft operating in domestic airspace have now been in place for a number of years and reflect the New Zealand operating environment.

While an ELT that can be removed and operated away from an aircraft may provide more flexibility, the current rule for an automatic ELT is the minimum level required and more than one type of ELT could be carried. The CAA understands from informal sources that with the

price of a PLB now being less than NZD1 000 some operators are considering carrying a PLB in addition to the required automatic ELT.

The numbers of options available for coding the 406 MHz ELT are based on ICAO coding protocols in Annex 10 Volume III, and reflect industry requests for flexibility to accommodate the variety of methods used by aircraft operators to identify their ELTs.

The coding requirements for foreign registered aircraft and New Zealand registered aircraft need to be kept separate because of the different country code requirements. Paragraph (f) of 91.529 has been revised to more clearly reflect the coding requirements for New Zealand registered aircraft, and a new paragraph (g) has been added to reflect the requirements for foreign registered aircraft.

Rule 91.529(e)(3) has been clarified to reflect that the status quo remains in respect to the ELT requirements for gliders. The CAA considers that it would be impracticable to mandate automatic ELTs for gliders and microlights because of space, suitable mounting locations etc in some of these aircraft. The rule for gliders and the proposed rule for microlight aircraft do not preclude the fitting of an automatic ELT but provides a choice between the automatic ELT, an ELT(S) or a PLB. The CAA accepts that 10 nm from an aerodrome may well take in bush, rugged terrain etc but considers this distance provides a reasonable compromise between an aircraft performing local circuit training where the aircraft may be visible from the aerodrome, and an aircraft performing a cross-country flight when it will be out of sight of the aerodrome.

The CAA agrees that the dispensation for microlight aircraft in 91.529(e)(3) be extended to 2 seat microlights, and the rule has been amended accordingly. The CAA does not agree to extending the dispensation distance from an aerodrome for microlight aircraft to 50 nm, as this would place the aircraft and occupant(s) in a more difficult situation to locate from a search and rescue aspect in the advent of an accident. Also refer to comments in the previous paragraph regarding visibility from an aerodrome.

It is confirmed that the requirement to register details with RCCNZ for a 406 MHz ELT applies only to a New Zealand registered aircraft. It was

suggested to the submitter that for short proving flights prior to export a PLB registered with RCCNZ in the company's name could be carried.

Maintenance Programmes and Schedules (Part 91, 91.605)

Fourteen submissions were received with the majority of submitters expressing concerns regarding the requirement for bench testing in 91.605(e)(4)(ii), the 12 months/100 hours in service time, and that a licensed aircraft maintenance engineer (LAME) had not been included as being authorised to do the tests in 91.605(e)(4)(ii) and (iii).

The submissions regarding the bench testing requirement pointed out that modern built in test equipment (BITE) developed for testing 406 MHz ELTs now allowed for these tests to be done in the field, with it being possible in some cases for the ELT to remain in the aircraft. The submitters recommended that CAA remove the requirement for bench testing from the rule.

Submitters were concerned that a LAME not being included as authorised to do the tests (including battery changes) in 91.605(e)(4)(ii) and (iii) would place an unnecessary financial and time out of service burden on operators by requiring ELTs to be freighted around the country to Part 145 organisations. This would cause bottle necks and delays in placing aircraft back into service. The submitters considered that the holder of an aircraft maintenance licence issued under Part 66 and appropriately rated was also capable of carrying out these tests and that the rules should reflect this.

A number of submitters sought clarification and/or confirmation in respect to the requirement in 91.605(e)(4)(i) for tests and inspections within the previous 12 months or 100 hours of aircraft time in service. There were concerns regarding the frequency of these tests as some aircraft can do 100 hours of aircraft time in service within a calendar month during high work periods and this requirement could prove onerous There were also concerns regarding any potential adverse effect on the SAR system resulting from test transmissions from these ELTs.

One submitter was not aware of any ELT batteries being able to be re-charged and recommended that reference to recharged should be removed from the rule.

CAA Response

In light of these submissions and additional information now to hand regarding the capabilities of 406 MHz ELT test equipment, the CAA has reviewed the requirement for a bench test and the rules have been amended to remove this requirement.

In light of the submissions received regarding licensed aircraft maintenance engineers being authorised to carry out the required tests and inspections for 406 MHz ELTs, and the recently amended Part 43 general maintenance rules the CAA has reviewed the proposed 91.605(e)(4)(ii) and (iii) rule in regard to the persons authorised to carry out these tests and inspections. The CAA agrees that a LAME appropriately rated can carry out these tests and inspections. The CAA also now considers that Part 91 is not the appropriate rule part to prescribe who is authorised to carry out ELT tests and inspections. Accordingly, rule 91.605(e)(4)(ii) and (iii) has been revised and references to Part 145 and Part 66 have been removed as the detail of who can carry out these tests and inspections is covered in Part 43 and Part 66.

The requirement for 12 months/100 hours time in service in 91.605(4)(i) is confirmed. The CAA is aware that some aircraft may do 100 hours time in service per month in peak usage times but does not consider that the test and inspection called for is an onerous one, and is in accordance with manufacturers specifications. The CAA will coordinate test transmission procedures for 406 ELTs with RCCNZ and develop guidance material for inclusion in ELT Advisory Circulars.

The CAA agrees that ELT batteries are not recharged, and reference to recharged has been removed from the rule.

To address the number of issues raised from these submissions, in addition to any changes to the proposed rules resulting from these submissions, the CAA is in the process of developing Advisory Circulars covering installation, maintenance, and testing issues for the 406 MHz ELT. These Advisory Circulars will be published in draft form for industry comment prior to final publication.

Instrument and Equipment Specifications for ELTs (Part 91 Appendix A.15)

Seven submissions were received. The submissions generally addressed issues of the mounting of ELTs in fixed-wing aeroplanes and helicopters, and certification of PLBs.

The majority of submissions raised various issue in relation to the mounting of ELTs and the connections between the ELT and it's aerial. The issues raised were:

- Special requirements associated with the mounting of ELTs in helicopters to take into account the helicopter crash axis
- The practicalities of mounting the ELT and aerial as far aft as possible in certain types of aircraft, given accessibility restraints due to the construction of such aircraft
- Maintaining the required separation between ELT and its aerial and at the same time take into account the best positioning to survive a crash.

One submitter considered that a PLB should be certified and maintained as if it was fitted in the aircraft.

CAA Response

The CAA has considered the various submissions in relation to mounting of ELTs in aircraft and the current rule wording in A.15. While the submissions in general are relevant and useful, the CAA considers that for practical reasons it would be inappropriate to attempt to amend the current rule wording to incorporate the issues raised. Therefore, the CAA will address the issues raised through the Advisory Circulars being developed for the 406 MHz ELT.

As a PLB can be carried in an aircraft, marine craft, vehicle or simply on the person and is not covered by a Technical Standard Order, the CAA considers that as long as the PLB meets the required standards in A.15, then the manufacturer's instructions provides sufficient safeguards.

List of Submitters

Air New Zealand

Air Repair Taranaki

Alpha Aviation

Aviation Safety

B. Moffatt

Board of Airline Representatives New Zealand

Civil Aviation Authority

Engineer Partnership

Fieldair Engineering

G. Grocott

Gliding New Zealand

K.D. James

L. Tuff

New Zealand Search and Rescue Council

P. Scotter

Qantas Airways

R. St George

R.B Leach

R.G. Sanson

Recreational Aircraft Association of New Zealand

Rescue Coordination Centre New Zealand

Safe Air

V. Alborn

Wanaka Helicopters