



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

I, Hon Julie Anne Genter, Associate Minister of Transport,

HEREBY MAKE the following ordinary rules.

SIGNED AT Wellington

This 15th day of June 2018

A handwritten signature in black ink, appearing to read 'Julie A Genter', is written over a horizontal line. The signature is fluid and cursive, with the first letter 'J' being particularly large and stylized.

by Hon Julie Anne Genter

Associate Minister of Transport

Civil Aviation Rules
Part 91, Amendment 30
General Operating and Flight Rules
Docket 16/CAR/12

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Rule objective

The objective of amendment 30 to Part 91 is to provide for the transition from secondary surveillance radar to Automatic Dependent Surveillance Broadcast (ADS-B) OUT as the primary source of data for surveillance in New Zealand.

This amendment specifies the requirements and performance standards for ADS-B equipment in aircraft operations, in transponder mandatory controlled airspace above flight level 245 designated under Part 71 within the New Zealand FIR. This amendment also enables the Director to determine certain requirements and performance standards of ADS-B equipment as specified in a notice.

Amendment 30 to Part 91 is associated with the following amendments to other rule Parts –

- amendment 54 to Part 1
- amendment 15 to Part 43
- amendment 6 to Part 66
- amendment 9 to Part 101
- amendment 8 to Part 103
- amendment 13 to Part 172

Extent of consultation

A Notice of Proposed Rulemaking, NPRM 18-02, containing the proposed changes to Parts 91, 1, 43, 66, 101, 103 and 172 was issued for public consultation under Docket 16/CAR/12 on 14 September 2017.

The publication of this NPRM was notified in the Gazette on 21 September 2017. The NPRM was published on the CAA web site on 14 September 2017. A period of 44 days was allowed for comment on the proposed rule.

Summary of submissions

A total of six submitters provided written submissions on the NPRM. There were no oral comments received on the NPRM. These submissions have been considered and as a result, the following amendments have been made –

- to clarify intent in rules 91.247(a)(3), (b), and 91.541(c), that the rules will apply to an aircraft equipped with an ADS-B system which meets the prescribed rule requirements, from the commencement date of the rules;
- to clarify intent in rules 91.247(a)(3), (b) and 91.253, by replacing the phrase '*equipped with an ADS-B system which does not meet the requirements under rule 91.257*' with '*a transponder that operates in Mode A and Mode C, or Mode S*';
- in rule 91.253, to provide the following transition period for an aircraft equipped with a transponder that operates in Mode A and Mode C, or Mode S –
 - from commencement date until 31 December 2018, for aircraft operating in transponder mandatory controlled airspace above flight level 245 designated under Part 71 within the New Zealand FIR;
- in rule 91.257, by deleting paragraph (5) regarding the aircraft accuracy parameters of the data for ADS-B transmission, as this provision is already covered in paragraph (4) which provides for meeting the performance standards of ADS-B systems;
- in rule 91.258(a), by inserting paragraph (5) as additional matter which the Director may determine in a notice - to provide for the requirements regarding the installation and approval of ADS-B equipment, and the conditions relating to ADS-B OUT equipment or design change, the position source and transponder;
- in rule 91.258A –

- by adding paragraph (1)(iv), which includes “*practicability of the proposal*” as an additional factor which the Director must consider before issuing or amending a notice;
- by adding paragraph (3)(iii) regarding “*any factors unique or relevant to New Zealand’s operations*” which the Director needs to consider in the making of a notice;
- by deleting paragraph (b) as it is redundant;
- in rule 91.258D, by clarifying intent that the Director may amend a notice after following the specified procedures in rules 91.258A and 91.258B; and
- in rule 91.541(c) by clarifying intent that an ADS-B system installed in any aircraft from the commencement date of the rules must meet the minimum performance standards and requirements under rule 91.257.

A summary of submissions for this NPRM is available on the CAA website.

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 –

- revoking and replacing rules 91.1, 91.247, 91.541, 91.601 and 91.605; and
- inserting rules 91.253, 91.255, 91.257, 91.257A, 91.258, 91.258A, 91.258B, 91.258C, 91.258D and 91.258E.

Effective date of rule

Amendment 30 to Part 91 comes into force on 20 July 2018

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 General Operating and Flight Rules

Subpart A – General

Rule 91.1 is revoked and replaced with the following rule.

91.1 Purpose

(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 also apply to members of the New Zealand Defence Force and any aircraft operated by the New Zealand Defence Force within the territorial limits of New Zealand:

- (1) rule 91.129:
- (2) rules 91.223 to 91.225, when operating in the vicinity of civil aircraft:
- (3) rule 91.229, when operating in the vicinity of civil aircraft:
- (4) rule 91.233:
- (5) rule 91.241:
- (6) rules 91.245 to 91.247:
- (7) rule 91.309:
- (8) rule 91.313:
- (9) rules 91.407 to 91.411:
- (10) rules 91.425 to 91.427:
- (11) rule 91.431:
- (12) rule 91.541:
- (13) rule 91.255.

- (c) This Part does 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 operating area designated under rule 71.201 for military purposes; and
 - (2) a person operating an aircraft to which Part 101 applies; and
 - (2A) a person operating an aircraft under the authority of an unmanned aircraft operator certificate granted under the Act and in accordance with Part 102 unless compliance with any of the requirements in this Part is required as a condition of operation; and
 - (3) a person and equipment to which Part 105 applies.
- (d) The following do 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 under the rule:
- (1) rule 91.225(b);
 - (2) rule 91.233;
 - (3) rule 91.313, if training outside controlled airspace;
 - (4) rule 91.407, if training outside controlled airspace;

(5) rule 91.427, if training outside controlled airspace.

(e) The following do not apply in the case of air operations conducted in New Zealand under an Australian AOC with ANZA privileges:

(1) rule 91.111(1):

(2) rule 91.112:

(3) rule 91.115:

(4) rule 91.121:

(5) rule 91.123:

(6) rule 91.201(1)(i):

(7) rule 91.201(3):

(8) rule 91.205:

(9) rule 91.207:

(10) rule 91.209:

(11) rule 91.211:

(12) rule 91.213:

(13) rule 91.215:

(14) rule 91.221:

(15) rule 91.401:

(16) rule 91.501:

(17) rule 91.503:

(18) rule 91.505:

(19) rule 91.507:

- (20) rule 91.509:
- (21) rule 91.511:
- (22) rule 91.513:
- (23) rule 91.515:
- (24) rule 91.517:
- (25) rule 91.519:
- (26) rule 91.521:
- (27) rule 91.523:
- (28) rule 91.525:
- (29) rule 91.527:
- (30) rule 91.529:
- (31) rule 91.531:
- (32) rule 91.533:
- (33) rule 91.537:
- (34) rule 91.539:
- (35) rule 91.543:
- (36) rule 91.545:
- (37) rule 91.707.

Rule 91.247 is revoked and replaced with the following rule.

91.247 Use of transponder and altitude reporting equipment

(a) Except as provided in paragraph (g), a pilot-in-command of an aircraft operating in transponder mandatory special use airspace or

transponder mandatory controlled airspace below flight level 245 designated under Part 71 within the New Zealand FIR must, unless otherwise authorised or instructed by ATC, operate the transponder —

- (1) in Mode A and Mode C; or
 - (2) in Mode S if the aircraft is equipped with Mode S equipment and allocated a unique Mode S code referred to in paragraph (d); or
 - (3) to transmit ADS-B data, if the aircraft is equipped with an ADS-B system that meets the requirements under rule 91.257.
- (b) Except as provided in paragraph (g), a pilot-in-command of an aircraft operating in transponder mandatory controlled airspace above flight level 245 designated under Part 71 within the New Zealand FIR must, unless otherwise authorised or instructed by ATC, operate the transponder to transmit ADS-B data.
- (c) Except if paragraph (3) applies or if operating Mode S equipment, the pilot-in-command must set the transponder SSR code—
- (1) to the code assigned by ATC for the flight; or
 - (2) if not assigned a code by ATC, in accordance with Table 2; and
 - (3) in the event of an in-flight emergency, loss of radio communications, or an act of unlawful interference, set the transponder to the appropriate code in accordance with Table 3.
- (d) A pilot-in-command of an aircraft must not operate Mode S transponder equipment unless the aircraft is transmitting a unique Mode S code assigned by the State of registry.
- (e) A pilot-in-command intending to operate an aircraft without an operable transponder in transponder mandatory airspace that is within controlled airspace must obtain specific authorisation from the ATC unit

having jurisdiction over the relevant airspace as part of the ATC clearance to enter that airspace.

(f) A pilot-in-command of an aircraft operating in transponder mandatory airspace must immediately advise the ATC unit having jurisdiction over the relevant airspace of any failure or partial failure of the transponder equipment.

(g) Unless otherwise required by ATC, only one of the aircraft in a formation flight is required to operate a transponder in accordance with paragraph (a) or paragraph (b).

Table 2. Airspace SSR Codes

Flight rules	Type of aircraft operation	SSR Code
VFR	For aircraft involved in fire fighting and reconnaissance duties	0111
IFR	All	2000
VFR	All - in Auckland Oceanic FIR only	2000
VFR	All - when operating in the aerodrome traffic circuit at a controlled aerodrome	2200
VFR	Aeroplanes other than Defence aeroplanes	1200
VFR	Gliders or balloons	1300
VFR	Powered aircraft in designated general aviation areas	1400
VFR	Helicopters other than Defence helicopters	1500
VFR	Defence aeroplanes	6000
VFR	Defence helicopters	6500

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

The following rules are inserted after rule 91.251.

91.253 Transition Provision – transmission of ADS-B data prior to 31 December 2018

(a) This rule applies to an aircraft operating in controlled airspace above flight level 245 within transponder mandatory airspace designated under Part 71 within the New Zealand FIR.

(b) Despite rules 91.247(b) and 91.255(a), the aircraft is not required to transmit ADS-B data if it is equipped with a transponder that operates in—

- (1) Mode A and C; or
- (2) Mode S.

(c) This rule expires on 31 December 2018.

91.255 Mandatory use of ADS-B system in controlled airspace above flight level 245

(a) Except as provided in rule 91.253(b), a person must not operate an aircraft in controlled airspace above flight level 245 within transponder mandatory airspace designated under Part 71 in the New Zealand FIR unless the aircraft is equipped with an ADS-B system which meets the minimum performance standards and requirements under rule 91.257.

(b) Paragraph (a) does not apply to an aircraft operating in any portion of the airspace within the Auckland Oceanic FIR.

91.257 ADS-B system performance standards and requirements

An ADS-B system must meet the following minimum requirements -

- (1) include a 1090 MHz Mode S Extended Squitter transponder;
- (2) include a GNSS position source that is compatible with the 1090 MHz Mode S Extended Squitter transponder referred to in paragraph (1);
- (3) include a barometric altitude pressure system and any related equipment;
- (4) transmit an ADS-B OUT message set determined by the Director as specified in a notice referred to in rule 91.258;
- (5) meet performance standards regarding ADS-B systems determined by the Director as specified in a notice referred to in rule 91.258;
- (6) meet the testing and power requirements determined by the Director as specified in a notice referred to in rule 91.258.

91.257A Prohibited transmission of non-compliant data

A person operating an aircraft in controlled airspace within transponder mandatory airspace designated under Part 71 in the New Zealand FIR must not –

- (1) allow the transmission of non-compliant data or misleading data; or
- (2) use a 978 MHz Universal Access Transceiver to transmit data.

91.258 Director may determine certain requirements regarding ADS-B as specified in a notice

(a) After complying with rule 91.258A, the Director may determine the following as specified in a notice -

- (1) the requirements for an ADS-B OUT message set;

- (2) the performance standards for ADS-B systems;
- (3) the testing and power requirements regarding an ADS-B system;
- (4) the requirements regarding the installation and approval of ADS-B system; and
- (5) any conditions relating to ADS-B OUT system or design change requirements or combinations of position source and transponder.

(b) A person must comply with any requirement specified in a notice referred to in paragraph (a) if the requirement applies to the person.

91.258A Process prior to issuing or amending a notice

Before issuing or amending a notice to specify the requirements referred to in rule 91.258, the Director must –

- (1) conduct a review to assess the risk to aviation safety of the matter giving rise to particular safety concerns by taking into account –
 - (i) the requirements of the ATC surveillance system;
 - (ii) the compatibility of equipment, performance standards and procedures for an ADS-B system required under rule 91.257;
 - (iii) how ICAO or other ICAO Contracting States are dealing with the risk;
 - (iv) the practicability of the proposed requirements;
 - (v) any other information that the Director considers may be relevant; and
- (2) consult publicly by publishing the initial or amended notice on the CAA website; and
- (3) consider the following:

- (i) ICAO's annexes to the Convention or legislation by ICAO Contracting States in relation to surveillance systems and ADS-B systems, including equipage;
 - (ii) International standards of the ICAO or ICAO Contracting States and recommended practices and guidance as set out in any document, plan, strategy or manual relating to surveillance systems and ADS-B systems, including equipage; and
 - (iii) any factors unique or relevant to New Zealand's operations; and
- (4) determine, after conducting the review, whether or not it is necessary to impose requirements to eliminate or mitigate any risk to aviation safety.

91.258B Notice to be published

The Director must, as soon as practicable after issuing, amending or revoking a notice, publish on the CAA website—

- (1) the notice; and
- (2) the date the notice comes into effect; and
- (3) the reasons for the notice.

91.258C Effective date of notice

(a) A notice made under rule 91.258 comes into force on the date specified by the Director.

(b) In determining the date under paragraph (a), the Director must provide reasonable time for affected parties to be made aware of the notice before it comes into force.

91.258D Amendment of notice

(a) The Director may amend a notice made under rule 91.258 at any time after following the procedures specified in rules 91.258A and 91.258B.

(b) Despite paragraph (a), rules 91.258A and 91.258C(b) do not apply to any amendment or correction that is minor and non-controversial.

91.258E Revocation of notice

(a) The Director may revoke a notice made under rule 91.258 at any time if the Director is satisfied that the notice is no longer necessary after having consulted publicly on the CAA website.

(b) A revocation takes effect from the date specified by the Director.

Subpart F Instrument and Equipment Requirements

Rule 91.541 is revoked and replaced with the following rule.

91.541 Transponder and altitude reporting equipment

(a) Where an aircraft is equipped with ATCRBS transponder equipment, the transponder must have—

- (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) Where an aircraft is equipped with Mode S transponder equipment, the transponder must be capable of replying to—

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

(c) An ADS-B system installed in an aircraft must meet the minimum performance standards and requirements under rule 91.257.

Subpart G — Operator Maintenance Requirements

Rule 91.601 is revoked and replaced with the following rule.

91.601 Purpose

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

(b) Except for the following, this subpart does not apply to a microlight aircraft that is maintained under Part 103:

- (1) rule 91.605(e)(2) (test and inspection of automatic pressure altitude reporting system if the microlight aircraft is equipped with a surveillance transponder):
- (2) rule 91.605(e)(3) (surveillance transponder):
- (3) rule 91.605(e)(8) (flotation equipment):
- (4) rule 91.616 (maintenance logbook - Class 2 microlight aircraft):
- (5) rule 91.617 (maintenance records - Class 2 microlight aircraft):
- (6) rule 91.621 (transfer of maintenance records):
- (7) rule 91.623 (retention of records).

(c) Except for the following, this subpart does not apply to a glider that is maintained under Part 104:

- (1) rule 91.605(e) (maintenance of instruments and equipment):
- (2) rule 91.613 (operational flight check):
- (3) rule 91.615 (annual review of airworthiness):
- (4) rule 91.616 (maintenance logbook):
- (5) rule 91.617 (maintenance records):
- (6) rule 91.621 (transfer of maintenance records):
- (7) rule 91.623 (retention of records).

Rule 91.605 is revoked and replaced with the following rule.

91.605 Maintenance programmes and schedules

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

- (1) a maintenance programme approved under Part 115; or
- (2) a maintenance programme approved under Part 119; or
- (3) a maintenance programme approved under rule 91.607; or
- (4) the manufacturer's maintenance schedule; or
- (5) 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 by the Director under the Act and Part 119 must maintain the aircraft under the maintenance programme that is required by Part 119; or
- (2) used for adventure aviation operations under the authority of an adventure aviation operator certificate issued by the Director under the Act and Part 115 must maintain the aircraft under the maintenance programme that is required by Part 115; or
- (3) issued with a special category airworthiness certificate must maintain the aircraft under a valid maintenance programme

approved under rule 91.607 for the holder of the certificate of registration for the aircraft.

(c) If the manufacturer's maintenance schedule referred to in paragraph (a)(4) 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)(4) 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 under 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 a surveillance transponder installed in the aircraft, has been tested and inspected under 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 surveillance transponder that is required to be installed in the aircraft under Subpart F has been tested and inspected,

under Part 43, Appendix E within the preceding 24 months;
and

- (4) every ELT or AELS that is required to be installed in the aircraft under Subpart F—
 - (i) has been tested and inspected under—
 - (A) Appendix F of Part 43 within the previous 12 months or 100 hours of aircraft time in service, whichever is the sooner, or
 - (B) for an aircraft maintained under a maintenance programme required by rule 119.63, the scheduled intervals, which must not be more than 12 months, as described in the approved maintenance programme; and
 - (ii) 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
- (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

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- (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 under a maintenance programme referred to in paragraphs (a)(1), (a)(2), (a)(3), or (a)(5) 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 (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.
- (h) The tests and inspections required by paragraphs (e)(1), (e)(2)(i), (e)(3), and the 12 month test and inspection requirement in paragraph (e)(4)(i)(A) do not need to be performed if—
- (1) the aircraft has been inspected for the grant of an airworthiness certificate under section 9 of the Act and Part 21 within the preceding 12 months; and
 - (2) the applicable equipment was installed in the aircraft when the inspection specified in paragraph (1) was performed.