

ST02126CH

FAA Supplemental Type Certificate



Installation of Elementary and Enhanced Surveillance Mode-S Transponders on Boeing 757 Series Aircraft (FAA STC ST00658DE)

OVERVIEW

- » FAA STC ST02126CH
- » European Aviation Safety Agency (EASA) STC 01101.

INTRODUCTION

STC ST02126CH enables installation of elementary and enhanced surveillance Mode-S transponders in accordance with Electronic Cable Specialists (ECS) Master Data List ECS-202731.

YOUR NEEDS

Using STC ST02126CH, the existing Mode-S transponders on your fleet of Boeing 757 aircraft can be upgraded to comply with Mode-S enhanced surveillance requirements.

YOUR BENEFITS

The enhanced Mode-S transponders have the capability to transmit flight identification as part of the transponder interrogation replies. The enhanced transponders will also provide aircraft status and intent information, such as current heading, altitude, airspeed, selected altitude, etc. These new transponders will satisfy the data requirements, or ICAO Document 7040/4, Regional Supplementary Procedures, for SSR Mode-S enhanced surveillance in designated European airspace.

STC AIRCRAFT EFFECTIVITY

- » Boeing 757-200/-200PF/-200CB series aircraft.

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STC LIMITATIONS

- » Configuration 1: None.
- » Configuration 2: Existing Collins transponders installed per FAA approved method. Aircraft with FMC part number 4052506-941 or later, with flight identification capability, is required.
- » Configuration 3: Existing Honeywell transponders installed per FAA approved method. Aircraft with FMC part number 4052506-941 or later, with flight identification capability, is required.
- » Configuration 4: Existing Collins transponders installed per FAA approved method.
- » Configuration 5: Existing ACSS transponders installed per FAA approved method. Aircraft with FMC part number 4052506-941 or later, with flight identification capability, is required.
- » Configuration 6: Existing Honeywell transponders installed per FAA approved method.
- » Configuration 7: Existing ACSS transponders installed per FAA approved method. Aircraft with FMC part number 4052506-941 or later, with flight identification capability, is required.

STC CONFIGURATIONS

- » Configuration 1: Dual enhanced Mode-S provisions.
- » Configuration 2: Dual Collins enhanced Mode-S with flight identification from existing FMS.
- » Configuration 3: Dual Honeywell enhanced Mode-S with flight identification from existing FMS.
- » Configuration 4: Dual Collins enhanced Mode-S with flight identification from new ATC/TCAS panel.
- » Configuration 5: Dual ACSS enhanced Mode-S installation with flight identification from existing FMS. (Not FAA Approved)
- » Configuration 6: Dual Honeywell enhanced Mode-S with flight identification from new ATC/TCAS panel. (Not FAA Approved)
- » Configuration 7: Dual ACSS enhanced Mode-S installation with flight identification from existing FMS.

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PRODUCT DESCRIPTION

Configuration 1: Wiring Provisions

- » Installs wiring provisions for future upgrade of the existing left and right Mode-S transponders to enhanced Mode-S transponders.

Configuration 2: Collins Mode-S Transponders with Flight Identification from FMS

- » Existing Mode-S transponders will be removed and new Rockwell-Collins elementary and enhanced Mode-S transponders will be installed in their place. The existing trays located on the equipment shelves in the electronic bay will be used for installation of both transponders. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.
- » The upgrade to the Mode-S transponders adds the capability to transmit flight identification as part of the interrogation reply to air traffic control ground stations. The flight identification is obtained from the FMS via a data bus.

Configuration 3: Honeywell Mode-S Transponders with flight identification from FMS

- » Existing Mode-S transponders will be removed and new Honeywell elementary and enhanced Mode-S transponders will be installed in their place. The existing trays located on the equipment shelves in the electronic bay will be used for installation of both transponders. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.
- » The upgrade to the Mode-S transponders adds the capability to transmit flight identification as part of the interrogation reply to air traffic control ground stations. The flight identification is obtained from the FMS via a data bus.

Configuration 4: Collins Mode-S Transponders with Flight Identification from Gables Panel

- » Existing Mode-S transponders will be removed and new Rockwell-Collins elementary and enhanced Mode-S transponders will be installed in their place. The existing trays located on equipment shelves in the electronic bay will be used for installation of both transponders. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.
- » The existing transponder control panel will be removed and a new Gables control panel will be installed. This new control panel provides the capability to allow entry of flight identification, as well as being used for selection of either the transponder 1 or transponder 2 for interrogation replies, selection of altitude reporting on or off, selection of the transponder code, and providing fail indication for the Mode-S transponders.
- » The upgrade to the Mode-S transponders adds the capability to transmit flight identification as part of the interrogation reply to air traffic control ground stations. Flight identification is entered via the transponder control panel keypad. The flight identification entered by the pilot is transferred to the transponders via a data bus.

Configuration 5 (not FAA approved) Dual ACSS Mode-S Transponders with Flight Identification from FMS

- » Existing Mode-S Transponders will be removed and new ACSS elementary and enhanced Mode-S transponders will be installed in their place. The existing trays located on the equipment shelves in the electronic bay will be used for installation of the elementary and enhanced surveillance Mode-S. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.
- » The upgrade to the Mode-S transponders adds the capability to transmit flight identification as part of the interrogation reply to air traffic control ground stations. The flight identification is obtained from the FMS via a data bus.

Configuration 6 (not FAA approved) Honeywell Mode-S Transponders with Flight Identification from Gables Panel

- » Existing Mode-S transponders will be removed and new Honeywell elementary and Enhanced Mode-S transponders will be installed in their place. The existing trays located on the equipment shelves in the electronic bay will be used for installation of the elementary and enhanced surveillance Mode-S. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.
- » The existing transponder control panel will be removed and a new Honeywell control panel will be installed. This new control panel provides the capability to allow entry of flight identification, as well as being used for selection of either the transponder 1 or transponder 2 for interrogation replies, selection of altitude reporting on or off, selection of the transponder code, and providing fail indication for the Mode-S transponders.
- » The upgrade to the Mode-S transponders adds the capability to transmit flight identification as part of the interrogation reply to air traffic control ground stations. Flight identification is entered via the transponder control panel rotary knob or keypad. The flight identification entered by the pilot is transferred to the Mode-S transponders via a data bus.

Configuration 7: ACSS Mode-S Transponders with Flight Identification from FMS

- » Existing Mode-S transponders will be removed and new ACSS elementary and enhanced Mode-S transponders will be installed in their place. The existing trays located on the equipment shelves in the electronic bay will be used for installation of both transponders. Additional wiring is installed through unused pins in existing connectors of the aircraft and is terminated at the respective equipment.
- » The upgrade to the Mode-S transponders adds the capability to transmit flight identification as part of the interrogation reply to air traffic control ground stations. The flight identification is obtained from the FMS via a data bus.

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