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Report: AV13697.003/46

Title: Installation Plan - Indigo One Tracking System
– Convair CV-240/340/440/540/580/600/640

Aircraft: Convair CV-240/340/440/540/580/600/640

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1. INTRODUCTION

This installation plan outlines the basic elements to be considered for the Indigo One Tracking and Communication System Installation in Convair CV-240/340/440/540/580/600/640 aircraft. This plan should be read in conjunction with the IndigoSat Installation Manual, Document Number IS-IM-2008-002, Revision A (or later revision) which provides further details pertinent to the installation of the Indigo One system.

2. INSTALLATION PLANNING

2.1. Select Antenna Position

Select an appropriate antenna location based on the area suggested in Figure 1 below. The antenna should occupy a vacant panel on the cabin roof and be separated from existing antennas by the distances specified in the IndigoSat Installation Manual (IS-IM-2008-002). A minimum distance of 1.0 meter is required from any L-band system antenna.

Note that aircraft fitted with a WAAS GPS system (eg. GNS430W or GNS530W) have been found to be sensitive to Indigo One antenna placement. A distance of approximately 3.0m (10ft) may be required between a WAAS antenna and the Indigo One antenna to prevent interference, requiring a position outside of the region indicated below.

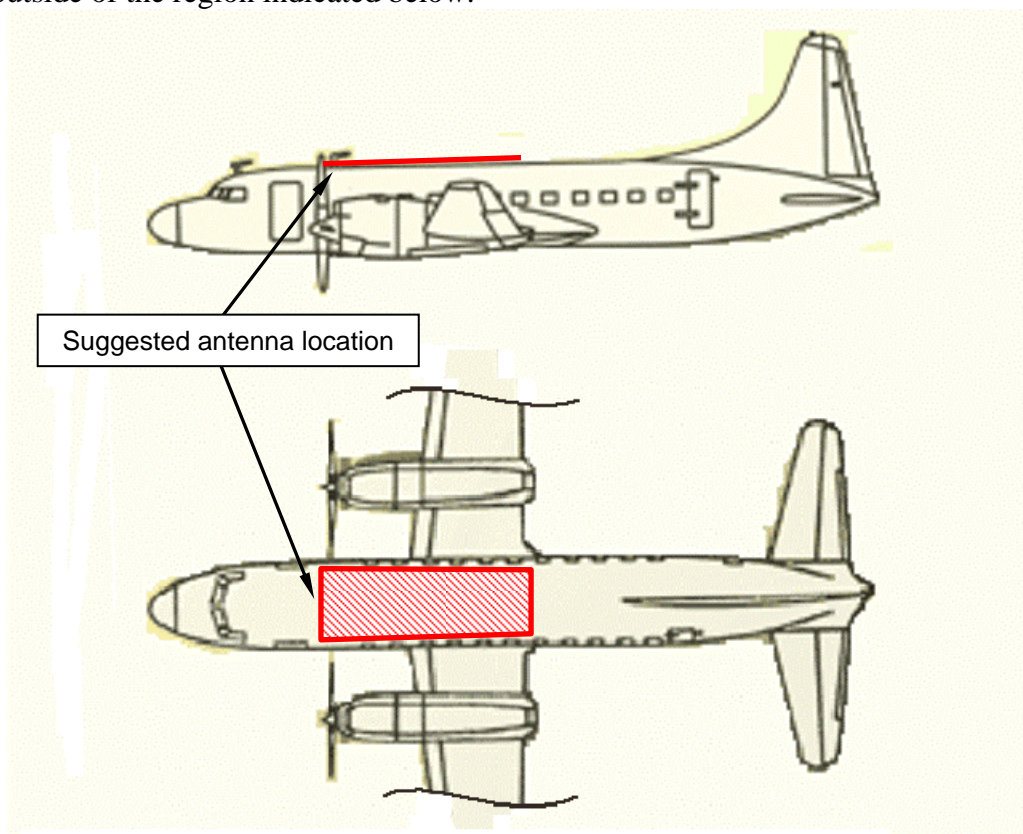


Figure 1. Suggested location of Indigo antenna

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2.2. Select a Panel Position for the Panel Control Unit

Select an appropriate vacant space in the cockpit for the installation of the Indigo display unit. The Indigo One cradle supplied with the kit fits in a standard 6.25” avionics rack. Figure 2 provides possible installation locations.

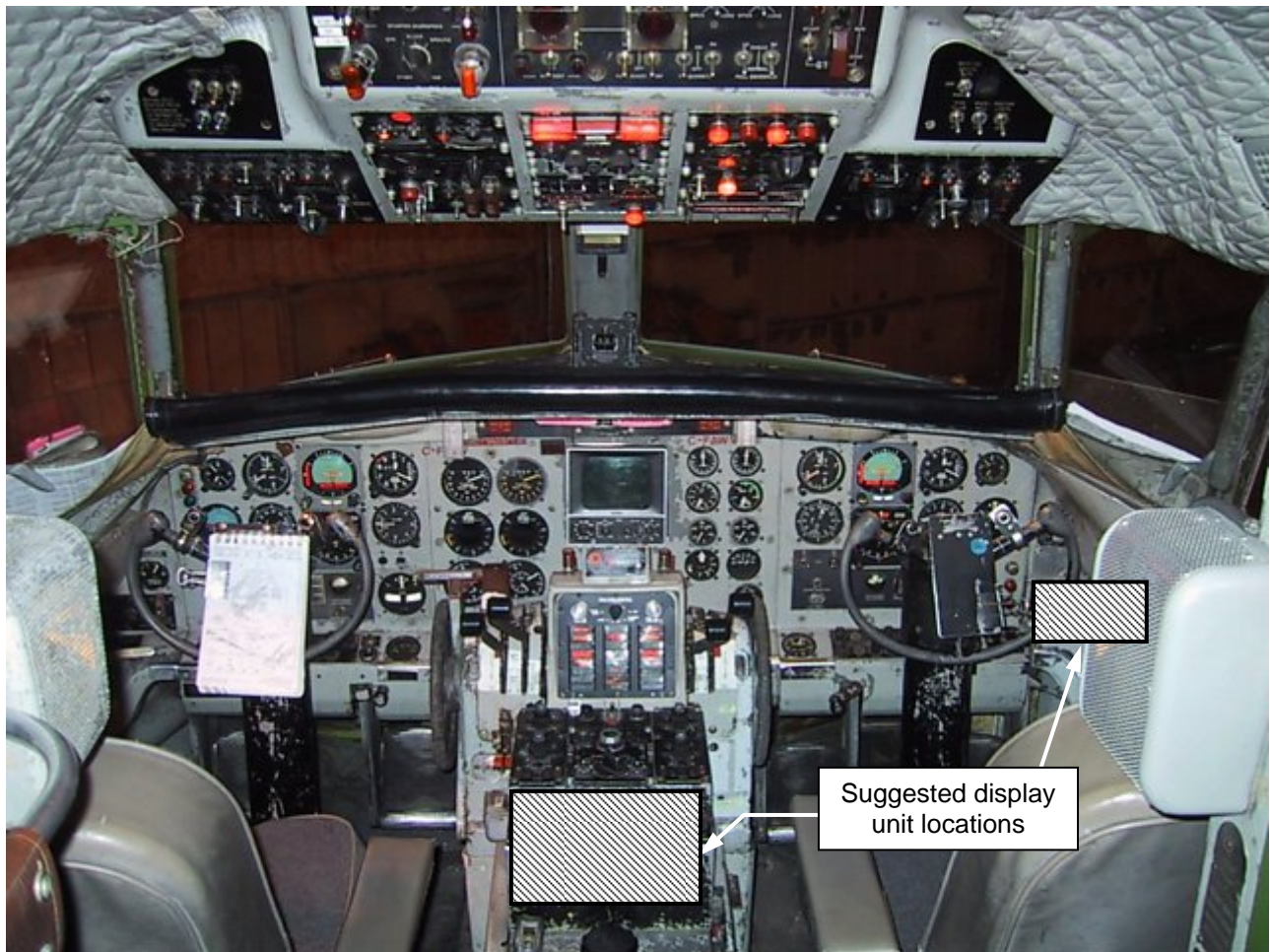


Figure 2. Suggested locations of display unit

There are several possible positions for location of the Indigo One control unit on the Convair aircraft (depending on the model, the layout shown above may also vary). The operator or installer is in the best position to specify where they wish it located based on available space, operational considerations and ease of access for installation. Depending on position chosen and availability of existing avionic rack structure, additional support structure to hold the cradle may be necessary.

If no suitable position is achievable in the instrument panel, then the unit may be installed to the side panels / roof of the cabin or in a baggage compartment. No pilot access to the unit is required for proper operation of the tracking system.

3. INSTALLATION DETAILS

3.1. Install the Antenna

Figure 3 provides the template for hole pattern and size required for the coaxial cable connection to the antenna and the antenna attachment. The indicative antenna doubler size data in Figure 3 is **not** applicable for this installation in pressurised aircraft. As these aircraft are pressurised the antenna connection and breach of the pressure hull must be in accordance with data provided in the manufacturer's structural repair manual. If such information is not available Indigo track must be contacted to have an appropriate design and justification developed for a reinforcing doubler and antenna attachment at the selected antenna location.

For the pressurised fuselage and depending on location existing provisions and fuselage profile at that location, a machined mounting plate for the antenna may be necessary. It would match the antenna base on one face and the fuselage external skin profile on the other.

Refer to the IndigoSat Installation Manual (IS-IM-2008-002) for further information.

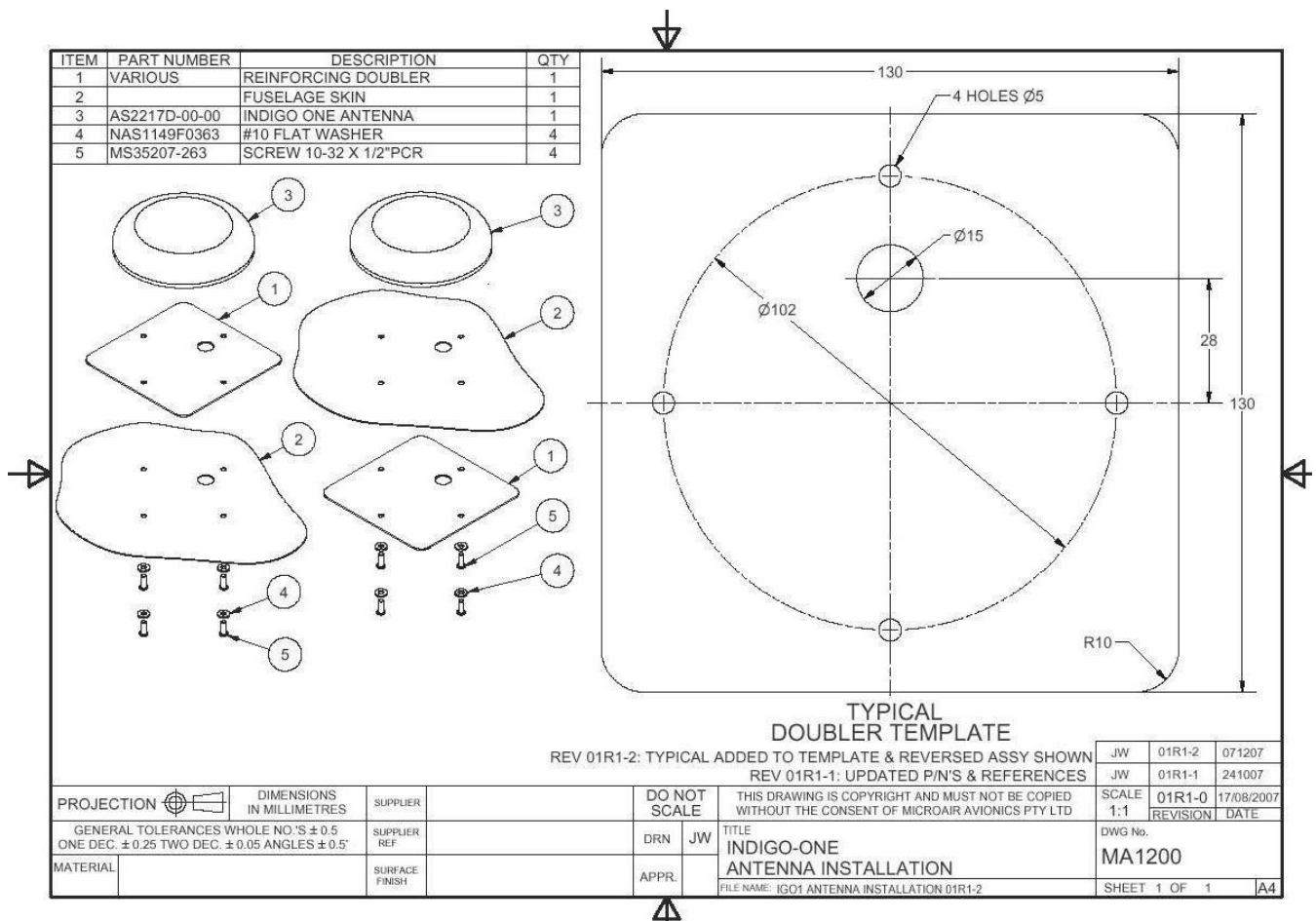


Figure 3. Doubler details.

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3.2. Antenna Cable Routing

The IndigoSat Installation Manual (IS-IM-2008-002) provides the general requirements for cable routing.

The coaxial cable should be run ensuring adequate fixing where possible to existing wiring looms. Attach to these existing wiring bundles by double tie-wrapping. Sufficient securing should be used to prevent any chaffing of the cable. Follow the normal wiring loom routing path of existing cable runs to run the coaxial cable to the selected control unit position determined in Section 2.2.

If the cable needs to pass through frames or bulkheads grommets should be used to prevent chafing or wear of the cable.

3.3. Wiring Harness Installation Procedure

The IndigoSat Installation Manual (IS-IM-2008-002) provides the wiring harness installation procedure, including wiring diagram for the system installation.

If used, placard circuit breakers with function and rating. Text to be similar size and font to others on the panel.

Note that detailed connection of digital inputs should be determined by the installer in conjunction with the organisation approving the installation.

3.4. Install the Panel Control Unit

Install the display unit to the location pre-selected in Section 2.2 in accordance with the details in the IndigoSat Installation Manual (IS-IM-2008-002).

4. FUNCTIONAL TESTING

Carry out the Operation Configuration setup and Communications Testing in accordance with the IndigoSat Installation Manual (IS-IM-2008-002) to ensure correct function of the Indigo One system.

5. POST INSTALLATION

Carry out the post installation requirements detailed in the IndigoSat Installation Manual (IS-IM-2008-002).

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6. STANDARD NOTES

- (1) All work to be conducted by an approved workshop using standard aircraft practices.
- (2) Fasteners used in avionics installations must be metal or nylon thread locked fasteners unless noted otherwise. Alternatively, Loctite 222 or 242 may be used on threads.
- (3) Unless otherwise noted, observe standard sheetmetal practices in accordance with AC43.13-1B Chapter 4, Section 4. Maintain a minimum fastener edge distance of 3d and a minimum fastener pitch of 4d. Material specifications as detailed below:

2024-T3 Alclad Sheet
QQ-A-250/5
- (4) All new unshielded wire to meet M22759/16 specifications. All new shielded wiring to meet MIL-C-27500. Wire gauge as indicated in the wiring diagram. All wiring to be in accordance with CASA AC21.99.