



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

I, Hon Michael Wood, Minister of Transport,

HEREBY MAKE the following ordinary rules.

SIGNED AT Wellington

This 13th day of December 2020

A handwritten signature in grey ink, appearing to read 'M. Wood', is written over the printed name.

by Hon Michael Wood

Minister of Transport

Civil Aviation Rules
Part 91, Amendment 33
General Operating and Flight Rules
Docket 20/CAR/1

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Rule objective

The objective of amendment 33 to Part 91 is to update the Civil Aviation Rules (the Rules) to complete the transition from secondary surveillance radar (SSR) system to Automatic Dependent Surveillance Broadcast (ADS-B) OUT system as the primary source of data for surveillance in New Zealand.

This amendment requires all aircraft operating in transponder mandatory controlled airspace below flight level 245 designated under Part 71 in the New Zealand Flight Information Region (FIR) to be equipped with an ADS-B system as prescribed under this Part by 31 December 2022, or an earlier date specified by the Minister in a notice in the Gazette.

The initial proposed mandate date for aircraft operating in controlled airspace to be equipped with ADS-B was 31 December 2021. The proposed mandate date was set before the COVID-19 pandemic struck, and was largely based on the life span of the SSRs which were projected to reach the end of its life by 31 December 2021.

However, the consequences of COVID-19 (on public health, passenger movements, and economic activity) have significantly impacted on the rollout of Airways infrastructure (namely, a new cooperative contingency system) to support the transition to ADS-B OUT. It has also impacted on the ability of the wider aviation sector to be sufficiently equipped with ADS-B OUT by 31 December 2021 so to make the transition a success.

As Airways has not yet been able to progress development of a new cooperative contingency system, it intends to roll-over the current SSR system for another year to provide back up for ADS-B. Given this proposal for continuing with the current SSRs, and the aforementioned impacts of COVID-19 on ADS-B OUT uptake, it is considered that a delay of one year to the mandate - from 31 December 2021 to 31 December 2022 - is appropriate.

Delaying the mandate by one year is considered appropriate to ensure the transition to ADS-B OUT will be successful, primarily in ensuring the safety of the system. It also acknowledges that, in the current environment, the regulatory burden of a full transition to ADS-B by the originally proposed deadline (31 December 2021) is considerable. The

delay provides owners additional time to recover from the impacts of COVID-19 and equip their aircraft with ADS-B OUT by the new mandate date.

Given the change in the mandate date, the transition period is extended from 1 January 2022 to 31 December 2022. However, this amendment provides some flexibility for the Minister to bring forward the delayed mandate date (a date earlier than 31 December 2022). This is to mitigate any potential safety risks regarding the durability of the SSR system.

Extent of consultation

A Notice of Proposed Rulemaking, NPRM 19-05, containing the proposed amendments to Rule Parts 91 and 172 was issued for public consultation under Docket 20/CAR/1 on 16 December 2019.

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 64 days was allowed for comment on the proposed rule.

Summary of submissions

Forty two written submissions and no oral comments were received on the NPRM. A summary of submissions for this NPRM is available on the CAA website.

These submissions and comments have been considered and as a result-

- (1) rule 91.247 is amended by –
 - revising the layout so that paragraph (a) specifies the requirements for an operator when operating in transponder mandatory controlled airspace;
 - paragraph (b) specifies the transponder requirement for an operator when operating in uncontrolled transponder mandatory special use airspace;
 - paragraph (e) is deleted for being redundant and the paragraph reference is reserved;

- (2) rule 91.253 is amended by inserting a new provision to extend the transition period from 31 December 2021 to 31 December 2022, or an earlier date specified by the Minister in a notice in the Gazette. The transition period is provided mainly for the purpose of getting ADS-B installed in the aircraft, subject to the conditions specified in paragraph (c) of the rule;
- (3) rule 91.255 is amended by deleting the requirement for ADS-B to be transmitted at all times, as it contradicts rule 91.247 which allows for aircraft operation in controlled airspace without transmission of ADS-B data;
- (4) rule 91.255D (b) is amended by –
 - deleting the provision which requires an operator to ensure there is alternative surveillance from the start to the end of the operation. This provision is considered redundant as surveillance would be covered in the ATS approval; and
 - replacing “prescribed form” with “CAA005 form”, to specify the form which is to be used for discreet operations.

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 91.247, 91.253, 91.255, 91.257, 91.257A, and 91.258.

Effective date of rule

Amendment 33 to Part 91 comes into force on 8 February 2021

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 and Operating Rules

Rule 91.247 is revoked and replaced with the following rule:

91.247 Use of transponder and altitude reporting equipment

(a) Except as provide in paragraph (g), a pilot-in-command of an aircraft operating in transponder mandatory controlled airspace designated under Part 71 within the New Zealand FIR must, unless otherwise authorised or instructed by ATC—

- (1) operate the transponder to transmit ADS-B data; and
- (2) ADS-B data is transmitted at all times when the aircraft begins to move under its own power until it has come to a complete stop at the end of the flight.

(b) A pilot-in-command of an aircraft operating in uncontrolled transponder mandatory special use airspace designated under Part 71 within the New Zealand FIR must 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) referred to in rule 91.257(1) providing an ADS-B system as specified in that rule.

(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) *reserved*

(f) A pilot-in-command of an aircraft operating in transponder mandatory controlled 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

Rule 91.253 is revoked and replaced with the following rule:

91.253 Transition provision – use of certain transponders before and after 31 December 2021

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

(b) Despite rules 91.247(a) and 91.255, the aircraft is not required to be equipped with an ADS-B system if it is equipped with a transponder that operates in –

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

until 31 December 2022, or on an earlier date specified by the Minister in a notice in the Gazette.

(c) Despite rules 91.247(a) and 91.255, the aircraft is not required to be equipped with an ADS-B system if –

- (1) it is equipped with a transponder that operates in Mode A and C, or Mode S; and
- (2) it is operating in class D control zone from surface to 1500 feet; and
- (3) it is operating under VFR; and
- (4) the operator has prior approval from ATC; and

- (5) the operation is only for the purpose of getting ADS-B equipment installed in the aircraft.

(d) This rule expires on 31 December 2022, or on an earlier date specified by the Minister in a notice in the Gazette.

Rule 91.255 is revoked and replaced with the following rule:

91.255 Mandatory use of ADS-B system in controlled airspace

(a) Except as provided in rules 91.253 and 91.255D, a person must not operate an aircraft in transponder mandatory controlled 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.

New rule 91.255D is inserted after rule 91.255:

91.255D Operation of aircraft without ADS-B for discreet operations

(a) Despite rule 91.255(a), a person may operate an aircraft without transmitting ADS-B data in the prescribed airspace referred to in that rule if the person is carrying out a discreet operation –

- (1) for national defence or security purposes; or
- (2) for intelligence or law enforcement purposes; or
- (3) for any other suitable purpose approved by the Director where the transmitting of ADS-B data would compromise the security of the operation or pose a safety risk to the aircraft, crew or people and property in the air or on the ground.

(b) An operator must ensure that a discreet operation is not carried out unless –

- (1) for a flight under IFR, information submitted in the flight plan as required by rule 91.407 includes that the proposed operation is a discreet operation; and
- (2) the appropriate ATS unit is notified of the operation as soon as practicable before the operation is to occur; and
- (3) the appropriate ATS unit approves the carrying out of the operation.

(c) A person referred to in paragraph (a)(1) or (a)(2) must inform the Director of the details of the discreet operation in the CAA005 form within 14 days of completing the operation unless the person is required to report an accident or incident involving the discreet operation as required under Part 12.

Rule 91.257 is revoked and replaced with the following rule:

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, or any other suitable transponder determined by the Director as specified in a notice referred to in rule 91.258;
- (2) include a GNSS position source that is compatible with the 1090 MHz Mode S Extended Squitter transponder, or any other suitable 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.

Rule 91.257A is revoked and replaced with the following rule:

91.257A Prohibited transmission of non-compliant ADS-B or misleading data

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

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

(b) In this rule, **non-compliant ADS-B data** refers to any data that does not meet the requirements of the notice referred to in rule 91.258, unless the non-compliance is caused by factors beyond the control of the aircraft operator, such as but not limited to GNSS outage.

Rule 91.258 is revoked and replaced with the following rule:

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

- (6) any other suitable transponder that is compatible to the GNSS position source.
- (b) A person must comply with any requirement specified in a notice referred to in paragraph (a) if the requirement applies to the person.