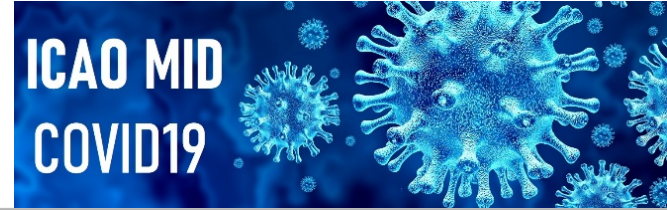




Flight Inspection Webinar

Overview of Relevant ICAO Provisions





Standard Radio Navigation Aids (Annex 10 Vol I)

- the instrument landing system (ILS)
- the microwave landing system (MLS)
- the global navigation satellite system (GNSS)
- the VHF omnidirectional radio range (VOR)
- the non-directional radio beacon (NDB)
- the distance measuring equipment (DME)
- the en-route VHF marker beacon



Ground and flight testing

Radio navigation aids of the types covered by the specifications in Chapter 3 and available for use by aircraft engaged in international air navigation **shall be the subject of periodic ground and flight tests.** (Annex 10 VOL I 2.2.1)

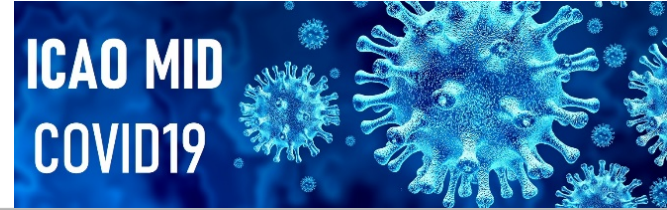
Note.— Guidance on the ground and flight testing of ICAO standard facilities, including the periodicity of the testing, is contained in Attachment C and in the Manual on Testing of Radio Navigation Aids (Doc 8071).



Ground and flight testing

Ground Test

- carried out by a trained specialist using appropriate test equipment at the facility or at a point on the ground remote from the site.
- more appropriate and less costly for accurate and quick evaluation of the facility performance.
- carried out more frequently and can be used as indicators to determine when a flight test is required.



Ground and flight testing

Flight tests

- Those carried out in the air by a trained flight inspection crew using a suitably equipped platform.
- Required to examine the signals-in-space as received at the aircraft after being influenced by external factors such as site conditions, ground conductivity, terrain irregularities, metallic structures, propagation effects, etc.
- Represents in-flight evaluation and provides a sampling of the radiated signals in the operating environment.



Ground and flight testing

Flight Inspection services can be provided by:

- 1- State's flight inspection unit;
- 2- obtained through other States; or
- 3- Commercial companies



ICAO main provisions



Annex 10, Vol I



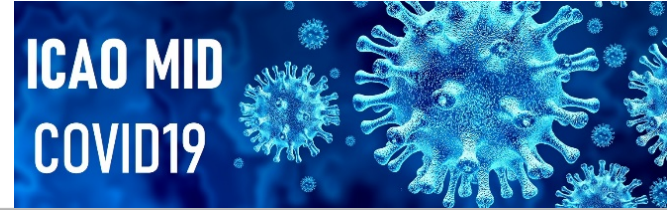
Doc 8071 Vol I, II, III



Doc 9924 MLAT & ADS-B
Flight Testing

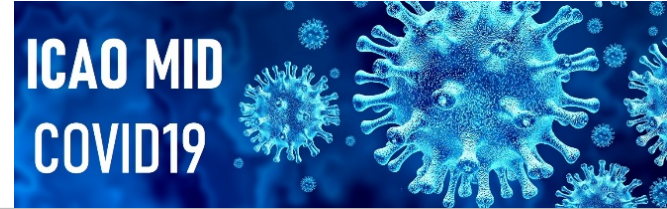


DOC 9906



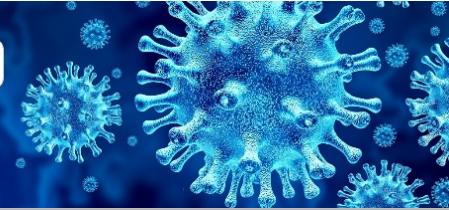
ICAO main provisions

- Annex 10 Vol 1:
 - General provision for Radio Navigation Aids
 - Technical Specifications Radio Navigation Aids
- Doc 8071: provides general guidance on the extent of testing and inspection normally carried out to ensure that radio navigation systems meet the Standards and Recommended Practices (SARPs) in Annex 10. The guidance is representative of practices existing in a number of States with considerable experience in the operation and maintenance of these systems.
- 8071 Doc contains “guidance material” only. The texts and procedures outlined do not have the status of Standards and Recommended Practices (SARPs) except for identified quotations from Annex 10.



Ground and flight testing – USOAP CMA Protocol Question – ANS

PQ No.	Protocol Question	Guidance for Review of Evidence	ICAO References	CE
7.393	Does the State ensure that requirements for flight inspection are established and periodical flight inspections are provided for radio navigation aids?	<ol style="list-style-type: none">1) Review mechanism established to ensure effective implementation.2) Review flight inspection regulations and procedures.3) Verify flight inspection reports. <p><i>Note: This PQ is related to ANS PQ 7.247.</i></p>	STD A10 Vol. I, 2.2 & C3 GM Doc 8071 Vol. I, C1 to C7	CE-7



Ground and flight testing – USOAP CMA Protocol Question – ANS

PQ No.	Protocol Question	Guidance for Review of Evidence	ICAO References	CE
7.247	Does the State ensure that flight inspections of instrument flight procedures, including obstacle checks, are carried out?	<p>1) Review mechanism established to ensure effective implementation.</p> <p>2) Verify reports and results of flight inspections of instrument flight procedures.</p> <p><i>Note: This PQ is related to ANS PQ 7.393.</i></p>	GM Doc 8071 Vol. I, C8	CE-7

