

# ST02184CH

## FAA Supplemental Type Certificate



### Installation of Elementary and Enhanced Surveillance Mode-S Transponders for Boeing MD-11 Series Aircraft and DC-10 Series Aircraft (FAA STC ST02184CH)

#### OVERVIEW

- » FAA STC ST02184CH.
- » European Aviation Safety Agency (EASA) STC 01689.
- » Transport Canada Validation of STC ST02184CH.
- » National Aviation Agency Brazil STC 2006S07-01 for MD-11 and MD-11F.
- » National Aviation Agency Brazil STC 2006S08-01 for DC-10-15, DC-10-30, DC-10-30F.

#### INTRODUCTION

STC ST02126CH enables installation of enhanced Mode-S transponders in accordance with Electronic Cable Specialists (ECS) Master Data List ECS-203475.

#### YOUR NEEDS

Using STC ST02184CH, the existing Mode-S transponders on your fleet of Boeing MD-11 series aircraft and/or Boeing DC-10 series aircraft can be upgraded to comply with Mode-S enhanced surveillance requirements.

#### YOUR BENEFITS

The enhanced Mode-S transponders will 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.

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#### STC AIRCRAFT EFFECTIVITY

- » Boeing MD-11 & MD-11F series aircraft.
- » Boeing DC-10-10/-10F/-15/-30/-30F/-40/-40F series aircraft.

#### STC LIMITATIONS

- » Configuration 1: Existing Honeywell Mode-S transponders previously installed per FAA approved method.
- » Configuration 2: Existing ACSS Mode-S transponders previously installed per FAA approved method.
- » Configuration 3: Existing ACSS Mode-S transponders previously installed per FAA approved method; existing FMS is upgraded to be flight identification compatible by FAA approved method.
- » Configuration 4: Existing Honeywell Mode-S transponders previously installed per FAA approved method; existing FMS is upgraded to be flight identification compatible by FAA approved method.
- » Configuration 5: Existing Collins Mode-S transponders previously installed per FAA approved method.
- » Configuration 6: Existing Collins Mode-S transponders previously installed per FAA approved method; existing Honeywell FMS is upgraded to be flight identification compatible per FAA approved method.
- » Configuration 7: Existing ACSS Mode-S transponders previously installed per FAA approved method.
- » Configuration 8: Existing Collins Mode-S transponders previously installed per FAA approved method.

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### STC CONFIGURATIONS

- » Configuration 1: Dual Honeywell enhanced Mode-S transponders with G7490-09 Control Panel on Boeing MD-11 & MD-11F series aircraft.
- » Configuration 2: Dual ACSS enhanced Mode-S transponders with G7490-09 Control Panel on Boeing MD-11 & MD-11F series aircraft.
- » Configuration 3: Dual ACSS enhanced Mode-S transponders with flight identification from FMS on Boeing MD-11 & MD-11F series aircraft.
- » Configuration 4: Dual Honeywell enhanced Mode-S transponders with flight identification from FMS on Boeing MD-11 & MD-11F series aircraft.
- » Configuration 5: Dual Collins enhanced Mode-S transponders with G7490-09 Control Panel on Boeing MD-11 & MD-11F series aircraft.
- » Configuration 6: Dual Collins enhanced Mode-S transponders with flight identification from FMS on Boeing MD-11 & MD-11F series aircraft.
- » Configuration 7: Dual ACSS enhanced Mode-S transponders with G7490-31 Control Panel on DC-10-10/-10F/-15/-30/-30F/-40/-40F series aircraft.
- » Configuration 8: Dual Collins enhanced Mode-S transponders with G7490-25 Control Panel on DC-10-10/-10F/-15/-30/-30F/-40/-40F series aircraft.

### PRODUCT DESCRIPTION

Configuration 1: Dual Honeywell Enhanced 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 2: Dual ACSS Enhanced Mode-S Transponders with Flight Identification from Gables Panel

- » Existing Mode-S transponders will be removed and new ACSS 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: Dual ACSS Enhanced Mode-S Transponders with Flight Identification from FMS

- » Existing Mode-S transponders will be removed and new ACSS 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 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 4: Dual Honeywell Enhanced Mode-S Transponders with Flight Identification from FMS

- » Existing Mode-S transponders will be removed and new Honeywell 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 5: Dual Collins Enhanced Mode-S Transponders with Flight Identification from Gables Panel

- » Existing Mode-S transponders will be removed and new Collins 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 6: Dual Collins Enhanced Mode-S Transponders with Flight Identification from FMS

- » Existing Mode-S transponders will be removed and new Collins 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: Dual ACSS Enhanced Mode-S Transponders with Flight Identification from Gables Panel

- » Existing Mode-S transponders will be removed and new ACSS 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: Dual Collins Enhanced Mode-S Transponders with Flight Identification from Gables Panel

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