

# ST02162CH

## FAA Supplemental Type Certificate



### Installation of Elementary and Enhanced Surveillance Mode-S Transponders on Boeing 737 Series Aircraft (FAA STC ST02162CH)

#### OVERVIEW

- » FAA STC ST02162CH.
- » European Aviation Safety Agency (EASA) STC 01680.
- » Transport Canada Acceptance of STC ST02162CH.
- » Ukraine State Aviation Administration STC 0075.

#### INTRODUCTION

STC ST02162CH enables the installation of elementary or enhanced surveillance Mode-S transponders in accordance with Electronic Cable Specialists (ECS) Master Data List ECS-203150.

#### YOUR NEEDS

Using STC ST02162CH, the existing Mode-S transponders on your fleet of Boeing 737 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 reply. 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 737-300/-400/-500/-600/-700/-800 series aircraft.

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#### STC LIMITATIONS

- » Configuration 1: Dual Honeywell Mode-S system previously installed per FAA approved method, FMC Software part number version U6 or later (enables the flight number).
- » Configuration 2: Dual Rockwell Collins Mode-S transponder system previously installed per FAA approved method.
- » Configuration 3: Reserved.
- » Configuration 4: Dual Honeywell Mode-S transponder system previously installed per FAA approved method. The flight identification compatible FMC must be previously installed.
- » Configuration 5: Dual Rockwell Collins Mode-S transponder system previously installed per FAA approved method. The flight identification compatible FMC must be previously installed.
- » Configuration 6: Dual Rockwell Collins Mode-S transponder system previously installed per FAA approved method. The flight identification compatible FMC must be previously installed.
- » Configuration 7: Dual Honeywell Mode-S transponder system previously installed per FAA approved method.
- » Configuration 8: Dual ACSS Mode-S transponder system previously installed per FAA approved method.
- » Configuration 9: Dual ACSS Mode-S transponder system previously installed per FAA approved method. The FMC Software part number version U6 or later (enables the flight number).

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### STC LIMITATIONS

- » Configuration 1: Dual Honeywell enhanced Mode-S transponders with flight identification from existing FMS on 737-600/-700/-800 series aircraft.
- » Configuration 2: Dual Collins enhanced Mode-S transponders with flight identification from new Control Panel on 737-300/-400/-500 series aircraft.
- » Configuration 3: Reserved.
- » Configuration 4: Dual Honeywell enhanced Mode-S transponders with flight identification from existing FMS on 737-300/-400/-500 series aircraft.
- » Configuration 5: Dual Collins enhanced Mode-S transponders with flight identification from existing FMS on 737-300/-400/-500 series aircraft.
- » Configuration 6: Dual Collins enhanced Mode-S transponders with flight identification from existing FMS on 737-600/-700/-800 series aircraft.
- » Configuration 7: Dual Honeywell enhanced Mode-S transponders with flight identification from new control panel on 737-300/-400/-500 series aircraft.
- » Configuration 8: Dual ACSS enhanced Mode-S transponders with flight identification from new control panel on 737-300/-400/-500 series aircraft.
- » Configuration 9: Dual ACSS enhanced Mode-S transponders with flight identification from existing FMS 737-300/-400/-500 series aircraft.

### STC LIMITATIONS

Configuration 1: 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 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 2: Rockwell-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 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.

Configuration 3: Reserved

Configuration 4: 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 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 5: Dual Rockwell-Collins Mode-S Transponders with Flight Identification from FMS

- » Existing Mode-S transponders will be removed and new 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 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.

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### Configuration 6: Dual Rockwell-Collins Mode-S Transponders with Flight Identification from FMS

- » Existing Mode-S transponders will be removed and new 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 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 7: 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 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.

### Configuration 8: ACSS Mode-S Transponders with Flight Identification from Gables Panel

- » 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 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.

### Configuration 9: ACSS Mode-S Transponders with flight identification from Gables Panel

- » 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 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.

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