787-8

Flight Crew Operations Manual Bulletins

Air India Limited

Bulletin Package Revision: 8F
Bulletin Package Date: January 23, 2013

This Bulletin Package is an Addendum to:
Document Number: D615Z003-AIN
Revision Number: 8
Revision Date: August 17, 2012

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General

The Boeing Company issues Flight Crew Operations Manual Bulletins to provide important information to flight crews prior to the next formal revision of the manual. The transmitted information may be of interest to only specific Operators or may apply to all Operators of this model airplane. Each bulletin will vary.

Bulletins are dated and numbered sequentially. Each bulletin identifies airplanes affected by the bulletin. Absence of airplane effectivity indicates the bulletin applies to all airplanes in an Operator's fleet. When appropriate, the next formal Flight Crew Operations Manual revision will include an updated Bulletin Addendum (BA) and bulletin record page to reflect current bulletin status.

Each bulletin identifies airplanes affected by the bulletin. The airplane effectivity is defined as follows:

- Effectivity range - effectivities in parentheses indicate the corrective service bulletin is planned to be accomplished and some airplanes may be complete
- All Airplanes - the bulletin applies to all airplanes in an Operator's fleet
- Descriptive statement - the bulletin applies to airplanes with specific equipment

Bulletin status is defined as follows:

- In Effect (IE) – the bulletin contains pertinent information not otherwise covered in the Flight Crew Operations Manual. The bulletin remains active and should be retained in the manual
- Incorporated (INC) – Operating information in this bulletin is incorporated into the Flight Crew Operations Manual. The bulletin will be cancelled and removed from the Bulletin Addendum for the next formal FCOM publication
- Cancelled (CANC) – the bulletin is no longer active and has been removed from the BA. All bulletins previously cancelled are no longer listed in the Bulletin Record

Replacement pages are no longer issued with bulletins. The FCOM (V1V2) and QRH updates are issued as a revision with the next formal publication.

If an operator chooses to print their FCOM/QRH for distribution, this Bulletin Addendum should be inserted directly behind the FCOM BA instructions (page 0.6.1).

Number	Subject	Date	Status
AIN-1 R5	Annunciated and Unannunciated Cabin Temperature Non-Normal Checklists	August 17, 2012	IE
AIN-2	Autothrottle Disconnect During a Go-Around	August 15, 2011	IE
AIN-3 R1	Flight Director Erratic Behavior During GLS	August 31, 2012	IE
AIN-5 R9	Miscellaneous Operational Anomalies	January 3, 2013	IE
AIN-6	Jettison Impingement at Flaps 20, 25, and 30	November 9, 2011	IE
AIN-7	Predictive Windshear Inhibit Changes During Takeoff	November 9, 2011	IE
AIN-9 R1	Loss of Toilet Flushing when Cabin Utility Bus is Turned Off	April 23, 2012	IE
AIN-10 R1	Weather Radar and Transponder Settings on the TCP	May 8, 2012	IE
AIN-11 R2	Anomalous TAT Probe Logic Affecting Primary Ice Detection System (PIDS)	August 31, 2012	IE
AIN-13 R1	Nuisance Window Heat Indications	August 17, 2012	IE
AIN-15	Nuisance Operation of the Parking Brake Lever	November 9, 2011	IE
AIN-20	EICAS Messages That May Show After Short Term Operation On Standby RAT Electrical Power In-flight.	November 9, 2011	IE
AIN-28	FMC Flight Plan Loss	February 3, 2012	IE
AIN-29 R1	Erroneous STAB GREENBAND Message	August 31, 2012	IE
AIN-30	APU Bowed Rotor Hung Start	March 5, 2012	IE
AIN-31 R1	Erroneous Relative Bearing for TCAS, PWS, and WXR	August 31, 2012	IE
AIN-32 R1	Electrical Anomaly During Simultaneous Engine Start	August 17, 2012	IE

Number	Subject	Date	Status
AIN-34 R1	Air Cycle Machine (ACM) Freezing	August 17, 2012	IE
AIN-35 R2	Potential Roll and Pitch Capture Logic Error	January 3, 2013	IE
AIN-36	Abeam Points May Cause Route Deactivation	January 3, 2013	IE
AIN-37	Takeoff Data Uplink Anomalies When Runway Intersections Are Used	January 23, 2013	IE

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Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

787

Number: AIN-1 R5

IssueDate: August 17, 2012

Airplane Effectivity: All Airplanes

Subject: Annunciated and Unannunciated Cabin Temperature Checklists

Reason: Possible erroneous CABIN TEMPERATURE sensor data.

Revised Operating Instructions to direct flight crews to the QRH/ECL and removed Cabin Temp Cold checklist from bulletin.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

The EICAS advisory message CABIN TEMPERATURE may show when excessively hot or cold conditions exist in the flight deck. Certification analysis has determined that the CABIN TEMPERATURE message may also be displayed as a nuisance message when excessive hot or cold conditions do not exist in the flight deck.

In addition, flight test and analysis have determined that certain combinations of failures can result in excessively cold cabin temperatures at intermediate flight altitudes when operating with a low passenger count. During these failure conditions, cold temperatures are more likely to occur at latitudes and during seasons when OAT is significantly below standard.

The failure combinations are:

- Engine failure + APU failure
- Engine failure + Engine Starter/Generator failure
- Engine failure + CAC failure
- CAC failure + opposite side CAC failure
- Add Heat Valve failure + opposite side Add Heat Valve failure

- CAC failure + opposite side Add Heat Valve failure

Under some of these conditions, trim air distribution to the passenger cabin may be uneven, resulting in colder temperatures in the aft cabin. Selecting full cold on the passenger cabin temperature control and the flight deck temperature control results in a warmer air supply to the aft passenger cabin.

To respond to these possible conditions, in addition to the annunciated CABIN TEMPERATURE checklist, two unannunciated checklists, Cabin Temp Cold and Cabin Temp Hot have been developed.

Operating Instructions

The flight crew must assess the cabin temperature situation and use good judgement to determine the safest course of action. If the EICAS advisory message CABIN TEMPERATURE is shown but the flight crew determines that the flight deck and passenger cabin are not excessively hot or cold, the CABIN TEMPERATURE message is a nuisance and the non-normal checklist should not be accomplished.

If the EICAS advisory message CABIN TEMPERATURE is shown and the flight deck or passenger cabin is excessively hot or cold, accomplish the annunciated CABIN TEMPERATURE checklist.

If the passenger cabin is determined to be excessively hot and the EICAS advisory message CABIN TEMPERATURE is not shown, the flight crew should accomplish the Cabin Temp Hot unannunciated non-normal checklist.

If the passenger cabin is determined to be excessively cold and the EICAS advisory message CABIN TEMPERATURE is not shown, the flight crew should accomplish the Cabin Temp Cold unannunciated non-normal checklist.

All of the cabin temperature-related checklists are intended to be used for temperature conditions that present a health hazard to the crew or passengers, and not to address comfort issues alone.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-1 R5 as "In Effect" (IE).

A future software update is scheduled to correct the CABIN TEMPERATURE message logic. A separate future software update is scheduled to ensure that air conditioning system logic provides optimal heating in certain failure conditions. After installation of these software changes the Cabin Temp Cold and Cabin Temp Hot checklists will be deleted and this bulletin will be cancelled.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

Mailing Address:	Boeing Commercial Airplanes Commercial Aviation Services Attention: 787 Manager, Flight Technical Data P.O. Box 3707, M/C 20-89 Seattle, Washington 98124-2207 USA
Email:	flighttraining@boeing.com
Telephone:	(206) 662-4000
Fax:	(206) 662-4743

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Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-2

IssueDate: August 15, 2011

Airplane Effectivity: All Airplanes

Subject: Autothrottle Disconnect During a Go-Around

Reason: That the autothrottle may disconnect during a go-around from a flight director only approach.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

The Actuator Control Electronics (ACE) are part of the flight control system. The ACEs connects the control surfaces and airplane system components with the flight control system. The 787 has four ACEs: L, C1, C2, and R. The problem does not occur when the R ACE fails.

With the failure of either L, C1, or C2 ACE, the flight control system does not correctly read the failed status of the takeoff go-around (TO/GA) switches for the failed ACE. When a TO/GA switch is pressed during a manually flown Flight Director (FD) approach the flight control system does not sense a valid TO/GA switch actuation. This causes the autothrottle to disconnect when the airplane transitions to TO/GA mode.

When the autothrottle disconnects, the EICAS Caution message AUTOTHROTTLE DISC shows, the amber caution light illuminates, and aural beeper sounds.

The autothrottle may be reengaged at any time using the Mode Control Panel A/T switch.

If the autopilot is engaged with an ACE failure, TO/GA switch actuation is correctly sensed and the autothrottle stays engaged throughout the go-around maneuver.

Operating Instructions

When the L, C1, or C2 ACE has failed the flight crew should be aware that if in FD only mode, TO/GA switch activation will cause the autothrottle to disengage with the appropriate flight deck indications. The crew should manually set go-around power and reengage the autothrottle as appropriate.

ACE failures are shown by the following EICAS messages:

L ACE:

SPOILER PAIRS, STABILIZER L2, NO LAND 3

C1 ACE:

SPOILERS, STABILIZER L2, AUTO SPEEDBRAKE, NO LAND 3

C2 ACE:

A/P BACKDRIVE COLUMN, A/P BACKDRIVE PEDAL, A/P BACKDRIVE WHEEL, STABLIIZER R2, SPOILER PAIRS, NO LAND 3

Additional Indications:

The Flight Control (FCTL) system synoptic page will show blank spoilers and an amber ACE icon at the bottom of the page.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-2 as "In Effect" (IE).

This condition is temporary until the software is modified. This bulletin remains in effect until further notice.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

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Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-3 R1

IssueDate: August 31, 2012

Airplane Effectivity: VT-AND, VT-ANH - VT-ANK

Subject: Flight Director Erratic Behavior During GLS

Reason: To inform flight crews of a F/D anomaly when switching approach modes between ILS or approaches using IAN and GLS.

Added Boeing Service Bulletin number.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

When flying a Flight Director (FD) GLS approach (FLT DIR displayed on PFD) with LOC or GS modes active, if any non-GLS is loaded and executed without exiting the current GLS approach mode, the FD pitch bar may become erratic over a period of approximately 4 seconds or disappear from view. Similar FD behavior can also occur when a GLS approach is selected and executed without exiting the current FD only ILS or approach using IAN.

Also, selecting or deselecting a FD only GLS approach can result in large step changes in the FD pitch or roll bars. Autopilot engaged and ILS to IAN transitions are not affected.

Operating Instructions

During FD only GLS approaches with LOC or GS active, the flight crew must turn off both FD switches before selecting an ILS or an approach using IAN. In addition, during a FD only ILS approach (LOC/BCRS or GS) or an approach using IAN (FAC GP) the flight crew must turn off both FD switches before selecting a GLS approach. If both FD switches are not turned off, the flight crew should not follow the erroneous FD bar until the FD switches have been cycled.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-3 R1 as "In Effect" (IE).

This issue is temporary until a software revision is made. This bulletin will be cancelled after Boeing is notified that all affected airplanes have been modified by Boeing Service Bulletin B787-81205-SB270008-00.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

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Fax:	(206) 662-4743

CS3 4744

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-5 R9

IssueDate: January 3, 2013

Subject: Miscellaneous Operational Anomalies

Reason: To inform flight crews of several minor system anomalies.

Communications - Added Boeing service bulletin number.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

Several airplane systems operating anomalies have been observed during flight test. This bulletin summarizes these anomalies for flight crew reference.

Operating Instructions

Air Systems

Nuisance EICAS Warning message CABIN ALTITUDE and cabin altitude indication [affects all airplanes – to be corrected by a future software update]

An erroneous cabin altitude indication of 43,100 feet and nuisance EICAS Warning message CABIN ALTITUDE can occur when both Remote Sensor Units (RSU), Captain's Instrument Bus, First Officer's Instrument Bus, or the associated Remote Power Distribution Units (RPDU) fail. The likelihood of this failure occurring is very remote. The indications on the EICAS Pressurization Display (cabin pressure and rate-of-change) will not provide correct data to interpret the nuisance situation. Therefore, the CABIN ALTITUDE non-normal checklist should be followed.

Communications

Intermittent HF SELCAL detection in the polar region [affects all airplanes – to be corrected by a future system update]

During flight tests in the polar region above 70 degrees N latitude, the SELCAL system did not perform as expected. The SELCAL receiver's noise rejection was not adequate to ensure reliable detection of SELCAL dual tones in the presence of typical HF noise conditions in remote locations. For flights above 70 degrees N latitude, flight crews should maintain a listening watch on HF.

Lack of standby frequency synchronization with data mode commanded in active [affects all airplanes – to be corrected by a future software update]

This anomaly occurs when using the VHF communication manager page to command the right or center VHF into the DATA mode, or when using the HF communication manager page to command the left or right HF radio into the DATA mode. After the command is received by the radio, changes to the standby frequency on the radio will not synchronize with the other Tuning Control Panels (TCP). The anomaly does not occur if a radio is placed in the DATA mode manually using the TCP. Also, if the VHF or HF communication manager page is used to command radios out of the DATA mode, the standby frequencies will synchronize normally. Manual transfer of the standby frequency into the active frequency window works normally

Inability to terminate multiple ATIS or TWIP Automatic Update requests [affects all airplanes - to be corrected by a future software update]

If multiple ATIS - ARRIVAL WITH AUTOMATIC UPDATE or multiple TWIP - AUTOMATIC UPDATE request are made only one can be terminated normally. After a request is terminated, the TERMINATE AUTOMATIC UPDATE selection is inhibited. Thus, it is recommended that only one ATIS-ARRIVAL WITH AUOTMATIC UPDATE and one TWIP-AUTOMATIC UPDATE be requested. To terminate automatic updates from multiple stations, repeat the request for one of the stations to be terminated. The TERMINATE AUTOMATIC UPDATE selection will then be available. This "re-select and terminate" action can be repeated to terminate additional automatic update requests.

VT-AND, VT-ANH - VT-ANM

Transponder failures related to manual transponder switching [affects all airplanes – to be corrected by Boeing Service Bulletin B787-81205-SB340008]

Due to a transmitter power switching anomaly, manually switching between transponders while the transmitter is powered can cause a transponder failure. Automatic switching between transponders is not affected. Power down the active transponder completely by selecting the transponder mode to STBY on the Alerting and Transponder Panel (ATP), for a minimum of 10 seconds before switching transponders on the Tuning Control Panel (TCP) XPDR page. After selecting the new transponder on the TCP, the desired transponder mode may be selected immediately on the ATP.

Electrical

Nuisance ELEC GEN OFF APU L, R Advisory message [affects all airplanes – to be corrected by a future software update]

When an Auxiliary Generator Control Unit has failed, the ELEC GEN OFF APU L, R message will show even when the APU is not running. This is a temporary condition until a software change is made to allow this message to show when a fault is detected in the Auxiliary Generator Control Unit controller only while the APU is running.

Equipment cooling override valve motor anomaly [affects all airplanes – to be corrected by a future software update]

Without external power on the airplane, when the APU is started on the ground, the equipment cooling override valve motors will be load shed, and the OVRD VALVE FWD MOTOR 2 and OVRD VALVE AFT MOTOR 2 status messages will show. After engine start, the motors will be powered and the messages will clear automatically.

Flight Controls

VT-AND, VT-ANH - VT-ANK

Nuisance EICAS Caution, Advisory, and Status messages show during external power starts (2 or 3 EP). [affects all airplanes – to be corrected by Boeing Service Bulletin B787-81205-SB270008]

Due to power transfer behavior and timing issues when starting engines on external power, the following messages may show during or after the first engine start:

FLIGHT CONTROLS (Caution)

AUTO SPEEDBRAKE (Advisory)

SPOILERS (Advisory)

SPOILER PAIRS (Advisory)

All Alert level messages will clear following second engine start when all hydraulic systems are pressurized. Any ECIAS messages remaining should be considered valid.

Flight Management, Navigation

VT-AND, VT-ANH - VT-ANK

Nuisance SGL SOURCE APPROACH Caution message [affects all airplanes – to be corrected by Boeing Service Bulletin B787-81205-SB270008-00]

The EICAS Caution message SGL SOURCE APPROACH may intermittently show and clear without any pilot action on the ground, and in flight when not using the glideslope and localizer for guidance. This nuisance condition is caused by overly sensitive fault detection logic in the INR and will be fixed in a future update to the INR. No crew action is needed.

Warning Systems

Nuisance EICAS Advisory message GND PROX SYS may show [affects all airplanes – to be corrected by a future software update]

When the airplane is flying faster than 250 knots, selecting FLAP OVRD or GEAR OVRD may cause the EICAS Advisory GND PROX SYS to show. No flight crew action is needed.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-5 R9 as "In Effect" (IE).

Items in this bulletin will be removed by future software updates via Boeing Service Bulletins.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

Mailing Address:	Boeing Commercial Airplanes Commercial Aviation Services Attention: 787 Manager, Flight Technical Data P.O. Box 3707, M/C 20-89 Seattle, Washington 98124-2207 USA
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Telephone:	(206) 662-4000
Fax:	(206) 662-4743

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Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-6

IssueDate: November 9, 2011

Airplane Effectivity: All Airplanes

Subject: Jettison Impingement at Flaps 20, 25, and 30

Reason: Flaps 20 or greater, in combination with certain side-slips, causes the fuel to re-attach/impinge on the aft portion of the wing while jettisoning fuel.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

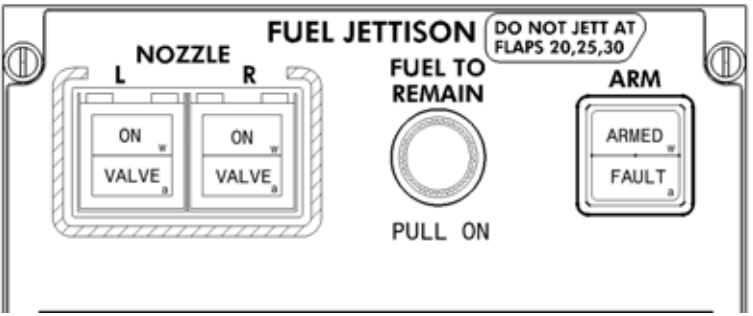
Background Information

Fuel Jettison flight testing showed fuel touching the airplane (impingement) when jettisoning fuel in certain airplane configurations. Fuel impingement is not in compliance with FAR 25.1001. Fuel impingement was seen only at flap settings of 20 and greater. To certify the current design, Boeing has elected to add a placard to the flight deck P-5 panel stating a restricted flap setting configuration during a fuel jettison event. This restriction is also documented in the 787 Airplane Flight Manual (AFM) limitations and crew checklist (QRH).

Development and testing of a replacement jettison nozzle is underway. The re-designed nozzle is expected to allow jettison at all flap settings and jettison attitudes.

Operating Instructions

Do not jettison fuel at Flaps 20, 25, or 30. This restriction is included in the “Fuel Jettison” Checklist as well as the placard installed on the Fuel Jettison Control Panel as shown below:



The Operations Manual has been updated to include the following note to “Fuel Jettison” Checklist. (See section 12 of 787 Flight Crew Ops Manual QRH):

Note: Do not jettison fuel at flaps 20, 25, or 30

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-6 as "In Effect" (IE).

This condition is temporary until the system is modified. This bulletin will be revised to include Boeing Service Bulletin information when available.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

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CS3 4748

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

787

Number: AIN-7

IssueDate: November 9, 2011

Airplane Effectivity: All Airplanes

Subject: Predictive Windshear Inhibit Changes During Takeoff

Reason: To inform flight crews of a change to the inhibits for Predictive Windshear due to incorrect software implementation.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

Predictive Windshear (PWS) Caution alerts are normally inhibited at altitudes below 400 feet AGL radio altitude and speeds greater than 80 knots, regardless of gear lever position.

However, due to incorrect software implementation, the PWS Caution alerts are NOT inhibited at altitudes below 400 feet AGL radio altitude and speeds greater than 80 knots, when the gear lever is selected to the UP position.

Operating Instructions

Weather Radar's Windshear mode continues to operate normally, as do windshear Warning alerts. Until the software is revised, caution level alerts for PWS, such as "MONITOR RADAR DISPLAY" aural alert and PWS display on ND, will not be inhibited and are enabled when gear lever is selected to the UP position below 400 feet AGL radio altitude and speeds greater than 80 knots.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-7 as "In Effect" (IE).

This issue is temporary until a software revision is made. This bulletin remains in effect until further notice.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

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Fax:	(206) 662-4743

CS3 4749

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-9 R1

IssueDate: April 23, 2012

Airplane Effectivity: All Airplanes

Subject: Loss of Toilet Flushing when Cabin Utility Bus is Turned Off

Reason: To inform flight crews that the toilet flushing function will be shutoff when the Cabin Utility Switch is turned off.

Added Boeing Service Bulletin number to Administration Information.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

The lavatory vacuum pump and lavatory water pump used to flush the airplane's toilets are powered by the Cabin Utility Bus. The Cabin Utility Bus is turned OFF in the PACK L+R, annunciated and unannunciated Cabin Temperature checklists to reduce the cabin heat. However, there is an unintended consequence of turning off the Cabin Utility Bus. The toilets in the lavatories will not flush.

Operating Instructions

Turn ON the Cabin Utility Bus briefly to allow flushing of the toilets. After the toilets are flushed, turn OFF the Cabin Utility bus. This action may need to be repeated until after the airplane lands and maintenance is performed. Do not cycle the Cabin Utility switch after it has been turned Off in the Smoke, Fire or Fumes checklist. This prevents a potential ignition source.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-9 R1 as "In Effect" (IE).

This condition is temporary until the software is modified. This bulletin will be cancelled after Boeing is notified that all affected airplanes have been modified by Boeing Service Bulletin B787-81205-SB240002.

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Telephone:	(206) 662-4000
Fax:	(206) 662-4743

CS3 4751

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-10 R1

IssueDate: May 8, 2012

Airplane Effectivity: All Airplanes

Subject: Weather Radar and Transponder Settings on the TCP

Reason: To inform flight crews that the settings on the Tuning and Control Panel (TCP) can disagree with the weather radar and transponder indications on the ND.

Revised Background Information and Operating Instructions to reflect that transponder settings, in addition to the weather radar settings, are affected.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

The weather radar (WXR) settings shown on the tuning and control panel (TCP) for tilt, gain, or mode, can disagree with the actual WXR settings. Actual WXR settings are always indicated correctly on the navigation display (ND). This situation can occur on any TCP when the WXR tilt, gain or mode settings were manually selected on the previous flight and the manual selections remained at the end of the flight. It can also occur on the center TCP in flight when using the center TCP to select weather radar settings.

Also, the transponder settings shown on the TCP for TCAS modes ABOVE, NORM, BELOW, and TCAS ALT (ABS/REL selection) can disagree with the actual TCAS settings. Actual TCAS settings are always indicated correctly on the ND. This situation can occur on any TCP when the TCAS modes ABOVE, NORM, BELOW, and TCAS ALT (ABS/REL selection) were manually selected on the previous flight and the manual selections remained at the end of the flight. It can also occur on the center TCP in flight when using the center TCP to select TCAS settings.

Operating Instructions

WXR and TCAS selections made on the TCPs should be verified on the ND. If the setting shown on the TCP disagrees with the actual setting shown on the ND, the flight crew should make an additional change to the affected setting on the TCP to force the TCP to synchronize correctly.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-10 R1 as "In Effect" (IE).

This condition is temporary until the software is modified. This bulletin remains in effect until further notice.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

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Commercial Aviation Services
Attention: 787 Manager, Flight Technical Data
P.O. Box 3707, M/C 20-89
Seattle, Washington 98124-2207 USA

Email: flighttraining@boeing.com
Telephone: (206) 662-4000
Fax: (206) 662-4743

CS3 4752

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-11 R2

IssueDate: August 31, 2012

Airplane Effectivity: VT-AND, VT-ANH - VT-ANN

Subject: Anomalous TAT Probe Logic Affecting Automatic Ice Detection System

Reason: To inform flight crews that the automatic engine and wing anti-ice system may not operate in icing conditions and that manual operation of the system is required.

Added Boeing Service Bulletin number.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

The automatic ice detection system logic activates engine and wing anti-ice when moisture is detected and TAT is 10°C or less. Normally, the two engine TAT probes and the airplane TAT probe are combined to provide a voted TAT solution.

A logic anomaly between engine and airplane TAT probes can affect operation of the automatic ice detection system. In the remote case that two of the TAT probes provide erroneous data, indicated TAT may be higher or lower than actual TAT by up to 10°C. For example, an actual TAT of 5°C might indicate up to 15°C on EICAS. As a result, manual operation of engine and wing anti-ice is required.

Operating Instructions

Ground Operation and Takeoff

Operate anti-ice per normal and supplementary procedures. This anomaly does not affect TAT indications on the ground.

Initial Climb

When TAT is 20°C or less and visible moisture is present, engine and wing anti-ice must be ON. If performance permits, selecting engine and wing anti-ice ON may be delayed to 1500 feet AGL during climb, but no later than 2500 feet AGL.

Note: This procedure assumes that AFM performance data using anti-ice OFF shows that the airplane will achieve flaps-up, final climb speed and clear all obstacles at a height of 1500 feet AGL or less.

In-Flight

When TAT is 20°C or less and greater than 10°C and visible moisture is present, engine and wing anti-ice must be ON. It is acceptable to operate engine and wing anti-ice in AUTO for all other TAT conditions.

WARNING: Do not rely on airframe visual icing cues before turning ON engine and wing anti-ice. Use the temperature and visible moisture criteria because late activation of engine anti-ice may allow excessive ingestion of ice and result in engine damage or failure.

When engine and wing anti-ice are needed:

CAUTION: Do not use engine or wing anti-ice when TAT is above 20°C.

ENGINE ANTI-ICE selectors (both).....ON.....PM

WING ANTI-ICE selector.....ON.....PM

Note: When the anti-ice system is ON and the indicated TAT is above 10°C the EICAS advisory message ANTI-ICE ON will show. Disregard this message and override the ANTI-ICE ON checklist in the electronic checklist (ECL).

When engine and wing anti-ice are no longer needed:

ENGINE ANTI-ICE selectors (both).....AUTO.....PM

WING ANTI-ICE selector.....AUTO.....PM

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-11 R2 as "In Effect" (IE).

This issue is temporary until a software revision is made. This bulletin will be cancelled after Boeing is notified that all affected airplanes have been modified by Boeing Service Bulletin B787-81205-SB300005-00.

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CS3 4761

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Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-13 R1

IssueDate: August 17, 2012

Airplane Effectivity: VT-AND - VT-ANM

Subject: Nuisance Window Heat Indications

Reason: To inform flight crews that the window heat INOP lights and EICAS advisory message WINDOW HEAT may show briefly without a real window heat failure present.

Added Boeing Service Bulletin number.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

Normal window heat operation regulates temperature by automatically cycling power on and off. The fault monitoring for the window heat occasionally detects the power off state as a failure and will momentarily illuminate the INOP light on the overhead panel and display the respective EICAS advisory message WINDOW HEAT. These transient indications are not indications of an actual window heat failure. EICAS status messages for the respective window may also be set and be latched in memory and can only be cleared by maintenance action.

Operating Instructions

If the EICAS Advisory message WINDOW HEAT and associated INOP light shows for less than 10 seconds, no crew action is necessary.

If the EICAS Advisory message WINDOW HEAT and associated INOP light shows for more than 10 seconds, perform the associated non-normal procedure.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-13 R1 as "In Effect" (IE).

This condition is temporary until the software is modified. This bulletin will be cancelled after Boeing is notified that all affected airplanes have been modified by Boeing Service Bulletin B787-81205-SB240002.

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Fax:	(206) 662-4743

CS3 4763

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-15

IssueDate: November 9, 2011

Airplane Effectivity: VT-ANC - VT-ANJ

Subject: Nuisance Operation of the Parking Brake Lever

Reason: To inform flight crews that the parking brakes may not set or release when commanded.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

There may be difficulties in setting and releasing the parking brake lever due to frictional interferences and switches operating near the limits of their tolerance band within the parking brake module.

Operating Instructions

If the parking brake module does not operate as expected while attempting to set or release the parking brake lever, move the parking brake lever from side to side and up and down while simultaneously depressing both brake pedals. Repeat this process as necessary until the parking brake lever sets or releases.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-15 as "In Effect" (IE).

This condition is temporary until the system is modified. This bulletin remains in effect until further notice.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

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CS3 4776

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-20

IssueDate: November 9, 2011

Airplane Effectivity: All Airplanes

Subject: EICAS Messages That May Show After Short Term Operation On Standby RAT Electrical Power In-flight.

Reason: Critical Systems Will Not Restore After Normal Electrical Power Is Restored.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

Following restoration of normal electrical power after short term operation on standby RAT electrical power in-flight, critical systems such as CAC's and TAT will not restore. Autopilot will have limited functions.

Operating Instructions

The following EICAS messages and Flight Deck Effects may be present:

- FUEL PUMP CENTER R
- AUTOTHROTTLE DISC
- AUTOPILOT
- PACK L+R or PACK L or PACK R
- Loss of TAT data
  - ENG EEC MODE R
  - ICE DETECTORS
  - TCAS RA CAPTAIN
  - TCAS RA F/O
  - THRUST ASYM PROT
  - WEATHER RADAR SYS
  - WINDSHEAR SYS
  - LNAV is inoperative
  - VNAV is inoperative
  - FMC Predictions inoperative
  - Autothrottle is inoperative
  - FMC thrust limits are inoperative

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-20 as "In Effect" (IE).

This condition is temporary until the software is modified. This bulletin remains in effect until further notice.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

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CS3 4846

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-28

IssueDate: February 3, 2012

Airplane Effectivity: All Airplanes

Subject: FMC Flight Plan Loss

Reason: To inform crews that FMC route may be lost if multiple simultaneous modifications are executed.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

An anomaly in the FMC may result in empty RTE and LEGS pages when making modifications to the flight plan. If multiple changes are made simultaneously to the FMC flight plan, or certain combinations of FMC and MCP changes are made simultaneously, the FMC may fail to complete these computations. The resulting modified RTE and LEGS pages will be blank. If the modification is executed the active RTE will be lost. However, if the modification is erased the previous route and waypoints will be restored.

Operating Instructions

When making flight plan modifications to the FMC, crews should verify the entries prior to executing the modification. If a modified RTE or LEGS page shows blank, crews should erase the modification and re-enter the intended flight plan modification. If the flight plan modification with empty RTE and LEGS pages is executed, the entire flight plan will need to be re-entered.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-28 as "In Effect" (IE).

This bulletin will be cancelled with a future software update. This bulletin remains in effect until further notice.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

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Telephone:	(206) 662-4000
Fax:	(206) 662-4743

CS3 4976

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-29 R1

IssueDate: August 31, 2012

Airplane Effectivity: VT-AND, VT-ANH - VT-ANM

Subject: Erroneous STAB GREENBAND Message

Reason: To inform crews that, with the airplane loaded in certain areas of the gross weight and center of gravity envelope, an erroneous STAB GREENBAND message may show.

Added Boeing Service Bulletin number.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

The STAB GREENBAND message provides a cross-check of airplane gross weight (GW) and center of gravity (CG) to alert flight crews that data might have been incorrectly entered in the FMC or that the airplane might not be loaded correctly. After the crew confirms that entries are correct and the airplane is loaded correctly, the flight may proceed normally even if the STAB GREENBAND message stays shown.

An anomaly in the stabilizer greenband monitor and alert system may result in an erroneous STAB GREENBAND message. In some regions of the GW and CG envelope, the greenband validation check has a very small margin against unintended or nuisance alerts. When the airplane is loaded in these regions the greenband monitor and alert system calculation may disagree with the greenband computed from FMC entries resulting in an erroneous STAB GREENBAND message.

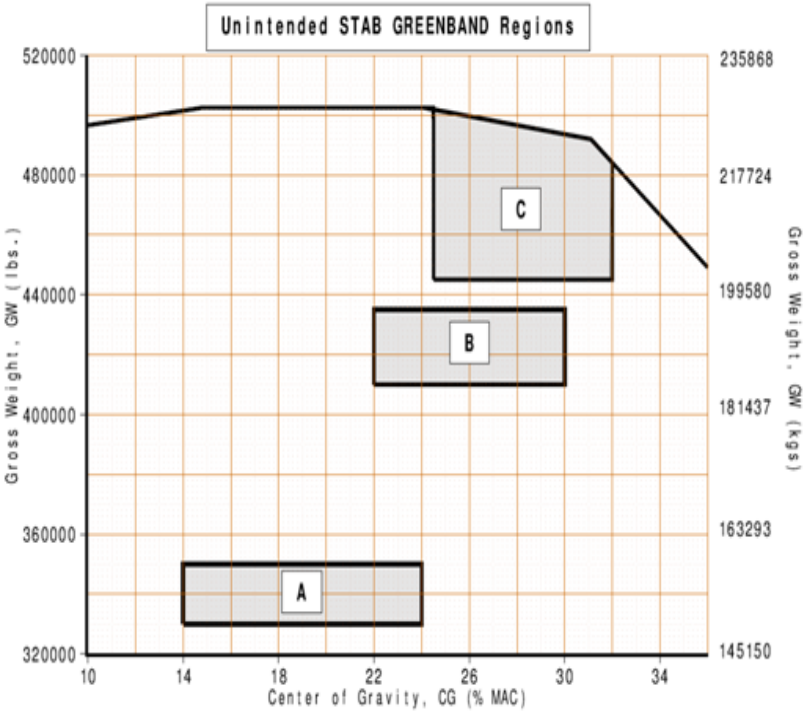
Operating Instructions

If a STAB GREENBAND message shows after loading is complete, crews should accomplish the STAB GREENBAND non-normal checklist.

When verifying airplane loading an additional check may be accomplished to verify that the STAB GREENBAND message is a nuisance. Use the chart below to identify regions of the GW and CG envelope most susceptible to this nuisance message. If the airplane GW and CG are in region A, B, or C, the flight crew may confirm the nuisance by temporarily entering a CG value 3% MAC forward (lower value) than the value on the load manifest. This temporary entry causes the greenband trim range to be recalculated. If the message blanks after approximately 5 seconds, the nuisance condition is verified. (If the message stays shown after 5 seconds, the nuisance condition is NOT verified.) The flight crew must then re-enter the correct CG value from the load manifest and check that the stabilizer is set to the correct position. The message is likely to show again approximately 30 seconds after the correct CG is re-entered. If the STABILIZER GREENBAND checklist is displayed again, it should be overridden.

In the remote case that the STAB GREENBAND message is accurate and a real mistrim exists in one of these regions, takeoff can still be safely accomplished. This amount of mistrim has been demonstrated during flight test and can be flown safely using normal pilot technique.

Area	CG Range (% MAC)	GW Range (lbs)	GW Range (kgs)
A	14 - 24	330000 - 350000	149685 - 158757
B	22 - 30	410000 - 435000	185973 - 197313
C	24.5 - 32	445000 - MTW	201849 - MTW



Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-29 R1 as "In Effect" (IE).

This issue is temporary until a software revision is made. This bulletin will be cancelled after Boeing is notified that all affected airplanes have been modified by Boeing Service Bulletin B787-81205-SB310003-001.

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Fax:	(206) 662-4743

CS3 4992

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-30

IssueDate: March 5, 2012

Airplane Effectivity: All Airplanes

Subject: APU Bowed Rotor Hung Start

Reason: To inform flight crews of a change to the APU shutdown procedure on the ground to improve APU thermal conditions.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

On the ground, when the APU inlet door is closed after APU shutdown, hot air can collect in the APU. The trapped hot air can cause a rotor imbalance or bowed rotor. In rare cases, a bowed rotor can cause rotor rub that might lead to a hung start and APU damage. In flight, there is adequate airflow through the APU and APU compartment to prevent a bowed rotor hung start.

To prevent a bowed rotor hung start on the ground, the APU inlet door should be kept open for at least 40 minutes after APU shutdown. This prevents hot air from being trapped in the APU and allows the APU to be started at any time with no risk of a bowed rotor hung start.

The APU inlet door can be opened without starting the APU by setting the APU selector to the ON position without selecting START.

Operating Instructions

APU shutdown on the ground:

APU selector ..... OFF

Wait approximately 3 minutes.

This allows the APU cool down cycle to complete.

APU selector ..... ON

This opens the APU door. Do not select START.

Wait 40 minutes or longer.

APU selector ..... OFF

Note: If takeoff occurs during the 40 minute wait, the APU selector can be set to OFF at a convenient time after takeoff (when workload is low) with no time restriction.

If the APU is needed during the 40 minute wait, it is acceptable to start the APU with no time restriction.

This procedure is not needed for APU shutdown in flight.

Closing the APU door (setting the APU selector to OFF) may be assigned to Maintenance if the flight crew leaves the airplane.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-30 as "In Effect" (IE).

This bulletin will be cancelled by a future Boeing Service Bulletin. This bulletin remains in effect until further notice.

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

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CS3 5001

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-31 R1

IssueDate: August 31, 2012

Airplane Effectivity: VT-AND, VT-ANH - VT-ANM

Subject: Erroneous Relative Bearing for TCAS, PWS, and WXR.

Reason: Advises crews of Traffic Alert and Collision Avoidance System (TCAS), Predictive Windshear (PWS), and Weather Radar (WXR) data being shown with heading-up orientation on track-up displays.

Added Boeing Service Bulletin number.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

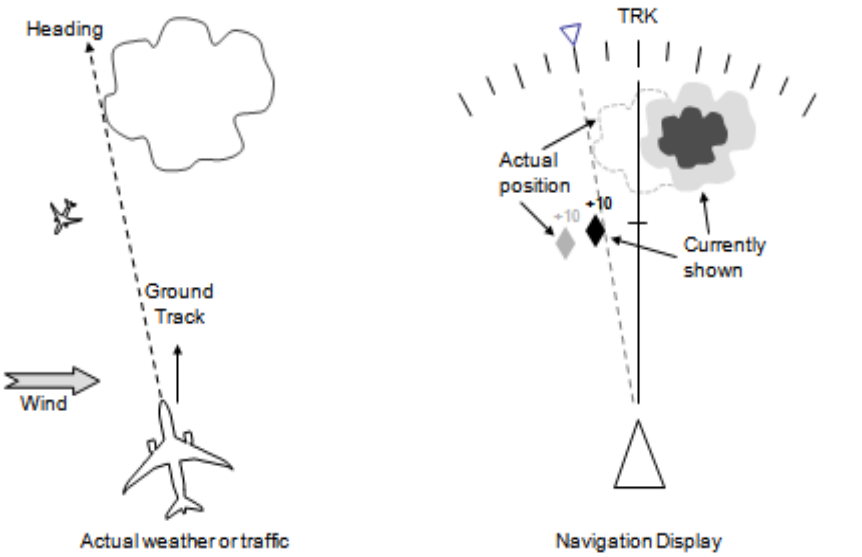
THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

A software anomaly has resulted in TCAS, PWS, and WXR data showing with an incorrect heading-up orientation on the ND map and mini-map (track-up displays). TCAS, PWS, and WXR data that should show relative to the aircraft heading are actually shown relative to the track line. As a result, TCAS, PWS, and WXR data are rotated in the downwind direction with the angular error (angle of rotation) equal to the drift angle.

All other information including terrain, navigation data, and VOR pointers are shown with the correct track-up orientation.

This error only affects the relative bearing of the information shown and does not affect TCAS or PWS alerting functions.



Operating Instructions

Traffic Alert and Collision Avoidance System

TCAS TA and RA messages and annunciations are correct and should be followed. When visually scanning for TCAS traffic that is shown relative to the track line the crew should scan in the same direction relative to the aircraft nose.

While the angular error stays constant (equal to the drift angle), the magnitude of the cross track error will decrease as the range to the traffic decreases. The cross track error will be zero when the aircraft is abeam the traffic.

Predictive Windshear

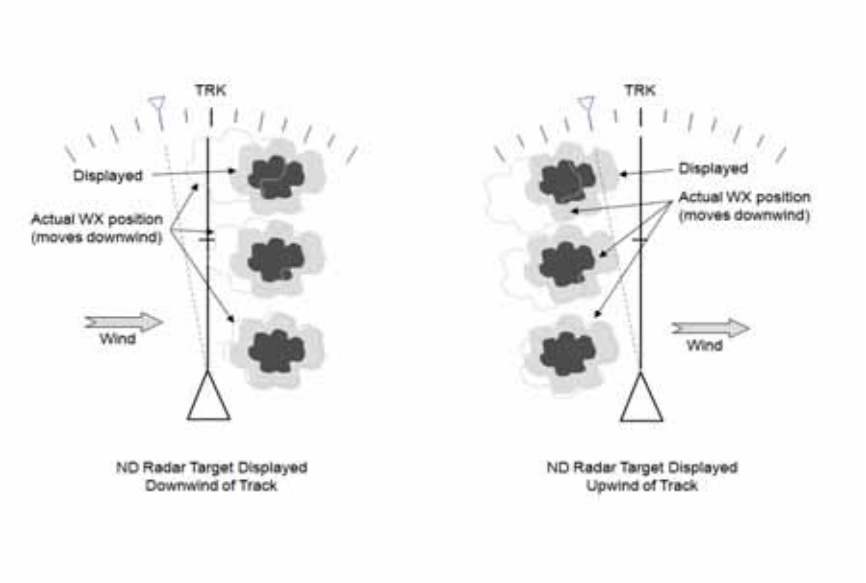
PWS messages and annunciations are correct and should be followed.

Weather Radar

Flight crews should follow normal weather avoidance procedures:

- Crews should plan the aircraft track to clear weather with the appropriate margins.
- In Visual Meteorological Conditions (VMC), the crew should avoid hazardous weather visually.
- In Instrument Meteorological Conditions (IMC), the crew should assess the weather radar display as the airplane approaches potentially hazardous weather and adjust the aircraft track to clear the weather as shown with the appropriate margins.

Weather shown downwind of the track line will continue to move away from the track line. For weather shown upwind of the track line, the aircraft track will be further from the weather than shown. While the angular error stays constant (equal to the drift angle), the magnitude of the cross track error will decrease as the range to the weather decreases and will be zero when the aircraft is abeam the weather target.



Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-31 R1 as "In Effect" (IE).

This issue is temporary until a software revision is made. This bulletin will be cancelled after Boeing is notified that all affected airplanes have been modified by Boeing Service Bulletin B787-81205-SB310003-001.

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Telephone:	(206) 662-4000
Fax:	(206) 662-4743

CS3 5021

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-32 R1

IssueDate: August 17, 2012

Airplane Effectivity: VT-AND - VT-ANM

Subject: Electrical Anomaly During Simultaneous Engine Start

Reason: To advise crews to delay the start of the second engine.

Added Boeing Service Bulletin number.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

If both engines are started at the same time it is possible that the starter/generator on the left and right sides may come on line at the same time. This may cause an incorrect electrical system configuration that results in an unpowered backup bus. As a result MAIN BATTERY LOW, NO AUTOLAND, HEAT PITOT C, and other EICAS messages may be displayed after engine start.

Operating Instructions

When doing a simultaneous engine start on the ground, delay the start of the second engine by a minimum of 5 seconds.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-32 R1 as "In Effect" (IE).

This condition is temporary until the software is modified. This bulletin will be cancelled after Boeing is notified that all affected airplanes have been modified by Boeing Service Bulletin B787-81205-SB240002.

This condition is temporary until the system is modified. This bulletin remains in effect until further notice.

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CS3 5034

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-34 R1

IssueDate: August 17, 2012

Airplane Effectivity: All Airplanes

Subject: Air Cycle Machine (ACM) Freezing

Reason: Ice formation in one or both pack air cycle machines may occur in flight.

Revised Operating Instructions to direct crews to use the QRH/ECL and removed checklist from bulletin.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

Ice can form in one or both pack ACMs in flight after the air conditioning packs are run for an extended time on the ground in hot and humid conditions. Water in the packs may freeze during initial climb. This can cause a PACK MODE message (ACM inoperative, pack operating in heat exchanger-only mode) or a PACK message (pack inoperative) to show. If both packs are in one of these conditions, trim air is lost, and flight deck and cabin temperatures may become too cold.

Descent to an altitude where the Total Air Temperatures (TAT) is above freezing (approximately 20,000 feet in a warm air mass) allows the ice to melt before cabin temperatures become too cold. Waiting 10 minutes at the lower altitude ensures that the water in the ACM evaporates.

Operating Instructions

If PACK or PACK MODE message shows for one pack, do the respective ECL checklist. If the PACK L+R message shows, do the respective ECL checklist.

If one of the following message combinations shows, do the Dual Pack Freezing unannunciated QRH/ECL checklist:

- PACK MODE L and PACK MODE R
- PACK L and PACK MODE R
- PACK R and PACK MODE L

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-34 R1 as "In Effect" (IE).

This condition is temporary until the software is modified. This bulletin remains in effect until further notice.

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Fax: (206) 662-4743

CS3 5096

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

787

Number: AIN-35 R2

IssueDate: January 3, 2013

Airplane Effectivity: Applies To Airplanes with Primary Flight Control Function - Quick Turn 3 Software Version Installed

Subject: Potential Roll and Pitch Capture Logic Error

Reason: Inform flight crews of the potential for incorrect armed roll or pitch FMA displays.

Added Boeing Service Letter reference number.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

An update to the Primary Flight Controls Function - Quick Turn 3 software contains an error in the arming and capture logic. If the crew arms a roll or pitch mode by pushing the LOC/FAC, LNAV, VNAV, or APP switch before capturing a previously armed mode, the anomaly may occur.

This anomaly may cause the Flight Mode Annunciation (FMA) on the Captain's side (PFD and HUD) or on the First Officer's side (PFD and HUD), or on both sides, to not show the armed roll or pitch modes. This anomaly may also prevent capture of the armed roll or pitch modes if it occurs. There are no EICAS messages or other fault indications for this error.

Operating Instructions

Crews should ensure that any armed roll or pitch mode (LOC/FAC, LNAV, VNAV, or APP) is either captured (active mode) or disarmed before arming a subsequent roll or pitch mode.

Administrative Information

The Flight Crew Operations Manual Bulletin Record is amended to show bulletin AIN-35 R2 as "In Effect" (IE).

This issue is temporary until a software revision is made. This bulletin will be cancelled after Boeing is notified that all affected airplanes have been modified by Boeing Service Bulletin B787-81205-SB270004-00. (Ref: Boeing Service Letter 787-SL-27-008)

Please send all correspondence regarding Flight Crew Operations Manual Bulletins status to one of the following:

Mailing Address:	Boeing Commercial Airplanes Commercial Aviation Services Attention: 787 Manager, Flight Technical Data P.O. Box 3707, M/C 20-89 Seattle, Washington 98124-2207 USA
Email:	flighttraining@boeing.com
Telephone:	(206) 662-4000
Fax:	(206) 662-4743

CS3 5152

Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

787

Number: AIN-36

IssueDate: January 3, 2013

Airplane Effectivity: All Airplanes

Subject: Abeam Points May Cause Route Deactivation

Reason: To inform flight crews of possible deactivation or loss of the FMC route if the route includes abeam points (ABEAM PTS).

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

An FMC software anomaly may, in rare cases, cause the active route to become inactive or prevent the crew from executing a route modification. The anomaly only occurs when the route includes abeam points that were generated during a direct to modification and when there are route legs that have a course of nearly 090° or 270°.

If the anomaly occurs, selection of the execute (EXEC) key will not activate the modified (MOD) route. Attempts to execute this modified route can result in the route becoming deactivated. Attempts to re-activate and execute the deactivated route can result in the failure repeating. If the deactivated route is activated and executed multiple times, the route will be cleared.

This anomaly can also occur when sequencing an abeam point.

This anomaly can be avoided by not selecting ABEAM PTS. If ABEAM PTS are used and a route becomes deactivated after a modification is executed or after a waypoint sequences, all abeam points should be deleted before executing the route a second time.

Abeam points that are created with the FIX page ABEAM function, are not affected by this anomaly.

Operating Instructions

If abeam points are not needed when performing a direct to a waypoint:

- Do not select ABEAM PTS on line 4R.

If abeam points are needed:

- If the EXEC key does not accept a route MOD or the route becomes inactive with abeam points in the flight plan:
  - Select ERASE, if applicable
  - Delete (DEL) all abeam points in the route, if applicable
  - Close route discontinuities in the route, if applicable
  - Modify the route without selecting ABEAM PTS, if applicable
  - Select ACTIVATE as required, select EXEC

Administrative Information

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Flight Crew Operations Manual Bulletin
for
Air India Limited

The Boeing Company
Seattle, Washington 98124-2207

Number: AIN-37

IssueDate: January 23, 2013

Airplane Effectivity: All Airplanes

Subject: Takeoff Data Uplink Anomalies When Runway Intersections Are Used

Reason: The FMC can use the wrong takeoff data when an ACARS takeoff data uplink includes multiple takeoff points for the same runway. The FMC can also incorrectly retain old runway position (POS) information on the TAKEOFF REF page 1/2, line 4L.

Information in this bulletin is recommended by The Boeing Company, but may not be FAA approved at the time of writing. In the event of conflict with the FAA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

Note: An operator is NOT affected by the anomalies in this bulletin if they obtain takeoff data by these methods:

- takeoff data calculated by the Onboard Performance Tool (OPT) in the Electronic Flight Bag (EFB), or
- takeoff data manually input into the THRUST LIM and TAKEOFF REF pages

The FMC can receive a takeoff data uplink that includes up to six different takeoff points (different runways or intersection takeoff points) via an ACARS datalink. If a takeoff data uplink contains multiple takeoff points, and two or more of those takeoff points are for the same runway, incorrect takeoff thrust and V-speeds can be loaded into the FMC. For example, if a takeoff uplink contains takeoff points for runway 18 and runway 18/A2, the incorrect takeoff thrust and V-speeds can be loaded into the FMC. If a takeoff data uplink does not include multiple takeoff points for the same runway, this anomaly will not occur.

Also, when a new takeoff data uplink is loaded into the FMC for the same runway as the previous takeoff data uplink, the previous intersection information can be incorrectly retained on the RUNWAY POS line (4L) of the TAKEOFF REF 1/2 page. (The correct takeoff thrust and V-speeds will be loaded, because the takeoff data for the same runway came from a new uplink.) When the crew manually corrects the intersection information on line 4L, all takeoff data will remain correct.

Operating Instructions

When requesting takeoff data via ACARS, flight crews should not request more than one takeoff point for each runway. For example, do not include runway 18 and 18/A2 in the same request. If a different takeoff point on the same runway (such as an intersection) is needed, request it in a separate uplink.

Similarly, ground providers of takeoff data should not include more than one takeoff point for each runway in a single takeoff data uplink.

Following existing Limitations and Normal Procedures, flight crews should verify takeoff data on the FMC THRUST LIM and TAKEOFF REF pages. Any time new takeoff data is sent to the FMC, verify and if needed, correct the RUNWAY POS line (4L) of the TAKEOFF REF page.

Ground providers of takeoff data should ensure that either intersection data or a position shift value is sent with every runway, including for a full length takeoff (0 m/ft position shift). This will ensure that the intersection information is always correctly displayed for new uplinks.

Administrative Information

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Telephone: (206) 662-4000
Fax: (206) 662-4743

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