PŘÍKAZ K ZACHOVÁNÍ LETOVÉ ZPŮSOBILOSTI

CAA-T-AD-3-055/98

Datum vydání: 13. července 1998

Datum účinnosti: ihned po obdržení

GSAC TELEGRAPHIC AIRWORTHINESS DIRECTIVE

released by DIRECTION GENERALE DE L'AVIATION CIVILE

This text is not sent to foreign operators of aircraft non registered in France. It is up to the national authorities to forward it to them on receipt.

Translation of 'Consigne de Navigabilité'

ref.: T98-263-255(B)

In case of any difficulty, reference should be made to the French original issue.

AIRBUS A300, A310, A300-600 Series aircraft

Alternate Braking System Check

1. Applicability:

All Model A300, A300-600, A310 series aircraft, certificated in any category.

2. Reason:

This Telegraphic Airworthiness Directive is prompted by a recent event of an alternate braking system loss leading an A320 aircraft to go beyond the end of the runway at landing. This event was due to the freezing in flight of water ingressed in the bottom of the Braking Dual Distribution Valve (BDDV) preventing the alternate braking mode to operate at landing.

3. Mandatory action and compliance dates:

In order to detect a possible loss of the alternate braking system resulting from a possible in flight seizure of a BDDV due to water freezing, the functional test described in Paragraphe 4 of Airbus Industrie AOT 32-19 of Jul. 7th, 98 must be applied and the results must be reported to Airbus Industrie.

Attached publications:

Airbus Industrie

AOT 32-19 of July 7th,

FOT 999.0062 of July 7th, 1998 (for A300)

FOT 999.0061 of July 7th, 1998 (for A300-600 and A310)

copies may be obtained from Airbus Industrie,1 Rond Point Maurice Bellonte, 31707 BLAGNAC Cedex France

NOTE: Enquiries regarding the technical content of this AD should be made to:

DGAC France, SFACT/N.AT:

DGAC/SFACT/N.AT, 48 rue C Desmoulins, 92452 Issy les Moulineaux cedex,

Tel: (33) 1.41.09.45.09, Fax: (33) 1.41.09.42.20,(or 43.19)

or to

Airbus Industrie AI/EA:

1 Rond Point Maurice Bellonte, 31707 BLAGNAC Cedex France,

Tel: (33) 5.61.93.48.01, Fax:(33) 5.61.93.45.80.

Effective date: Upon receipt.

FLIGHT OPERATION TELEX - FLIGHT OPERATION TELEX

FLIGHT OPERATION TELEX - FLIGHT OPERATION TELEX

OUR REF: 999.0061/98 - MT/AB

DATE: 07-JULY-1998

SUBJECT: A310/A300-600 ALTERNATE BRAKING SYSTEM

1. REASON

THE PURPOSE OF THIS TELEX IS TO PROVIDE ALL A310/A300-600 OPERATORS WITH OPERATIONAL RECOMMENDATION FOLLOWING AN EVENT WHICH OCCURRED ON AN A320.

IT IS ASSOCIATED WITH AOT REF 32-19/07 JUL/98.

2. BACKGROUND

ON 21 MAY 1998, AN A320 DEPARTED THE RUNWAY JUST AFTER LANDING ON RUNWAY 24 AT IBIZA DUE TO THE LOSS OF NORMAL AND ALTERNATE BRAKING.

THE AIRCRAFT CAME TO A REST AFTER THE END OF THE RUNWAY WITH NOSE LANDING GEAR COLLAPSED.

ALL PASSENGERS AND CREW WERE EVACUATED SAFELY.

3. STATUS

THE FIRST RESULTS OF THE INVESTIGATION SHOW THAT THE LOSS OF AUTO BRAKE AND OF THE NORMAL BRAKING SYSTEM WAS DUE TO A DISAGREEMENT BETWEEN THE TWO BSCU CHANNELS FOLLOWING THE ACTION ON THE PUSHBUTTON TO SELECT THE AUTOBRAKE MODE.

THE NON AVAILABILITY OF THE ALTERNATE BRAKING SYSTEM WAS DUE TO THE FREEZING OF THE BRAKE DUAL DISTRIBUTION VALVE (BDDV) FURTHER TO WATER INGRESS IN THE VALVE COVER.

A BDDV OF SIMILAR DESIGN IS EMBODIED ON A310/A300-600 AIRCRAFT AND, AS A CONSEQUENCE OUT OF THESE FINDINGS, THIS FOT PROVIDES :

- RECOMMENDATIONS IN CASE OF LOSS OF BRAKING AT LANDING,

- THE PROCEDURE TO CHECK THE ALTERNATE BRAKING SYSTEM.

THE CAUSE OF THE LOSS OF "NORMAL BRAKING" WAS IDENTIFIED TO BE SPECIFIC TO THE A320 FAMILY. FOR FURTHER DETAILS, REFER TO THE AOT.

4. OPERATIONAL RECOMMENDATIONS

1/ IF DURING LANDING, NO BRAKING IS FELT :

- OVERRIDE THE AUTOBRAKE BY PRESSING THE BRAKE PEDALS

* IF NO BRAKING IS AVAILABLE :

- USE FULL REVERSE THRUST

- BRAKE PEDALS RELEASE

- BRK - A/SKID ALTN-OFF'

- BRAKE PEDALS PRESS

LIMIT BRAKE PRESSURE TO APPROXIMATELY 1000 PSI.

* IF STILL NO BRAKING :

- PARKING BRAKE USE

USE SHORT AND SUCCESSIVE PARKING BRAKE APPLICATIONS TO STOP THE AIRCRAFT. BRAKE ONSET ASYMMETRY MAY BE FELT AT EACH PARKING BRAKE APPLICATION. IF POSSIBLE DELAY THE USE OF PARKING BRAKE UNTIL LOW SPEED TO REDUCE THE RISK OF TYRE BURST AND LATERAL, CONTROL DIFFICULTIES.

2/ WHEN REQUIRED BY THE MAINTENANCE, CHECK THAT THE ALTERNATE BRAKING SYSTEM IS AVAILABLE (I.E. CHECK THAT THE BDDV IS NOT FROZEN AT THE END OF CRUISE) AS FOLLOWS :

- BRK - A/SKID ALTN-OFF

- BRAKE PEDALS PRESS

- BRAKE PRESSURE (ON BRAKE PRESS IND.) CHECK

* IF PRESSURE IS INDICATED :

THE ALTERNATE BRAKING SYSTEM WILL BE AVAILABLE AT LANDING.

* IF NO PRESSURE IS INDICATED :

THE ALTERNATE BRAKING SYSTEM MAY NOT BE AVAILABLE AT LANDING.

MAINTENANCE ACTION IS DUE BEFORE THE NEXT FLIGHT.

- BRAKE PEDALS RELEASE

- BRK - A/SKID NORM-ON

IT IS TO BE NOTED THAT ANY WATER POTENTIALLY CONTAINED IN THE BDDV COVER AND WHICH HAS FROZEN WILL MELT IF THE AIRCRAFT FLIES AT LOWER ALTITUDE WHERE OUTSIDE AIR TEMPERATURE IS ABOVE ZERO DEGREE CELSIUS FOR PROLONGED PERIODS OF TIME.

5. FOLLOW-UP

ALL A310/A300-600 OPERATORS WILL BE KEPT INFORMED ON THE PROGRESS OF THE PRESENT INVESTIGATION. A FURTHER UPDATE WILL BE PROVIDED AS SOON AS NEW INFORMATION IS AVAILABLE.

BEST REGARDS,

CHRISTIAN MONTEIL

DEPUTY VICE PRESIDENT

TRAINING AND FLIGHT OPERATIONS SUPPORT

SUBJECT: A300, A300-600, A310, A319, A320, A321, A330, A340 - ATA32 - ALTERNATE BRAKING SYSTEM CHECK

OUR REF: A300/A300-600/A310/A319/A320/A321/A330/A340

AOT 32-19/07 JUL 98

l. AIRCRAFT AFFECTED

ALL AIRBUS AIRCRAFT MODELS HAVING COMPLETED FIRST "A" CHECK SINCE DELIVERY.

2. REFERENCED DOCUMENTATION

REF 1: ILLUSTRATED PARTS CATALOG (IPC) 32-44-14 FOR A300, A300-600, A310 AIRBUS AIRCRAFT MODELS

REF 2: IPC 32-43-14 FOR A319, A320, A321, A330, A340 AIRBUS AIRCRAFT MODELS

REF 3: FLIGHT OPERATION TELEX (FOT) 999.0062 DATED 07 JUL 98 FOR A300 AIRCRAFT

REF 4: FOT 999.0061 DATED 07 JUL 98 FOR A300-600, A310 AIRCRAFT

REF 5: FOT 999.0059 DATED 07 JUL 98 FOR A319, A320, A321 AIRCRAFT

REF 6: FOT 999.0060 DATED 07 JUL 98 FOR A330, A340 AIRCRAFT

REF 7: MESSIER BUGATTI CMM 32-43-14 FOR A300 B2 AIRCRAFT, COVER ITEM 03-120

REF 8: MESSIER BUGATTI CMM 32-46-34 FOR A300-600, A310, A319, A320, A321 AIRCRAFT, COVER ITEM 03-110

REF 9: MESSIER BUGATTI CMM 32-43-16 FOR A330, A340 AIRCRAFT, COVER ITEM 03-090

REF 10: MESSIER BUGATTI CMM 32-44-14 FOR A300 B2, A300B2K, A300B4, A300-600, A310 AIRCRAFT, COVER ITEM 03-100

REF 11: TELEGRAPHIC AIRWORTHINESS DIRECTIVE T98-262-120 (B) FOR A319/A320/A321 AIRCRAFT

REF 12: TELEGRAPHIC AIRWORTHINESS DIRECTIVE T98-263-255 (B) FOR A300/A300-600/A310 AIRCRAFT

REF 13: TELEGRAPHIC AIRWORTHINESS DIRECTIVE T98-264-075 (B) FOR A330 AIRCRAFT

REF 14: TELEGRAPHIC AIRWORTHINESS DIRECTIVE T98-265-092 (B) FOR A340 AIRCRAFT

3.REASON

3.1. FACTS

ON 21 MAY 1998, AN A320 AIRCRAFT LEFT THE RUNWAY JUST AFTER LANDING ON RUNWAY 24 AT IBIZA.

THE AIRCRAFT CAME TO A REST BEYOND THE END OF THE RUNWAY WITH NOSE LANDING GEAR COLLAPSED.

ALL PASSENGERS AND GREW WERE EVACUATED SAFELY.

THE EVENT OCCURRED AT ABOUT 02H47 LOCAL TIME. WEATHER CONDITIONS WERE REPORTED TO BE GOOD, WITH NO SIGNIFICANT WIND.

THE INCIDENT IS BEING INVESTIGATED BY THE SPANISH ACCIDENT INVESTIGATION COMMISSION WITH THE ASSISTANCE OF THE UK AIR ACCIDENT INVESTIGATION BRANCH (AAIB) AND THE FRENCH BUREAU D'ENQUETE ACCIDENTS (BEA). AIRBUS INDUSTRIE IS PROVIDING THE AUTHORITIES WITH TECHNICAL ASSISTANCE.

THE EVENT RESULTED FROM ABSENCE OF BRAKING IN BOTH NORMAL AND ALTERNATE MODES.

3.1.I.NORMAL BRAKING SYSTEM

THE INVESTIGATIONS PERFORMED SO FAR REVEAL THAT THE NORMAL BRAKING SYSTEM WAS LOST AT TOUCHDOWN DUE TO AN UNEXPECTED BRAKE STEERING CONTROL UNIT (BSCU) PECULIARITY AT AUTOBRAKE SELECTION IN FLIGHT.

THIS IS SPECIFIC ONLY TO A319, A320, A321 BSCU AND IS PLANNED TO BE ADDRESSED IN THE NEXT BSCU STANDARD 8 TO BE CERTIFIED FIRST PART OF 1999.

TFU 324234043 IS PLANNED TO BE ISSUED IN JULY 1998 TO PROVIDE DETAILED INFORMATION ON THIS BSCU ISSUE FOR A319, A320, A321 OPERATORS.

PARAGRAPH 3 OF FOT REF 5 PROVIDES THE A319, A320 AND A321 OPERATORS WITH SPECIFIC OPERATIONAL RECOMMENDATIONS REGARDING AUTOBRAKE SELECTION AND

BSCU RESET IN THE EVENT OF BSCU FAULT ECAM WARNING AT AUTOBRAKE SELECTION.

NOTE: THE ABOVE EXPLAINED SCENARIO IS A VERY PARTICULAR ONE, BUT THERE CAN BE OTHER REASONS FOR LOSS OF THE NORMAL BRAKING SYSTEM ON ALL TYPES OF AIRBUS AIRCRAFT.

3.1.2.ALTERNATE BRAKING SYSTEM

INTENSIVE AIRCRAFT AND LABORATORY TESTS HAVE CLEARLY SHOWN THAT THE ABSENCE OF BRAKING ON THE ALTERNATE BRAKING SYSTEM RESULTED FROM A SEIZING OF THE ALTERNATE BRAKE DUAL DISTRIBUTION VALVE (BDDV), IPC REF 1 AND REF 2.

THE SEIZING OF THE BDDV WAS CAUSED BY THE FREEZING OF 33 CUBIC CENTIMETRES OF WATER FOUND IN THE BDDV COVER (REF 7, REF 8, REF 9 AND REF 10) LOCATED AT THE BOTTOM OF THE BDDV.

IT IS ASSUMED THAT THE FREEZING OCCURRED DURING THE CRUISE AND THAT THERE WAS NOT ENOUGH TIME BETWEEN THE END OF THE CRUISE AND THE LANDING FOR THE ICE TO MELT.

IT WAS ALSO FOUND THAT THE RUBBER SEALANT NORMALLY APPLIED TO THE JUNCTION AREA OF THE BDDV BODY AND THE COVER WAS MISSING.

A SIGNIFICANT CONCENTRATION OF DETERGENT WAS ALSO EVIDENT IN THE WATER REMOVED FROM THE BDDV COVER.

THE REASONS FOR THE MISSING SEAL AND FOR WATER INGRESS ARE NOT YET ESTABLISHED.

FURTHER ANALYSIS, TESTS AND INVESTIGATIONS ARE IN PROGRESS TO UNDERSTAND THE CAUSE OF THIS ANOMALY.

NOTE: THOUGH IT WAS NOT APPLIED DURING THE REPORTED EVENT, THE PARKING BRAKE WAS AVAILABLE.

3.2.CONSEQUENCES

THE NON COMPLIANCE WITH THE RECOMMENDATIONS OF THE PRESENT AOT CAN LEAD TO ABSENCE OF BRAKING ON THE ALTERNATE BRAKING SYSTEM.

THE ACTIONS CONTAINED IN THIS AOT WILL BE RENDERED MANDATORY BY THE ISSUE OF FRENCH DGAC "CONSIGNES DE NAVIGABILITE" (I.E. AIRWORTHINESS DIRECTIVES (AD) REF 11, REF 12, REF 13 AND REF 14), PLANNED FOR THE 8TH OF JULY 1998.

3.3.AIM

THE AIM OF THIS AOT IS TO ENSURE RELIABLE FUNCTIONING OF THE ALTERNATE BRAKING SYSTEM BY PREVENTING A DORMANT FAILURE ON THIS SYSTEM.

THIS WILL BE ACHIEVED BY A WEEKLY IN-FLIGHT CHECK OF THE SYSTEM.

THIS ACTION IS TEMPORARY PENDING APPLICATION OF CORRECTIVE ACTIONS PLANNED TO BE AVAILABLE BY THE END OF JULY 1998 FOR A TEMPORARY MEASURE, FOLLOWED BY A FINAL SOLUTION TO BE DEFINED IN THE COMING MONTHS.

4.SHORT TERM ACTION

4.l. PLANNING AND MANPOWER

4.l.1.DEADLINE

AIRBUS INDUSTRIE REQUIRES THAT THE FIRST APPLICATION OF THIS ALTERNATE BRAKING SYSTEM IN-FLIGHT CHECK IS COMPLETED WITHIN TEN DAYS FOLLOWING THE ISSUE DATE OF THIS AOT.

FOR THE NEWLY DELIVERED AIRCRAFT, THIS REQUIREMENT IS APPLICABLE WITHIN THE 10 DAYS FOLLOWING THEIR FIRST "A" CHECK.

4.1.2.INTERVAL

THIS AOT HAS TO BE PERFORMED ON A WEEKLY BASIS (NOT TO EXCEED 9 CALENDAR DAYS) PENDING APPLICATION OF THE TEMPORARY MEASURE PLANNED TO BE MADE AVAILABLE BY THE END OF JULY 1998.

4.1.3.MANPOWER

THIS AOT DOES NOT REQUIRE A MAINTENANCE TASK.

AS DESCRIBED IN PARAGRAPH 4.2., IT ONLY REQUESTS A PAPERWORK TASK FOR IN-FLIGHT CHECKS TO BE PERFORMED BY FLIGHT CREWS DURING REVENUE FLIGHTS ACCORDING TO REF 3, REF 4, REF 5 AND REF 6.

THEREFORE, NO SPECIFIC ELAPSED TIME IS SPECIFIED IN THE PRESENT AOT.

4.2.DESCRIPTION

AFTER ENQUIRY, IT HAS BEEN CONCLUDED THAT THERE IS NO EASY AND RELIABLE MEANS TO CHECK THE PRESENCE OF WATER IN THE BDDV COVER THROUGH A MAINTENANCE TASK ON A SHORT TERM BASIS.

CONSEQUENTLY, IT IS REQUESTED TO IDENTIFY THE VALVES POTENTIALLY AFFECTED BY WATER INGRESS THROUGH AN IN-FLIGHT CHECK OF THE ALTERNATE BRAKING SYSTEM TO BE PERFORMED BY THE FLIGHT CREW.

THE DETAILS OF THE CHEGK PROCEDURE ARE PROVIDED IN PARAGRAPH 4 OF FOT REF 3 FOR A300 AIRCRAFT, PARAGRAPH 4 OF FOT REF 4 FOR A300-600/A310 AIRCRAFT, PARAGRAPH 3 OF FOT REF 5 FOR A319/A320/A321 AIRCRAFT AND PARAGRAPH 4 OF FOT REF 6 FOR A330/A340 AIRCRAFT.

THROUGH THIS AOT, AIRBUS INDUSTRIE REQUEST THAT FOR EACH AIRCRAFT, THE OPERATORS PLAN AND PERFORM THIS IN-FLIGHT CHECK.

FOR THIS PURPOSE, IT IS REQUESTED TO IDENTIFY FOR EACH AIRCRAFT ONE OF THE LONGEST FLIGHT TIMES AMONG THE SCHEDULED FLIGHTS WITHIN EACH INTERVAL.

TO IDENTIFY THE PRESENCE OF A SUFFICIENT AMOUNT OF WATER TO FREEZE A VALVE, THE WATER HAS TO HAVE ENOUGH TIME TO FREEZE. SO, THE LONGER THE FLIGHT, THE MORE REALISTIC THE IN FLIGHT ALTERNATE BRAKING SYSTEM CHECK IS.

THE CHECK HAS TO BE DONE AT THE END OF THE CRUISE, BEFORE THE DESCENT. IT IS THE PART OF THE FLIGHT IN WHICH VALVE FREEZING WILL BE THE MOST LIKELY TO OCCUR.

ONCE THE FLIGHT IS SELECTED, IT IS REQUESTED TO INFORM THE CREW ABOUT THE NEED TO PERFORM THE ALTERNATE BRAKING SYSTEM CHECK DURING THIS PARTICULAR FLIGHT AS PER PARAGRAPH 4 OF FOT REF 3 FOR A300 AIRCRAFT, PARAGRAPH 4 OF FOT REF 4 FOR A300-600/A310 AIRCRAFT, PARAGRAPH 3 OF FOT REF 5 FOR A319/A320/A321 AIRCRAFT AND PARAGRAPH 4 OF FOT REF 6 FOR A330/A340 AIRCRAFT.

IN CASE THE CHECK REVEALS THAT THE VALVE IS DEFECTIVE, MAINTENANCE ACTION HAS TO BE PERFORMED.

THEREFORE, IT IS ADVISED TO SELECT A FLIGHT WITH A DESTINATION WHERE MAINTENANCE IS AVAILABLE.

IN TERMS OF MAINTENANCE ACTION, THE REPLACEMENT OF THE BDDV IS RECOMMENDED.

IN CASE NO SPARE IS AVAILABLE, PLEASE CONTACT AIRBUS FOR FURTHER ADVICE.

NOTE 1: IT IS STRONGLY ADVISED TO AVOID HIGH PRESSURE CLEANING IN THE LANDING GEAR BAY.

NOTE 2: AS FAR AS NO TEMPORARY SOLUTION IS AVAILABLE AND THE CAUSE FOR WATER INGRESS IS NOT UNDERSTOOD, IT IS REQUESTED THAT NO MAINTENANCE ACTION IS PERFORMED ON AIRCRAFT ON THE BDDV SEAL AT THE JUNCTION AREA BETWEEN THE COVER AND THE BODY OF THE BDDV (NO SEAL REPLACEMENT, REMOVAL, TEST, ETC).

43.MATERIAL AND TOOLING

NO SPECIFIC MATERIAL AND TOOLING IS NECESSARY FOR THE ACCOMPLISHMENT OF THIS AOT.

5.FURTHER ACTION

A TEMPORARY SOLUTION IS PLANNED TO BE MADE AVAILABLE BY THE END OF JULY 1998.

AS THE EXTENT OF THE BDDV ICING POSSIBILITIES ON THE AIRBUS FLEET IS NOT YET KNOWN, IT MAY HAPPEN THAT THERE WILL NOT BE ENOUGH SPARES TO REPLACE DEFECTIVE VALVES.

THE AIM OF THIS TEMPORARY SOLUTION IS TO REPAIR THE DEFECTIVE VALVES TO AVOID GROUNDING OF THE AIRCRAFT.

FOR THE TIME BEING, SUCH TEMPORARY SOLUTION WILL HAVE TO BE APPLIED ONLY ON DEFECTIVE VALVES.

THE OBJECTIVE IS TO DEVELOP A FINAL SOLUTION IN THE COMING MONTHS.

MORE INFORMATION ON THIS SUBJECT, WITH A TENTATIVE PLANNING, WILL BE PROVIDED THROUGH THE APPROPRIATE MEDIA IN DUE TIME.

6.AOT APPROVAL

THIS AOT IS APPROVED BY THE FRENCH AIRWORTHINESS AUTHORITIES (DGAC).

7.REPORTING/ACKNOWLEDGEMENT

OPERATORS ARE REQUESTED TO ACKNOWLEDGE RECEIPT OF THIS AOT TO R.LASCOURS AI/SE-Q (SITA CODE TLSBT7X, FAX NUMBER 33 (0)5 61 30 00 79) WITHIN 48 HOURS AFTER RECEIPT. THIS ACKNOWLEDGEMENT CAN BE MADE THROUGH THE AIRBUS RCSR OFFICE WHERE AVAILABLE.

IN-FLIGHT ALTERNATE BRAKING SYSTEM CHECK RESULTS ARE TO BE SENT TO AIRBUS CUSTOMER SERVICES, ENGINEERING AND TECHNICAL SUPPORT, ATTENTION MR ZANDERIGO, AI/SE-E32, PHONE NUMBER 33 (0)5 61 93 40 38, FAX NUMBER 33 (0)5 61 93 32 73, SITA CODE TLSBW7X, AS SOON AS POSSIBLE, AFTER THE AOT APPLICATION. IT IS SUGGESTED TO PROVIDE AIRBUS WITH CHECK RESULTS BEFORE THE END OF JULY AND THEN LATER ON, ONLY IF ANOMALIES ARE DETECTED.

QUESTIONS ABOUT THE TECHNICAL CONTENT OF THE AOT ARE TO BE ADDRESSED TO MR ZANDERIGO.

R.LECOMTE

VICE PRESIDENT

Případné dotazy konzultujte s pracovníkem ÚCL Technický inspektorát: Ing.Toman tf.č.2011/2711