



Abnormal V ALPHA PROT

Destinataires : Tous pilotes A320
Numéro de référence : PTMC-2014-0012

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Introduction

Le but de ce document est de vous informer sur la possible activation de la protection AOA : ALPHA PROT en NORMAL LAW suite à un blocage des sondes AOA.

Vous trouverez, ci-après, la description de l'événement récent d'une compagnie européenne, les explications ainsi que les recommandations opérationnelles données par AIRBUS au travers de l'OEB 48.

Cette procédure est déjà publiée dans les dossiers de vol (ACN : ABNORMAL V ALPHA PROT)

1. Description de l'événement

Pendant la montée, deux des trois sondes AOA sont restées bloquées à une valeur constante.

En virage en montée, une augmentation anormale du bandeau ALPHA PROT a conduit l'équipage à déconnecter l'AP.

La protection ALPHA PROT s'est alors activée et a entraîné un ordre à piquer.

Le passage en ALTERNATE LAW qui a stoppé l'activation de la protection ALPHA PROT.



2. Explications et recommandations opérationnelles

Ci-joint OEB 48 d'AIRBUS :

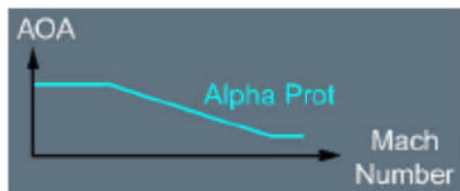


ABNORMAL V ALPHA PROT

Ident.: OEB-48-00016059.0001001 / 08 DEC 14

EXPLANATION

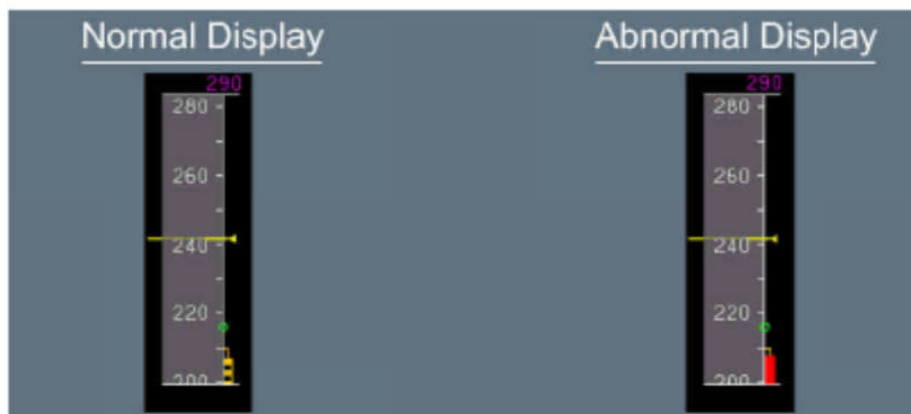
In normal law, if two or three AOA probes are blocked at the same angle value, an increase in the Mach number may result in the activation of the high Angle-Of-Attack protection (Alpha Prot). This is due to the fact that the AOA value of the Alpha Prot decreases as the Mach number increases. When the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

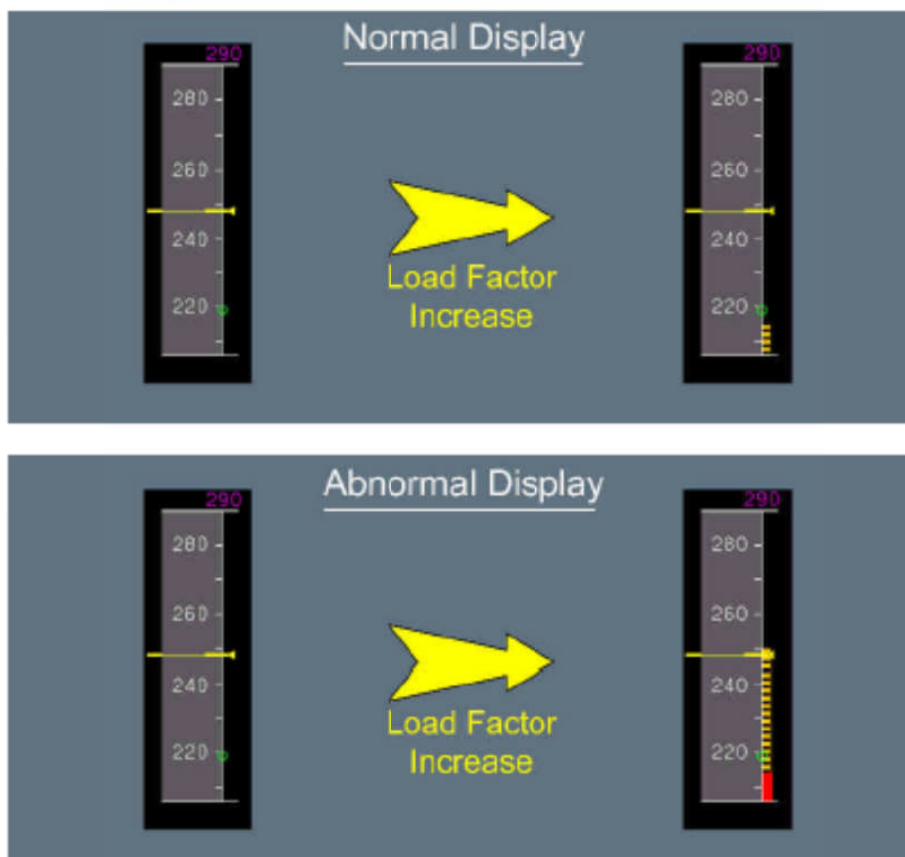
- The Alpha Max strip (red) on the speed scale of the PFD may completely hide the Alpha Prot strip (black and amber) in a stabilized wings-level flight path (without an increase in load factor), or



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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.

Continued on the following page



RED OEB - RED OEB - RED OEB - RED OEB - RED OEB - RED OEB

ABNORMAL V ALPHA PROT (Cont'd)

- **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) hides completely 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

*The AP, FDs and ATHR are lost for the remainder of the flight.**Switch two ADRs to OFF for the remainder of the flight in order to revert to alternate law and to prevent undue Alpha Prot activation.**In case of dispatch with one ADR inoperative, switch only one ADR to 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*The AP, FDs and ATHR are lost for the remainder of the flight.**Switch two ADRs to OFF for the remainder of the flight in order to revert to alternate law and to prevent undue Alpha Prot activation.**In case of dispatch with one ADR inoperative, switch only one ADR to OFF.*

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

CORRECTIVE ACTION

Investigations are on-going to define the terminating action of this OEB.

Continued on the following page



OPERATIONS ENGINEERING BULLETINS
ABNORMAL V ALPHA PROT

A318/A319/A320/A321
FLIGHT CREW
OPERATING MANUAL

RED OEB - RED OEB - RED OEB - RED OEB - RED OEB - RED OEB

ABNORMAL V ALPHA PROT (Cont'd)

END OF OEB48

