

OPERATIONAL FSO

FSO 186/14

Issue Date: 10 December 2014	Author: Fleet Manager A320/A321
Cancel(s): N/A	Checked By: Manager Flying Operations Strategy and Development

Manual(s) Affected: OM4 FCOM

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OEB 48 (Issue 1) Abnormal V Alpha Prot – effective 10 December 2014

Introduction

An occurrence was reported by another operator where an Airbus A321 aircraft encountered a blockage of two Angle Of Attack (AOA) probes during climb, leading to activation of the Alpha Protection (Alpha Prot) while the Mach number increased. The flight crew managed to regain full control and the flight landed uneventfully.

When Alpha Prot is activated due to blocked AOA probes, the flight control laws order a continuous nose down pitch rate that, in a worst case scenario, cannot be stopped with backward sidestick inputs, even in the full backward position. If the Mach number increases during a nose down order, the AOA value of the Alpha Prot will continue to decrease. As a result, the flight control laws will continue to order a nose down pitch rate, even if the speed is above minimum selectable speed, known as VLS.

This condition, if not corrected, could result in loss of control of the aeroplane.

To address this unsafe condition, Airbus have issued Red OEB 48 ABNORMAL V ALPHA PROT.

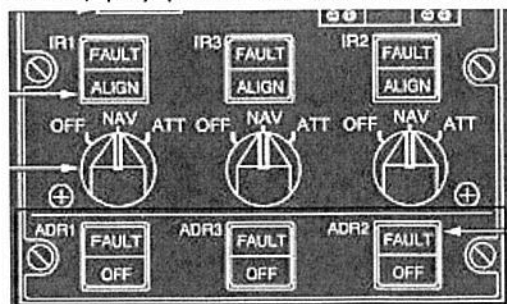
Note that this FSO is applicable to all Jetstar A320 and A321 aircraft.

Procedure


Until incorporated in to OM4 FCOM, pilots must familiarise themselves with the below OEB and apply the procedures specified accordingly.

Caution

When applying this OEB, pay particular attention in turning off the 'ADR' and not an 'IR'.



Authorised by
 Captain Mark Rindfleish
 Chief Pilot

	OPERATIONS ENGINEERING BULLETINS ABNORMAL V ALPHA PROT
A318/A319/A320/A321 FLIGHT CREW OPERATING MANUAL	

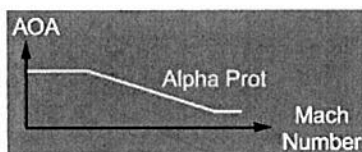
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ABNORMAL V ALPHA PROT

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EXPLANATION

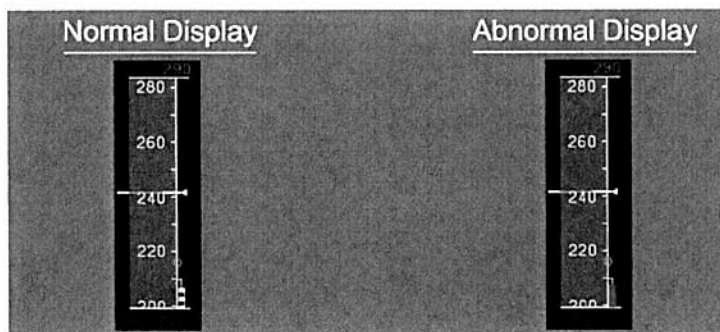
In normal law, if two or three AOA probes are blocked at the same angle value, an increase in the Mach number may result in the activation of the high Angle-Of-Attack protection (Alpha Prot). This is due to the fact that the AOA value of the Alpha Prot decreases as the Mach number increases. When the AOA value of the Alpha Prot decreases, the Alpha Prot strip on the PFD moves upward.



In the case of Alpha Prot undue activation due to blocked AOA probes, the flight control laws order a continuous nose down pitch rate that may not be stopped with backward sidestick inputs, even in the full backward position. If the Mach number increases during a nose down order, the AOA value of the Alpha Prot will continue to decrease. As a result, the flight controls laws will continue to order a nose down pitch rate, even if the speed is above VLS.

Two or three blocked AOA probes may induce the following visible effects in the cockpit:

- The Alpha Max strip (red) on the speed scale of the PFD may completely hide the Alpha Prot strip (black and amber) in a stabilized wings-level flight path (without an increase in load factor), or



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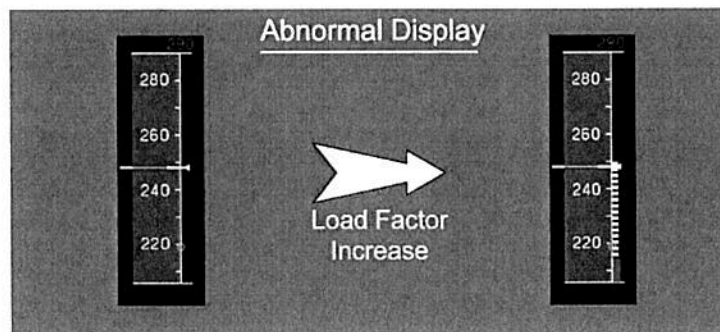
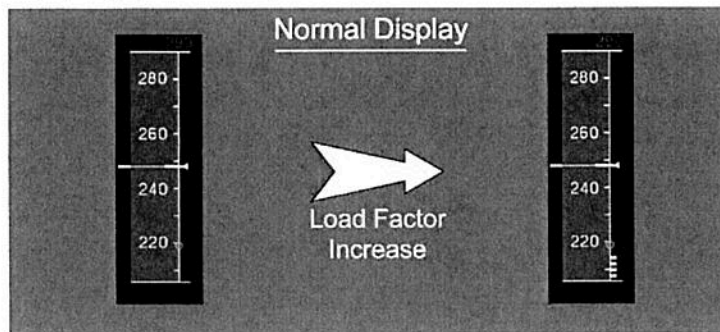
OPERATIONS ENGINEERING BULLETINS
 ABNORMAL V ALPHA PROT

A318/A319/A320/A321
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ABNORMAL V ALPHA PROT (Cont'd)

- The Alpha Prot strip (black and amber) may rapidly move by more than 30 kt during flight maneuvers (with an increase in load factor, for example turns or pitch variations), with the Auto Pilot (AP) engaged and the speed brakes in the retracted position.



Blocked AOA probes do not affect the current speed indication on the PFD.
 In addition, in OP CLB or CLB with blocked AOA probes, the pitch order of the flight guidance may be affected by the value of the blocked AOA probes. Therefore, the aircraft may not be able to accelerate in order to reach the target speed.

PROCEDURE

CAUTION Monitor the Alpha Prot strip and the Alpha max strip when they are visible.

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 AIRBUS <small>A318/A319/A320/A321 QUICK REFERENCE HANDBOOK</small>	OPERATIONS ENGINEERING BULLETINS	48.01A
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ABNORMAL V ALPHA PROT

ECAM ENTRY

None

PROCEDURE

CAUTION	Monitor the Alpha Prot strip and the Alpha max strip when they are visible.
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- AT ANY TIME**, with a speed above VLS, if the aircraft goes to a **CONTINUOUS NOSE DOWN PITCH RATE** that cannot be stopped with backward sidestick inputs, **IMMEDIATELY APPLY**:
 ONE ADR.....KEEP ON
 TWO ADRs..... OFF

- If the Alpha Max strip (red) completely hides the Alpha Prot strip (black and amber) in a stabilized wings-level flight path (without an increase in load factor)**:
 ONE ADR.....KEEP ON
 TWO ADRs.....OFF

CAUTION	RISK OF ERRONEOUS DISPLAY OF THE VSW STRIP (RED AND BLACK)
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FPV USE..... CONSIDER

- If the Alpha Prot strip (black and amber) rapidly moves by more than 30 kt during flight maneuvers (with an increase in load factor), with AP ON and speed brakes retracted**:
 ONE ADR.....KEEP ON
 TWO ADRs.....OFF

CAUTION	RISK OF ERRONEOUS DISPLAY OF THE VSW STRIP (RED AND BLACK)
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FPV USE..... CONSIDER

END OF OEB48

OEB48 Issue 1