

Explanatory Statement

Civil Aviation Regulations 1988

Civil Aviation Safety Regulations 1998

Civil Aviation Order 20.91 Amendment Instrument 2018 (No. 1)

Purpose

The purpose of the *Civil Aviation Order 20.91 Amendment Instrument 2018 (No. 1)* (the **instrument**) is to make several minor changes to *Civil Aviation Order 20.91 (Instructions and directions for performance-based navigation) Instrument 2014 (CAO 20.91)*. The changes correct errors, clarify circumstances in which aircraft capable of specified Global Positioning System (**GPS**) based operations are approved to use navigation specifications, and modify the requirements for the initial validation of data for required navigation performance – authorisation required (**RNP AR**) approach (**APCH**) procedures.

Legislation

Section 98 of the *Civil Aviation Act 1988* (the **Act**) empowers the Governor-General to make regulations for the Act and in the interests of the safety of air navigation. Relevantly, the Governor-General has made the *Civil Aviation Safety Regulations 1998 (CASR)* and *Civil Aviation Regulations 1988 (CAR)*.

Subpart 11.G of CASR provides for the Civil Aviation Safety Authority (**CASA**) to issue directions in relation to matters affecting the safety of air navigation. Under paragraph 11.245 (1) (a) of CASR, CASA may, by instrument, issue a direction about any matter affecting the safe navigation and operation of aircraft. Subregulation 11.245 (2) of CASR provides that CASA may issue such a direction if CASA is satisfied that it is necessary to do so in the interests of the safety of air navigation, if the direction is not inconsistent with the Act, and for the purposes of CASA's functions.

Under subregulation 5 (1A) of CAR, CASA may, unless the contrary intention appears in the regulation conferring the power to issue a direction, issue the direction in a Civil Aviation Order.

Under paragraph 11.250 (a) of CASR, a direction under regulation 11.245 ceases to be in force on the day specified in the direction. Under regulation 11.255 it is an offence of strict liability to contravene a direction under regulation 11.245.

Regulation 179A of CAR empowers CASA to issue instructions in relation to the navigation of aircraft flying under the instrument flight rules (**I.F.R.**).

Subsection 98 (5D) of the Act provides that a legislative instrument made under the Act or the regulations may apply, adopt or incorporate any matter contained in any instrument or other writing as in force or existing from time to time, even if the other instrument or writing does not yet exist when the legislative instrument is made.

Under subsection 33 (3) of the *Acts Interpretation Act 1901*, where an Act confers a power to make, grant or issue any instrument of a legislative or administrative character (including rules, regulations or by-laws), the power shall be construed as including a power exercisable in the like manner and subject to the like conditions (if any) to repeal, rescind, revoke, amend, or vary any such instrument.

Background

CASA initially made *Civil Aviation Order 20.91 (Instructions and directions for performance-based navigation) 2012* (the **2012 CAO**) to create a new regulatory framework and authorisation process for “Performance-based Navigation” (**PBN**). PBN sets performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace. The PBN framework requires operators to satisfy specified requirements relating to equipment, flight crew and procedures needed to support PBN operations within a defined airspace, including “navigation specifications”. The kinds of navigation specification are “Area Navigation” (**RNAV**) and “Required Navigation Performance” (**RNP**). The 2012 CAO was based on the International Civil Aviation Organization’s (**ICAO**) document ICAO Doc 9613, *Performance-based Navigation (PBN) Manual* (the **PBN Manual**), 3rd edition, and was part of a world-wide harmonisation process for use of PBN.

The 2012 CAO was remade in 2014 as CAO 20.91 to comply with the 4th edition of the PBN Manual. CAO 20.91 removed the need for CASA approval of non-complex PBN operations, other than for the RNP AR APCH procedure.

In 2015 several commercial air carriers wrote to CASA seeking relief from what they asserted was an unnecessarily restrictive requirement to validate the data for each RNP AR APCH procedure by first flying the procedure in visual meteorological conditions (**V.M.C.**). The requirements of CAO 20.91 were asserted to be more onerous than those required under the PBN Manual.

After reviewing the representations from the air carriers, CASA determined that less onerous requirements were appropriate, and identified an error in the RNP requirements in relation to cross-track error/deviation in Appendix 6 to CAO 20.91.

In the course of preparing amendments to CAO 20.91 to address the 2 measures mentioned above, CASA also identified a number of other editorial and drafting style changes that were appropriate to make to clarify the meaning and improve the implementation of the CAO.

Overview of instrument

In accordance with subsection 33 (3) of the *Acts Interpretation Act 1901*, the instrument amends CAO 20.91.

The instrument standardises the current requirements for “initial data validation” for an RNP AR APCH procedure in Appendix 7 of CAO 20.91, making it possible for a procedure to be validated:

- in an aircraft of the type being flown by day in V.M.C. or a level D flight simulator for the aircraft type;
- from an initial approach fix through the approach (including vertical angle), the missed approach and the approach transitions for the selected aerodrome and runway.

The instrument also does the following in relation to CAO 20.91:

- clarify certain provisions that deem aircraft to be approved for PBN procedures, including on the basis of the aircraft having specified GPS capabilities as specified in the aircraft’s AFM or AFMS;
- correct the cross-track error/deviation tolerances for RNP APCH procedures, to be in line with the guidance in the PBN Manual;
- make general editorial corrections and other drafting changes to improve clarity in the CAO.

Documents incorporated by reference

In accordance with paragraph 15J (2) (c) of the *Legislation Act 2003* (the **LA**), the instrument incorporates material in the aircraft flight manual (**AFM**) or aircraft flight manual supplement (**AFMS**) for a type of aircraft, in relation to the amendments to subsections 9, 10 and 11 of CAO 20.91. An AFM or AFMS, for a type of aircraft, describes procedures for the safe operation of the type of aircraft. They are incorporated by the instrument in relation to a requirement for a flight as the documents exist at the time of the flight.

These documents are made available to aircraft owners and operators by the relevant aircraft manufacturer but may not otherwise be publicly available and may be subject to copyright and charges. CASA has no effective control over those costs. CASA considers it extremely unlikely that the owner of the document would sell CASA the copyright, so that CASA could make the document freely available, at a price that would be an effective and efficient use of CASA funds.

CASA has incorporated the documents in the instrument because aviation safety requires the use of the information and data in the documents by aircraft operators and pilots and because there are no freely available documents serving the relevant purpose. However, where practicable, by prior arrangement with CASA, copies of those documents can be made available for viewing free of charge at any office of CASA. Given the large number of AFM and AFMS for aircraft, it may not be practicable for all of these documents to be held and made available by CASA.

Content of instrument

Section 1 provides that the name of the instrument is *Civil Aviation Order 20.91 Amendment Instrument 2018 (No. 1)*.

Section 2 provides that the instrument commences on the day after registration.

Section 3 provides that CAO 20.91 is amended as set out in Schedules 1 & 2 of the instrument.

Item 1 of Schedule 1 amends paragraph 3.2 of CAO 20.91 to replace the long title of CASR with the term “CASR” that is defined in the regulations. Similarly, item 2 of Schedule 2 changes references to “CASR 1998” to the defined term “CASR”.

Item 2 of Schedule 1 amends the note to paragraph 3.2 of CAO 20.91 to replace the long title of CAR with the term “CAR” that is defined in the regulations. Items 16 and 25 of Schedule 1 make the same amendment. Similarly, item 1 of Schedule 2 changes references to “CAR 1988” to the defined term “CAR”.

Item 3 of Schedule 1 inserts a note into the definitions section that explains that terms in CAO 20.91 have the same meaning as in the Act and regulations under the Act.

Item 4 of Schedule 1 amends the table at paragraph 4.1 of CAO 20.91 by omitting a number of acronyms and abbreviations that are not used in the CAO.

Item 5 of Schedule 1 amends the table at paragraph 4.1 of CAO 20.91 by inserting the acronym “NM”, being a nautical mile.

Item 6 of Schedule 1 amends the table at paragraph 4.1 of CAO 20.91 by omitting further acronyms and abbreviations that are not used in the CAO.

Item 7 of Schedule 1 amends the paragraph 4.2 of CAO 20.91 by omitting the definition of “Self-contained navigation system”, which is not used in the CAO.

Item 8 of Schedule 1 substitutes paragraph 9.1 of CAO 20.91 with a new paragraph that prescribes particular circumstances in which an Australian registered aircraft is approved for specified navigation specifications. The new paragraph has been redrafted to clarify its meaning, including the relationship between paragraph 9.1 and the following paragraphs.

Item 9 of Schedule 1 substitutes paragraph 9.3 of CAO 20.91 with a new paragraph. The new paragraph has been redrafted to clarify when navigation specifications can be used. An aircraft can use a navigation specification if the AFM or AFMS states that the aircraft is capable of the specification.

Also, under subparagraph 9.3 (b), an aircraft will be approved to use a specified navigation specification if the AFM or AFMS states that the aircraft has an older GPS capability that corresponds to the navigation specification. The navigation specifications and corresponding GPS capabilities are arranged in the table to paragraph 9.3. The table and subparagraph operate to limit approvals for navigation specifications only to specific GPS capabilities of aircraft.

Item 10 of Schedule 1 omits paragraph 9.4 of CAO 20.91, which is not relevant to the matters in subsection 9.

Item 11 of Schedule 1 substitutes paragraph 10.1 of CAO 20.91 with a new paragraph that prescribes additional particular circumstances in which an Australian registered aircraft is approved for specified navigation specifications. The new paragraph has been redrafted to clarify its meaning, including the relationship between paragraph 10.1 and the following paragraphs.

Item 12 of Schedule 1 substitutes paragraphs 10.3 and 10.4 of CAO 20.91 with new paragraphs. New paragraph 10.3 has been redrafted to clarify when navigation specifications can be used. An aircraft can use a navigation specification if the AFM or AFMS states that the aircraft is capable of the specification.

Also, under subparagraph 10.3 (b), an aircraft will be approved to use a specified navigation specification if the AFM or AFMS states that the aircraft has an older GPS capability that corresponds to the navigation specification. The navigation specifications and corresponding GPS capabilities are arranged in the table to paragraph 10.3. The table and subparagraph operate to limit approvals for navigation specifications only to specific GPS capabilities of aircraft.

New paragraph 10.4 has been redrafted to clarify that the aircraft is deemed approved for Baro-VNAV operations in conjunction with RNP APCH-LNAV/VNAV.

Item 13 of Schedule 1 amends paragraph 10.6 of CAO 20.91 by omitting “AFMS Supplement” and substituting “AFMS”, the latter being the intended acronym for the CAO. The same amendment is made in item 3 of Schedule 2.

Item 14 of Schedule 1 substitutes paragraph 11.1 of CAO 20.91 with a new paragraph that prescribes additional particular circumstances in which an Australian registered aircraft is approved for specified navigation specifications. The new paragraph has been redrafted to clarify its meaning, including the relationship between paragraph 11.1 and the following paragraphs.

Item 15 of Schedule 1 substitutes paragraphs 11.3 and 11.4 of CAO 20.91 with new paragraphs. New paragraph 11.3 has been redrafted to clarify when navigation specifications can be used. An aircraft can use a navigation specification if the AFM or AFMS states that the aircraft is capable of the specification.

Also, under subparagraph 11.3 (b), an aircraft will be approved to use a specified navigation specification if the AFM or AFMS states that the aircraft has an older GPS capability that corresponds to the navigation specification. The navigation specifications and corresponding GPS capabilities are arranged in the table to paragraph 11.3. The table and subparagraph operate to limit approvals for navigation specifications only to specific GPS capabilities of aircraft.

New paragraph 11.4 has been redrafted to clarify that the aircraft is deemed approved for Baro-VNAV operations in conjunction with RNP APCH-LNAV/VNAV.

The description for Item 16 of Schedule 1 is given with item 2 above.

Item 17 of Schedule 1 amends paragraph 13.5 by removing references to “PBN” from the terms “navigation authorisation” and “navigation database”, consistent with the terminology of the PBN Manual and other provisions of CAO 20.91.

Item 18 of Schedule 1 amends paragraph 13.12 of CAO 20.91 by substituting “flight days” with the defined term “Flight Days”.

Item 19 of Schedule 1 amends subparagraph 1.3 (c) (i) of Appendix 6 to CAO 20.91 by omitting “and longitudinal”, which words are not relevant to the guidance provided for localiser approaches of the kind covered by the subparagraph.

Item 20 of Schedule 1 amends subparagraph 1.3 (c) (ii) of Appendix 6 to CAO 20.91 by correcting a grammatical error.

Items 21 and 22 of Schedule 1 omit subclauses 7.6 to 7.10 of Appendix 6 to CAO 20.91 and substitutes new subclauses 7.6 to 7.7. The omitted subclauses prescribed various matters for the discontinuation of the use of the “RNP APCH” navigation specification. New subclause 7.6 prescribes circumstances in which a missed approach must be conducted during an operation conducted using the RNP APCH specification.

For the purpose of paragraph 7.6 (e), subclause 7.7 defines “Estimate of Position Uncertainty” or “EPU”.

Among other things, new subclause 7.6 clarifies that a missed approach must be conducted if the cross-track error/deviation equals or is reasonably likely to equal the RNP for the segment of the procedure. The new provision is in line with the guidance in the PBN Manual.

The new subclauses otherwise reproduce the requirements and guidance in the previous version of clause 7.

A note to new subclause 7.6 identifies guidance material for the conduct of RNP APCH procedures but does not prescribe the guidance as a requirement.

Items 23 and 24 of Schedule 1 remedy incorrect cross-references.

Item 25 of Schedule 1 amends subclause 10.9 of Appendix 7 to CAO 20.91 by substituting “RNP AR APCH DEP” with “RNP AR DEP”, which is the correct acronym for an RNP AR departure procedure.

The description for Item 26 of Schedule 1 is given with item 2 above.

Item 27 of Schedule 1 substitutes subclauses 12.5 to 12.7 of Appendix 7 to CAO 20.91, which prescribe matters for the initial validation of data for “RNP AR” navigation specifications, with new clauses 12.5 to 12.8. The new subclauses relax the data validation requirements from the unique Australian requirements under the previous version of the CAO, although the revised requirements are still more restrictive than those required under the PBN Manual.

New subclause 12.5 prescribes requirements for the validation of data for an RNP AR operation before the procedure is flown from a particular initial approach fix in a type of aircraft under the I.F.R.

The procedure must be flown from any of the particular initial approach fixes for the procedure. It is not a requirement to fly the procedure from all initial approach fixes, but the procedure cannot be flown from an initial approach fix the data for which has not been validated under clause 12.

If the matters mentioned in paragraphs (b) to (d) of subclause 12.5 are not confirmed during a data validation flight, then the requirements of the subclause are not met and the conduct of RNP AR procedures in the aircraft type are not permitted under the I.F.R.

New subclause 12.5A provides that a data validation flight for subclause 12.5 may be conducted in an aircraft of the relevant type flown in day visual meteorological conditions, or in a level D flight simulation training device for the aircraft type.

New subclause 12.5B limits the conduct of non-normal operations during a data validation flight conducted in an aircraft. In particular, non-normal operations must not be conducted if the aircraft is carrying passengers, except a passenger who is a CASA officer on duty for the flight, for example to observe the aircraft operator’s procedures.

New subclause 12.5C requires an operator to keep records of a successful data validation flight.

New subclause 12.6 imposes updated and redrafted requirements in relation to the checking and revalidation of new data related to an RNP AR procedure.

New subclauses 12.7 and 12.8 prescribe requirements in relation to the validation of RNP AR procedure data if aircraft systems are modified. Data must be revalidated in accordance with subclauses 12.5 to 12.5C unless the manufacturer of the modified aircraft system states in writing that the modification has no effect on the navigation database or path computation for use of the RNP AR procedure.

Item 28 of Schedule 1 corrects a grammatical error.

Item 29 of Schedule 1 amends paragraph 9.2 (e) of Appendix 9 to CAO 20.91 by inserting the missing word “fly-by” between “are” and “and”, consistent with the corresponding sections of the PBN Manual.

Schedule 2 of the instrument contains 4 items that make multiple amendments to CAO 20.91.

Item 1 of Schedule 2 substitutes “CAR 1988” with “CAR” at specified occurrences of the former term. The amendment adopts the term “CAR” as defined in the regulations.

Item 2 of Schedule 2 substitutes “CASR 1998” with “CASR” at specified occurrences of the former term. The amendment adopts the term “CASR” as defined in the regulations.

Item 3 of Schedule 2 substitutes “AFM Supplement” with “AFMS” at specified occurrences of the former term. The amendment adopts the acronym “AFMS” as defined in paragraph 4.1 of CAO 20.91.

Item 4 of Schedule 2 substitutes “PBN navigation specification” with “navigation specification” at specified occurrences of the former term. The amendment is consistent with the use of the term “navigation specification” in paragraph 4.2 of CAO 20.91 and adopts the term used in the PBN Manual.

Legislation Act 2003 (the LA)

Paragraph 10 (1) (d) of the LA provides that an instrument is a legislative instrument if it includes a provision that amends or repeals another legislative instrument. The instrument amends CAO 20.91, which was registered as a legislative instrument. The instrument is, therefore, a legislative instrument, and is subject to tabling and disallowance in the Parliament under sections 38 and 42 of the LA.

Consultation

CASA conducted public consultation on CAO 20.91 in 2012 and 2014 in accordance with CASA’s standards development public consultation procedures.

The only changes effected by the instrument are those relating to the initial validation of RNP AR data, which was the subject of a request by relevant aircraft operators. RNP AR operations are conducted by 3 operators of Australian registered aircraft. CASA consulted with those operators on the draft amendments and took account of their comments.

The directions in CAO 20.91 will be moved to the new operations regulations that CASA is presently finalising and expects to make in the coming months. CASA has consulted on the new operations regulations.

In these circumstances, CASA is satisfied that no further consultation is necessary or reasonably practicable for the instrument under section 17 of the LA.

Office of Best Practice Regulation (OBPR)

A Regulation Impact Statement (*RIS*) is not required in this instance, as the directions in CAO 20.91 are covered by a standing agreement between CASA and OBPR under which a RIS is not required for directions (OBPR id: 14507).

Statement of Compatibility with Human Rights

The Statement of Compatibility with Human Rights at Attachment 1 has been prepared in accordance with Part 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*. The instrument does not engage any of the applicable rights or freedoms, and is compatible with human rights, as it does not raise any human rights issues.

Making and commencement

The instrument has been made by the Director of Aviation Safety, on behalf of CASA, in accordance with subsection 73 (2) of the Act.

The instrument commences on the day after registration and is repealed in accordance with section 48A of the LA.

Statement of Compatibility with Human Rights

*Prepared in accordance with Part 3 of the
Human Rights (Parliamentary Scrutiny) Act 2011*

Civil Aviation Order 20.91 Amendment Instrument 2018 (No. 1)

This legislative instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

Overview of the legislative instrument

The purpose of the *Civil Aviation Order 20.91 Amendment Instrument 2018 (No. 1)* is to make several minor changes to *Civil Aviation Order 20.91 (Instructions and directions for performance-based navigation) Instrument 2014*.

The changes correct errors, clarify circumstances in which aircraft capable of specified Global Positioning System-based operations are approved to use navigation specifications in support of performance-based navigation (PBN), and change the requirements for the initial validation of data for required navigation performance – authorisation required approach (RNP AR APCH) procedures.

Human rights implications

This legislative instrument does not engage any of the applicable rights or freedoms.

Conclusion

This legislative instrument is compatible with human rights as it does not raise any human rights issues.

Civil Aviation Safety Authority