

# ST02311CH

## FAA Supplemental Type Certificate



Installation of Elementary and Enhanced Surveillance Mode-S Transponders on Boeing 777 Series Aircraft  
(FAA STC ST02311CH)

### OVERVIEW

- » FAA STC ST023113CH.
- » General Administration of Civil Aviation of China Validation of STC ST02311CH.

### INTRODUCTION

STC ST02311CH enables installation of enhanced Mode-S transponders in accordance with Electronic Cable Specialists (ECS) Master Data List ECS-203807.

### YOUR NEEDS

Using STC ST02311CH, the existing Mode-S transponders on your fleet of Boeing 777 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.

### STC AIRCRAFT EFFECTIVITY

- » Boeing 777-200/-300/-300ER series aircraft.

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### STC LIMITATIONS

- » Configuration 1: Existing Honeywell Mode-S transponders previously installed per FAA approved method.
- » Configuration 2: Existing ACSS or Collins Mode-S transponders previously installed per FAA approved method; TCAS part number 7517900-10004 or later previously installed.
- » Configuration 3: Existing ACSS or Collins Mode-S transponders previously installed per FAA approved method; FMS with flight identification capability previously installed; TCAS part number 7517900-10004 or later previously installed.
- » Configuration 4: Existing Honeywell Mode-S transponders previously installed per FAA approved method; FMS with flight identification capability previously installed.

### STC CONFIGURATIONS

- » Configuration 1: Dual Honeywell enhanced Mode-S with flight identification from Gables panel.
- » Configuration 2: Dual ACSS enhanced Mode-S with flight identification from Gables panel.
- » Configuration 3: Dual ACSS enhanced Mode-S with flight identification from FMC.
- » Configuration 4: Dual Honeywell enhanced Mode-S with flight identification from FMC.

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### 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 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 FMC

- » 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 FMC

- » 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 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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