

APPENDIX 9—Installation of ‘Non-Aeronautical’ Avionics Equipment

1. Description

- 1.1. Installation of ‘non-aeronautical’ avionics equipment.

2. Applicability

- 2.1. All unpressurised aircraft less than 5700kg and 10 passenger seats where the modification is not classified as a major modification.

3. General

- 3.1. Appendix 9 to this advisory circular covers the procedures to be carried out when installing ‘non-aeronautical’ avionics equipment. Examples of non-aeronautical avionics equipment covered by this appendix are—

- 3.1.1. cellular telephones

- 3.1.2. audio entertainment systems

- 3.1.3. FM transceivers.

- 3.2. The procedure is only applicable for installations which can be installed on a ‘no hazard, no interference’ basis. If extensive testing or analysis is required, the modification documentation is to be submitted for approval, using a form CAA337, to either the CAA or a design organisation certificated under Part 146.

- 3.3. When using this procedure, the following points should be observed.

- 3.3.1. The equipment is to be suitable for use in aircraft. Examples of aspects to be considered when determining this are—

- 3.3.1.1. the operating environment

- 3.3.1.2. structural integrity of the equipment throughout the flight envelope

- 3.3.1.3. ability of the antenna installation to withstand aerodynamic loads

- 3.3.1.4. flammability requirements.

- 3.3.2. The equipment should be suitable for the intended purpose. The equipment must have the required functionality and be suitable for operation in aircraft by crew or passengers as applicable. The equipment must also be compatible with other systems on the aircraft. If the equipment interfaces with other systems, for example: power supplies, audio panel, intercom units etc., it must not affect the operation of the other systems.

- 3.3.3. The equipment must not present a hazard either by its—

- 3.3.3.1. construction; or

- 3.3.3.2. installation; or

- 3.3.3.3. interface; or

- 3.3.3.4. operation.

- 3.3.4. Installed cellular telephones are to be—
 - 3.3.4.1. approved for connection to any NZ cellular network only
 - 3.3.4.2. disabled during approach and take-off when operating under IFR.
- 3.3.5. The installed equipment should be compatible. For example—
 - 3.3.5.1. an antenna being utilised must be suitable for the intended purpose and matched to the transceiver with which it is being used
 - 3.3.5.2. if installing a radio it must be compatible with the aircraft audio system.

4. Technical instructions

- 4.1. Ensure the aircraft is safe for servicing.
- 4.2. Remove access panels etc. as required in accordance with the aircraft manufacturer's maintenance manual.
- 4.3. Determine a suitable location(s) for all equipment to be installed. Consideration should be given to—
 - 4.3.1. accessibility and visibility of the equipment to the pilot
 - 4.3.2. required operating environment for the equipment
 - 4.3.3. required structural mounting provisions
 - 4.3.4. no possibility of head-strike on the installed equipment for crew or passengers
 - 4.3.5. no restriction during emergency egress.
- 4.4. Install the equipment in the location(s) determined in subsection 4.3 of Appendix 9 to this advisory circular. The installation is to be carried out in accordance with the manufacturer's installation instructions, the aircraft maintenance manual and the guidelines in FAA AC43.13-1B. The installation should be tested to ensure that it will be restrained throughout the flight envelope.
- 4.5. Electrically connect the equipment in accordance with the manufacturer's installation instructions and the aircraft maintenance manual. The equipment is to be powered via an appropriately rated, placarded circuit protective device. Wire listed in FAA AC43.13-1B Chapter 11 or equivalent is to be utilised.
- 4.6. Antennas should be installed in accordance with FAA AC43.13-2B chapter 3 or aircraft manufacturer approved locations. If an antenna is to be installed in other than an approved location—
 - 4.6.1. the antenna is not to be installed within 0.9m of another antenna
 - 4.6.2. post-installation ground and flight tests are to be carried out to confirm the suitability of the antenna location.
- 4.7. Replace any access panels removed in subsection 4.2 of Appendix 9 to this advisory circular.
- 4.8. Post installation ground and, if required, flight tests are to be carried out to determine satisfactory operation of the installed equipment. Checks are also to be carried out to determine satisfactory operation of all disturbed systems, that there is no interference

between avionics systems, no effect on the aircraft compass system and no interference with the aircraft flight controls.

- 4.9. Amend the aircraft's weight and balance records in accordance with advisory circular AC43-2.
- 4.10. Complete an ELA, retain copy with aircraft and submit copy with documentation.
- 4.11. Generate and issue instructions for continued airworthiness.
- 4.12. Complete form CAA043-01 *Modification Record* and process in accordance with section 14 of this advisory circular.
- 4.13. Amend the aircraft's form CAA 2129 in accordance with advisory circular AC43-10.
- 4.14. Make a certified statement of release to service in accordance with rule 43.105, detailing the work carried out and conformity with Appendix 9 to this advisory circular.

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- 3.3.1.4. flammability requirements.

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