Docket No. SA-522

Exhibit No. 7-LL

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

Structures
Various Airbus Communications
Referencing American Airlines
Flight 903

(22 Pages)

Telefax / Telecopy

Daimler-Benz Aerospace
Airbus

Fax an/to No.: [redacted]

Firma/firm: [redacted]

Name/name: Mr. C. Curbillon.

Abt./dept.:

Fax von/from No.: [redacted]

Name/name: Quast

Abt./dept.: EDA

Tel./phone: [redacted]

E-Mail: I

Ref./No.: EDA-1436/97

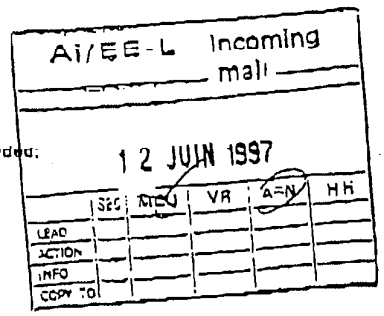
Datum/date: 12.06.97

cc: Mr. A. Blanc-Nikolaitchouk, Mr. Rasenke, DA BWT
Mr. Dr. Schröder DA EM, Mr. Th. Delest, AS/A/BTE/EG/CA
Mr. G. Squeglia, DA EDB, DA EDC

Subject: A300-600 R AAL turbulence
Ref.: 443.0128/97

In the shortness of time DA ED-Loads gives a general order from Loads point of view (lateral motion).
Due to your information of time histories DA Loads urgently recommends an inspection of this A/C (MSN 513).
Following A/C components have to be inspected due to the promised relevant exceedance of Design Limit Loads A300-600R.
Inspection of A/C components:

- Complete Vertical Tail
- Rudder and Rudder attachments
- Vertical Tail Attachments
- Rear Fuselage incl. C91
- Horizontal Tailplane Attachments.



Note: To give a complete statement additional information is needed:
Time history of roll rate, yaw angle β
Yaw,- pitch rate β', omega x
Spoiler deflections

We are also missing the weight/mass of A/C.

Please send these data via AS/DA FLT-Emergency line.

Unterschrift/
signature

[redacted]

Seite/page 1 von/of 1

Daimler-Benz Aerospace
Airbus GmbH
Postfach 95 01 09

(2)

M E M O A I R B U S I N D U S T R I E

Airbus Electronic Mail System
Arnaud BLANC-NIKOLAITCHOUK
AI/EE-L
Ext: [redacted]

Blagnac, 13-Jun-1997 09:38 TLS
Ref: 443.0135/97

TO: Jean DANEY AI/E-FS (DANEY)
TO: Yannick MALINGE AI/E-FS (MALINGE)

CC: Michel CURBILLON AI/EE-L (CURBILLON)

Subject: AAL A300-600R turbulence : load investigation.

Attached: DA fax EDA-1436/97.

Please find hereafter a preliminary assessment from DA loads, responsible for lateral loads. They have clear concerns on the overall rear part of the aircraft which could have encountered loads higher than the design limit loads. DA request urgent inspection of the aircraft to be performed.

Additional investigation is currently under process within each partner company.

Best regards.

Arnaud Blanc-Nikolaïtchouk

[redacted]

(3)

M E M O A E R O S P A T I A L E T O U L O U S E

Airbus Electronic Mail System
BERNARD HECIAK
Ext:

St Martin, 19-Jun-1997 06:13pm TLS
Ref: NONE

TO: AI:DANEY Jean ([redacted])

CC GENNARO SQUEGLIA ([redacted])
CC: GENEVIEVE CAZET SUPERVIELLE ([redacted])
CC: GEORGES MOUSQUET ([redacted])
CC: BERNARD BISSEY ([redacted])

Subject: A300-600R MSN 513

1/ Considering the high load factors encountered by A/C MSN 513, the procedure as described by AMM chapter 05.51.17 should have been followed and corrective actions taken in case of findings.

2/ reporting to AIB would also be of great interest.

3/ Meanwhile, the DFDR was given to AIB for analysis and the study confirms high load factors both for longitudinal and lateral aspects.
Although these actual load factors are lower than previously announced, it appears that for some areas of the airplane limit design loads have been exceeded and for some others such as rear fuselage, fin and empennage the ultimate design loads could have been reached.

In such conditions, it is necessary to require a closer inspection of the A/C.
This inspection has to be done as early as possible.

Regards.

B. HECIAK

MEMO AIRBUS INDUSTRIE

Airbus Electronic Mail System , 15-May-1997 09:56pm TLS
AAL/TUL Ref: NONE
Airbus Industrie
Ext :

TO: See Below

Subject: A300-600 MSN 513 TURBULENCE ENCOUNTER

AIRBUS TXT 2
O/Ref: AAL/TUL/000383/97
Y/Ref: Date: 1997/05/15

Reply Requested: NR

Subject : **A300-600** MSN 513 TURBULENCE ENCOUNTER

FROM: MR. I. BULLAMORE - ACS-R/AAL/TUL

TO: MR. Y. BENOIST - AI/E-FS

GENTLEMEN,

AAL FLIGHT SAFETY HAS INFORMED ME THAT THEY WILL NOT GIVE ME THE DFDR FROM THE SUBJECT INCIDENT. FURTHER, AAL FLIGHT SAFETY INFORMED ME THAT THEY WILL PROBABLY NEVER AGAIN RELEASE THE DFDR TO AIRBUS.

THE REASON IS....APPARENTLY AIRBUS AND AAL ARE INVOLVED IN A LAW SUIT OVER AP REVIOUS TURBULENCE INCIDENT. APPARENTLY THE AIRBUS LAWYERS ARE USING THE DATA FROM THE DFDR FROM THE PREVIOUS INCIDENT AGAINST AAL. THEREFORE, AAL WILL NOT SUBJECT THEM SELVES TO POSSIBLE INCRIMINATION AGAIN.

ALSO, THIS **PUTS ME** IN **A** VERY DELICATE SITUATION. EVERY **TIME** AAL **GIVES** ME A DFDR I SIGN A NON-DISCLOSURE AGREEMENT. THIS AGREEMENT HAS SEVERAL PARA'S, ONE OF WHICH SPECIFICLY STATES THAT I (AIRBUS) WILL NOT USE THE INFORMATION "FOR DISCLOSEE'S OWN BENEFIT OR OTHERWISE EXPLOIT THE DFDR INFORMATION". I HAVE A COPY OF A BLANK DISCLOSURE AGREEMENT FOR ANY OF YOU WHO MIGHT WANT TO SEE IT.

FURTHER, **AT** THIS TIME, *NO* ONE WITHIN AAL WILL EVEN DISCUSS THE INCIDENT WITH ME. AAL FLIGHT SAFETY WILL NOT EVEN RETURN MY **CALLS** REGARDING THE INCIDENT.

I SUGGEST THAT AIRBUS FLIGHT SAFETY DISCUSS THIS SITUATION DIRECTLY WITH AAL FLIGHT SAFETY.

NR
BRGDS,
IKE BULLAMORE
AAL/TUL

Distribution:

TO: BENOIST Yves, AI/E-FS [redacted]

CC: BRACKEN Ernie, ACS-C2 [redacted]
CC: DERISSON Jean-michel, AI/SE-A12 [redacted]

5

CC: GILLET **Jean-Pierre,** AI/SE-E4 ([redacted])
CC: **LECOMTE Roger,** AI/SE ([redacted])
CC: MALINGE Yannick, AI/E-FS ([redacted])
CC: RECEPTION **Ais,** AI/SG-R ([redacted])
CC: VAN DER HEYDEN Thierry, ACS ([redacted])

13 JUN 1997 17:30 From Airbus Industrie To 00049407437633? P1

TELEFAX **AIRBUS INDUSTRIE**

FROM : AIRBUS INDUSTRIE DERISSON Jean-Miche 13-Jun-1997 05:40pm
1 Rond Point Maurice Bellonte
F 31707 Blagnac Cedex France
DEPT : AI/SE-A12
TELEX: 530526F AIRBU * 2116
SITA : TLSBU7X
PHONE: (33)(0) [redacted]
FAX : (33)(0) [redacted]
OUR REF : NONE
YOUR REF:
SUBJ : A300-600 MSN513/AAL ACTIONS FURTHER TO TURBULENCES

CC : DASA/HAM (FAX [redacted])

As you may already be aware, subject A/C suffered heavy turbulences during approach on May the 12th.

After long dicussion and arguments with AAL, a workable DFDR read out related to this incident was finally given to AIB.

DFDR data were forwarded on June the 9th as follows:
in AS to Marie Pierre JOLY A/BTE/EG/CA
in BAe to Duncan PATTRICK 863
in DASA/HAM to Dieter QUAST EDA (Tel. [redacted] (Fax. [redacted])

We have contacted again AAL to request feed back about the inspections they performed and the related findings if any. We nevertheless assume that they carried out the AMM 05 51 17 inspections required after excessive turbulence.

Considering all the above, can you please confirm on Monday June the 16th:

1/ If there is a need for inspections to be performed in addition to AMM 05 51 17

2/ If additional inspections are required, can they be postponed at a later maintenance opportunity or are ~~they required~~ urgently.

In case additional inspections are confirmed to be necessary, definition of the inspection tasks will of course be required. The urgency will depend on how soon the inspections have to be carried out.

Should you require any additional info on this subject, please do not hesitate to contact us.

best regards,
Jean Michel DERISSON

AAC vorab mit Fax
"Manöver"

H. Boden BWT
Akt. ← H. Arndt, EMA
H. Thürnagel, EDC
H. [illegible] EDA

(7)

Customer Support Services Division

AIRBUS INDUSTRIE

Date: *19/06/97*
Reference: *952.3453/97*

From: ***Olivier ILLES***
To: ***ARCS:AALTUL***
Cc: ***Marilou EVRARD*** ***AI/SE-E4***
Cc: ***Ernie BRACKEN*** ***ACS-C2***

Subject: ***A300-600 MSN 513 TURBULENCE ENCOUNTER***

Ike,

Please find hereunder the report of the incident of MSN 513.
Please distribute it to all people interested in AAL.

Olivier.

Attached file(s): ***D:\AIRBUS\ARCS\db\attachs\~map0523.txt***
D:\AIRBUS\ARCS\db\attachs\~map0534.zip

YOUR REF 1 : AAL/TUL/000370/97
YOUR REF 2 : AAL/TUL/000386/97
YOUR REF 3 : AAL/TUL/000412/97
YOUR REF 4 : AAL/TUL/000424/97
OUR PREV REF 1 : 952.2915/97
OUR PREV REF 2 : 952.2933/97
OUR PREV REF 3 : 952.3315/97

Please find hereunder the sequence of events issued from DFDR data extracted from the tape decoded on 5 June. These new data are far less garbled than the previous ones on diskette.

NOTA : The following factual statements have been made based on available data only. Any of these statements could be modified, should new information be available.

For a better understanding, please refer to the attached compressed file AAL513.ZIP containing the WORD file AAL513.DOC, including :
- Figure 1 : List and characteristics of the longitudinal parameters. The vertical acceleration is expressed in g number, positive when A/C is accelerating upwards.
- Figure 2 : List and characteristics of the lateral parameters. The lateral acceleration is expressed in g number, positive when A/C is accelerating on the left.
- Figure 3 : DFDR curves of longitudinal parameters evolution.
- Figure 4 : DFDR curves of lateral parameters evolution.
The complete batch of curves is also sent by normal mail.

The following expressions are used in this report :
- ANU : A/C Nose Up
- AND : A/C Nose Down
- RWD : Right Wing Down
- LWD : Left Wing Down

From the available data, the following can be stated :

A- Sequence of events

1- GMT 19.27.00 :

A/C is descending towards FL 160 with an airspeed of 250 kts and a heading 220. A/P 1 is engaged. The throttles are on idle thrust position (TRA 37.5 deg which corresponds to TLA 0).

The A/THR is not engaged. This is evidenced by the following facts :
- With A/THR engaged, the speed would have never dropped (see after) below selected 210 kt speed (according to crew report).
- Even in case of wrong speed input by the crew, the speed is anyway limited by the ATS to VLS (in that case about 193 kts), which is not the case in the following of this report.
- When the A/THR is engaged, it cannot lead the throttles to go below 5 degrees TLA (42 degrees TRA) or above 48.3

degrees TLA (79.5 degrees TRA) whereas during the event they actually reach 37.5 degrees TRA and 84 degrees TRA.

2- GMT 19.27.00 to 19.28.20 :

Airspeed is decreasing and passes 215 kts. A/C stabilizes at FL 160. Heading is increasing and stabilizes at 230.

3- GMT 19.28.20 to 19.28.52 :

Airspeed is going on dropping down to 180 kts (VLS estimated to 193 kts at that time). Heading changes to 240 and begins to increase towards 270.

4- GMT 19.28.52 to 19.29.01 :

A/C roll attitude begins to increase (R/H turn). Pitch attitude and AOA are 4.5 degrees ANU and begin to increase. RWD (R/H) roll is commanded by the ailerons during this period.

5- GMT 19.29.01 :

The AOA is at 6.5 deg ANU, the roll angle at 17 deg RWD and the ailerons begin to go LWD (the A/P tries to limit the roll angle). Airspeed is at 179 kts.

6- GMT 19.29.01 to 19.29.06 :

A/P 1 is still engaged. Vertical G-load is increasing to +1.2 g, Pitch and AOA to 8 degrees ANU and roll to 35 degrees RWD. Airspeed hits a low at 177 kts. Heading is 270 at that time. RWD (R/H) roll excursion is counteracted by the ailerons during this period, up to their stop (19 deg down reached on R/H aileron).

During periods 4-, 5- and 6-, full power is applied to the engines in two phases :
- From GMT 19.28.58 to 19.29.02 : From idle to climb power at about 10 deg/sec TLA.
- From GMT 19.29.05 to 19.29.06 : From climb to full power rapidly.
Therefore the throttle increase from idle to full power is most probably manual.

7- GMT 19.29.06 :

Stall warning is activated. AOA at this time is 10 degrees ANU going on increasing; pitch is 10.5 degrees ANU going on increasing; roll is 45 degrees RWD going on increasing. A/P 1 disconnects. Ailerons are full left turn deflected. Vertical G-load begins to decrease. Rudder is deflected on the left (above 20 degrees).

Stall warning has been triggered in the FWC because AOA overshot the 8.5 degree ANU threshold in clean configuration.

Concerning the A/P disconnection, the BITE records all non

voluntary disconnections, including a force higher than 15 dan. Only the voluntary disconnections through the lever or the instinctive disconnect switches are not recorded. During the incident flight, the BITE did not record any abnormal A/P disconnection. Therefore we can conclude that the A/P 1 most probably disconnected by action on the instinctive disconnect switch.

8- GMT 19.29.06 to 19.29.08 :

. Pitch angle reaches : 16 degrees ANU,
. True AOA : 13.5 degrees ANU,
. Roll angle reaches : 55 degrees RWD,
. Vertical G-load reaches : +0.6 g,
. Lateral acceleration reaches : +0.41 g.

9- GMT 19.29.08 to 19.29.13 :

Under the combined effect of the full left turn aileron deflection and the more than 20 degree left rudder deflection, the roll attitude quickly reverses to the LWD direction. The roll rate is estimated having reached 30 deg/sec (assessment made on the roll angle value).

. Pitch angle reaches : 9.2 degrees AND,
. True AOA : 2.5 degrees ANU,
. Roll angle reaches : 43 degrees LWD,
. Vertical G-load reaches : +1.83 g,
. Lateral acceleration reaches : -0.47 g.

Speed begins to increase.

10- GMT 19.29.13 to 19.29.18 :

Same phenomenon as in 9- is highlighted but the evolution in roll is reversed on the RWD side. Roll rate reaches 50 deg/sec. Stall warning is activated.

. Pitch angle reaches : 14 degrees ANU,
. True AOA : 18.2 degrees ANU,
. Roll angle reaches : 64.5 degrees RWD,
. Vertical G-load reaches : -0.22 g,
. Lateral acceleration reaches : +0.54 g.

11- GMT 19.29.18 to 19.29.40

The severe and oscillating excursions in roll, pitch and accelerations (vertical and lateral) are repeated under the same scenario : the ailerons are alternately deflected on the full left and right stop, associated to alternative actions on the rudder pedals and the elevators. Stall warning is activated two more times.

. Roll rates values reached are : 30 deg/sec LWD, 55 deg/sec RWD, 30 deg/sec LWD.
. Pitch angle reaches, successively : 22 deg ANU, 0 deg, 22.8 deg AND, 7 deg ANU.
. True AOA reaches, successively : 3 deg AND, 14 deg ANU, 4.5 deg AND, 15.2 deg ANU.

. Roll angle reaches, successively : 25 deg LWD, unknown (loss of signal), 70 deg LWD, 54 deg RWD, 50 deg LWD.
. Vertical G-load reaches, successively : +2.25 g, -0.17 g, +2.61 g, -0.45 g, +2.84 g.
. Lateral acceleration reaches, successively : -0.66 g, unknown (loss of signal), -0.74 g, +0.54 g, -0.54 g.

During this lapse of time, the altitude looses 3050 ft. Airspeed has increased up to 270 kts.

12- GMT 19.29.40 to 19.30.25

During this phase, the A/C gains altitude from 13100 ft at an initial airspeed of 270 kts to 17900 ft where the airspeed bottoms out at 171 kts.

B- Summary

While flying at FL 160, turning right to heading 270, the airspeed dropped 16 kts below VLS, which, combined with the turbulence, led the A/C to over-roll on the R/H side, despite the counteraction of the ailerons. Full power was applied on the engines at that time.

The combination of the low speed and the turbulence at that time led the AOA to increase and the stall warning to be activated.

The first reaction of the crew seeing the A/C rolling to the R/H side with full yoke deflection on the left was to apply left rudder pedal order.

The A/C then experienced severe excursions in roll and pitch during the following 35 seconds with three activations of the stall warning. the manual control of the A/C during this period was performed by successive and alternate deflections of the rudder, the ailerons (to the stop) and the elevators. The A/C lost approximately 3000 ft during this period before overshooting the FL 160 by around 1800 feet and loosing speed again.

There was no evidence of aircraft or systems malfunction during the whole event.

Best regards
Olivier ILLES
Flight Guidance Systems Group Manager

* FIGURE X-1 : GENERALE CROISIERE (LONGI) - (Mot. GE au CFM) *

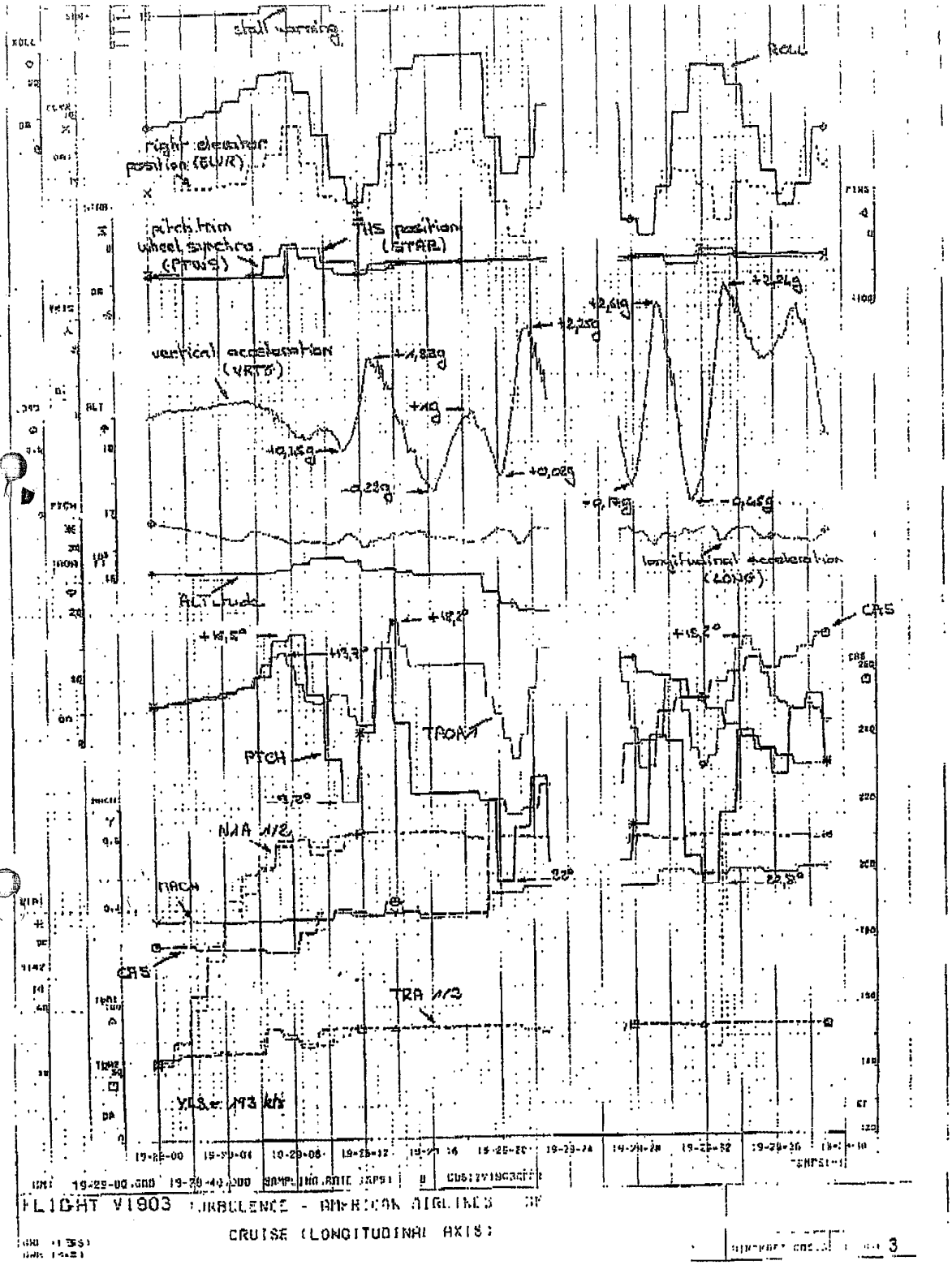
MNEMONIC	DEFINITION (FRAME : 4 s.)	UNIT	SIGN CONVENTION	SPS.	RESOL.	SOURCE(S)	LABEL/BIT	WORD
				1	0.000			5
ALT	ALTITUDE COMBINATED BITS 12/29	(FT)		1	0.062			60
N1A1	N1 ENGINE 1 (FMC)	(%)		1	0.062			62
N1A2	N1 ENGINE 2 (FMC)	(%)		1	0.125			12
TRA1	THRUST RESOLVER ANGLE ENG.1 (FROM FMC)	(DA)		1	0.125			22
TRA2	THRUST RESOLVER ANGLE ENG.2 (FROM FMC)	(DA)		1	0.352			17
ROLL	ROLL ANGLE	(DA)	>0= RH WING DOWN	1	0.176			51
PTCH	PITCH ANGLE	(DA)	>0= NOSE UP	2	0.088			11
TAOA1	TRUE LH ANGLE OF ATTACK (conf)	(DA)	>0= UP	1	1.000			30
STALL	STALL WARNING		1= STALL	4	0.000			2
LONG	BODY LONGITUDINAL ACCELERATION	(G)		8	0.000			4
VRTG	BODY NORMAL ACC.NORDS 4/13 COMBINATED	(G)		1/ 2	0.350			55
STAB	STABILIZER POSITION	(DA)	>0= NOSE DOWN	1	0.085			18
PTWS	PITCH TRIM WHEEL SYNCH.		>0= NOSE DOWN	1	0.353			41
ELVR	ELEVATOR POSITION RH	(DA)	>0= NOSE DOWN	1	0.250			19
CAS	COMPUTED AIRSPEED	(KT)		1/ 2	0.001			21
MACH	MACH NUMBER			1	0.040			6
CG	CENTER OF GRAVITY CGCC	(%)		1	1.000			11
AP1E	CMD MODE A/P.1		1= CMD MODE	1	1.000			51
AP2E	CMD MODE A/P.2		1= CMD MODE	1	1.000			54
ATHRE	A/THR MODE ENGAGED		1= ENGAGED	1/64	0.000			23
GW	GROSS WEIGHT FLAB.							

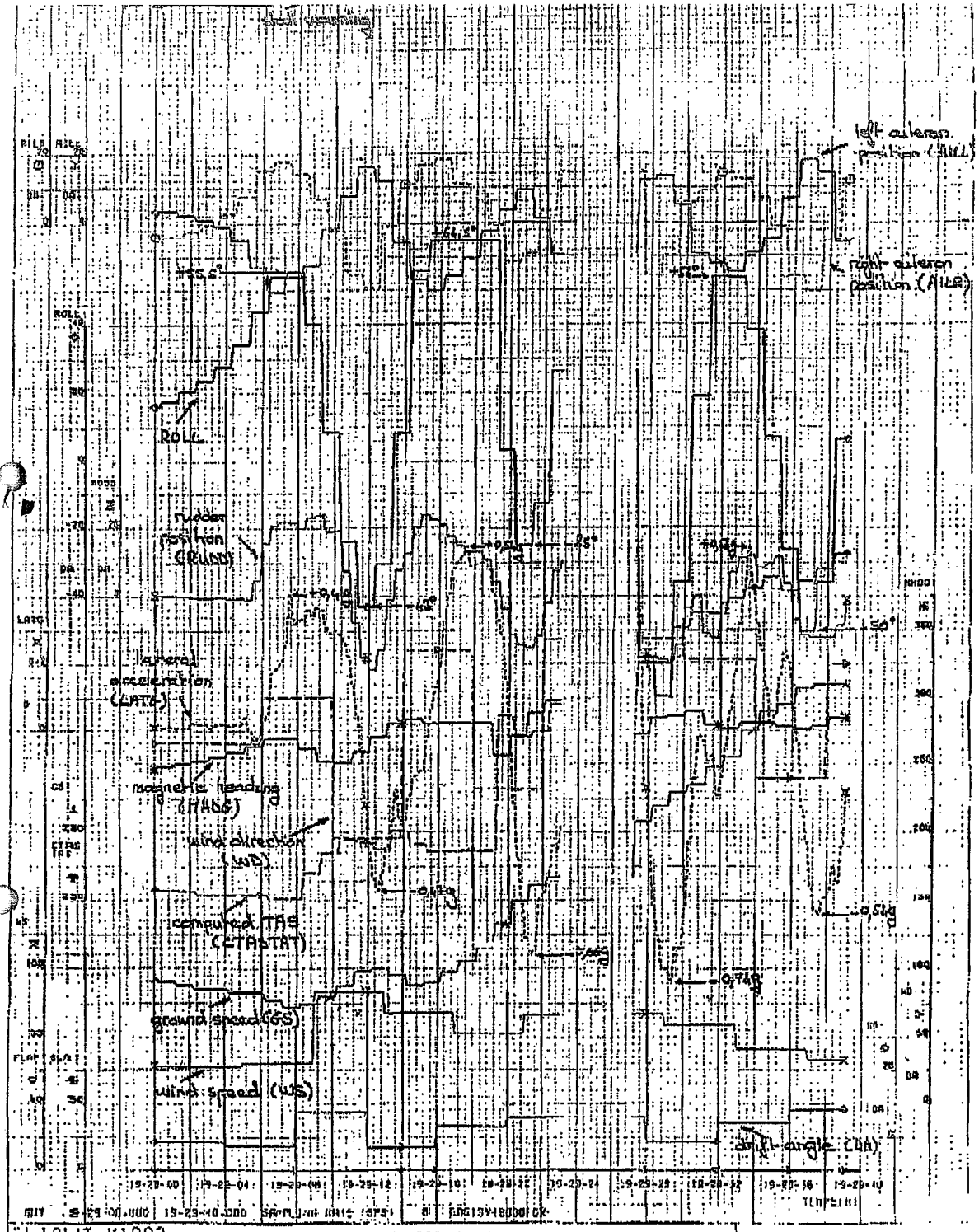
FIGURE 1

* FIGURE X-2 : GENERALE CROISIERE (LATERAL) *

MNEMONIC	DEFINITION (FRAME : 4 s.)	UNIT	SIGN CONVENTION	SPS.	RESOL.	SOURCE(S)	LABEL/BIT	WORD
				1	0.352			3
MHDG	MAGNETIC HEADING	(DA)		1/ 4	0.062			58
WS	WIND SPEED	(KT)		1/ 4	0.088			58
WD	WIND DIRECTION	(DA)		1/ 4	0.088			58
DA	DRIFT ANGLE	(DA)		1	0.352			17
ROLL	ROLL ANGLE	(DA)	>0= RH WING DOWN	1	1.000			30
STALL	STALL WARNING		1= STALL	4	0.000			15
LATG	BODY LATERAL ACCELERATION	(G)		2	0.353			27
RUDD	RUDDER POSITION	(DA)	>0= TURN LEFT	1	0.351			9
AILL	ALL SPEED AILERON LH	(DA)	>0= TURN RIGHT	1	0.351			40
AILR	ALL SPEED AILERON RH	(DA)	>0= TURN LEFT	1/ 2	0.000			39
FLAP	FLAPS POSITION	(DA)		1/ 2	0.052			39
SLAT	SLATS POSITION	(DA)		1	1.000			14
GS	GROUND SPEED	(KT)		1	0.000			19
CTASTAT	CALCULATED TRUE AIRSPEED **********			1	0.040			6
CG	CENTER OF GRAVITY CGTT	(%)		1	1.000			31
AP1E	CMD MODE A/P.1		1= CMD MODE	1	1.000			51
AP2E	CMD MODE A/P.2		1= CMD MODE					

FIGURE 2


stall warning
right elevator position (ELVR)
pitch trim wheel synchro (PTRIM)
HS position (STAB)
ROLL
vertical acceleration (VERT)
+1,33g
+1g
+0,16g
-0,23g
+0,02g
+2,61g
+2,25g
+2,2g
-0,45g
+0,8g
long (inertial) acceleration (LONG)
ALT (inds)
+16,5°
+16,2°
+13,3°
+15,2°
CRS
TRACK
PITCH
-1,2°
NAA N/2
MACH
CRS
TRA N/3
22°
22,5°
VLS = 193 kts
19-28-00
19-28-04
19-28-08
19-28-12
19-28-16
19-28-20
19-28-24
19-28-28
19-28-32
19-28-36
19-28-40.000
SAMPLING RATE (SPS)
FLIGHT V1903 TURBULENCE - AMERICAN AIRLINES
CRUISE (LONGITUDINAL AXIS)



FLIGHT V1903 TURBULENCE - AMERICAN AIRLINES SE

CRUISE (LATERAL AXIS)

[redacted]

M E M O

A I R B U S I N D U S T R I E

Airbus Electronic Mail System
Pierre CAMBON
AI/SE-A11
Ext: [redacted]

Blagnac, 18-Jun-1997 11:49am TLS
Ref: 942.6185/97

TO: See Below

Subject: A300-600,AAL,MSN0513,N90070 ACTIONS FURTHER TO TURBULENCES

Customer Services Directorate
Pierre CAMBON
AI/SE-A11
Ext:(33)(0) [redacted]

Blagnac, 18-Jun-1997
Ref: 942.6185/97

TO: SEE DIST. LIST

Subject : A300-600,AAL,MSN0513,N90070 ACTIONS FURTHER TO TURBULENCES

Our previous ref: 942.6168/97

Please find hereafter feed back we received from AAL. As you can see, AAL will not provide us with the list of findings from the inspections performed !

Quote:

YES, AAL PERFORMED AMM 05.51.17 PLUS 05.51.27 PYLON SIDE LOAD INSPECTION.
BOTH WERE DONE IN MIA AFTER THE INCIDENT. THE AAL STRUCTURAL ENGINEER "WILL NOT" - REPEAT "WILL NOT" GIVE ME THE LIST OF FINDINGS FROM THE INSPECTIONS.
HE SAID SOME FASTENERS IN THE WING WERE SHEARED BUT WILL NOT GIVE ME DETAILS.
NOTE, THERE WERE NO FUEL LEAKS.

Unquote

Could you please coordinate all necessary actions with loads/stress/others department involved, in order to provide AAL with list of inspection tasks and when these tasks will have to be performed. (Refer to our previous mail 942.6023/97 DATED 13/06/97)

Ugent reply requested before 3.00PM today.

REGARDS,

URGENT

Pierre CAMBON
MIRG COORDINATOR
AI/SE-A11

16

M E M O **A I R B U S I N D U S T R I E**

Airbus Electronic Mail System
Thomas GROTZKY
AI/SE-A1
Ext: [redacted]

Blagnac, 19-Jun-1997 08:29pm TLS
Ref: 942.6272/97

TO: See Below

Subject: A300-600, MSN513, AAL, FLIGHT IN TURBULENCE

Dear Mr.Zepf,

with reference to our telephone conversation concerning the flight through turbulence of MSN513 please note as follows.

Further to the analysis of the DFDR readings, Airbus Industrie confirms that some areas of the aircraft have sustained very high loads, in particular in the aft part of the aircraft. These loads require the aircraft to be deeply inspected after the event.

However, we are aware that some inspections as per the applicable AMM chapter 05 have been performed. We kindly ask you to send to Airbus Industrie urgently the details of the inspections performed and the associated findings. This will allow Airbus Industrie to determine additional requirements, if any. Top priority should be given to data on the rear part of the aircraft.

Best regards,

Thomas Grotzky for J.M.Gaillardon
Director
Structure Engineering

Distribution:

TO:	MR.A.W.ZEPF Mgr.Airframe, Systems		(FAX_000[redacted])
	ARCS:AAALTUL		([redacted])
CC:	Jean-Michel GAILLARDON	AI/SE-A	(GAILLARDON)
CC:	Roger LECOMTE	AI/SE	(LECOMTE)
CC:	Yves BENOIST	AI/E-FS	(BENOIST)
CC:	Eberhard GEST	AI/SE-W	(GEST)
CC:	FILING	AI/SE-A1	([redacted])
CC:	REFERENCE AI/SE-A1 942.6272/97		([redacted])
CC:	Pierre CAMBON	AI/SE-A11	([redacted])

17

M E M O

A I R B U S I N D U S T R I E

Airbus Electronic Mail System
Eberhard GEST
AI/SE-W
Ext: [redacted]

Blagnac, 20-Jun-1997 04:38pm TLS
Ref: 940.1875/97

TO: See Below

Subject: A300-600 MSN 513 AAL - EXPOSURE TO VERY HIGH LOADS

David,

subject aircraft was reported to have encountered severe turbulence during approach.

AAL initially reluctant to release the DFDR as well as any inspection results did so recently.

Based on this information the corresponding responsible of our partners saw no reason to ground the a/c. However they will transmit additional inspection requirements to AAL early next week which AAL were very much willing to perform within the time constraints provided (next A-check). AAL were informed about our serious concern in this issue and that we refrained putting the a/c on ground only because of the inspection results received from them today.

Another concern I would like to raise is that if this a/c forms part of the batch being AIB property we should retain carefully the evidence to claim compensation if this a/c will show damage which was not discovered now and inform AAL accordingly. Since I don't know exactly who would be responsible for that I am addressing myself to you.

Best regards

Eberhard Gest

Distribution:

TO:	David BAUSOR	AI/BW	([redacted])
CC:	Roger LECOMTE	AI/SE	(LECOMTE)
CC:	Jean-Michel GAILLARDON	AI/SE-A	(GAILLARDON)
CC:	Thomas GROTZKY	AI/SE-A1	(GROTZKY)
CC:	REFERENCE AI/SE-W 940.1875/97		([redacted])
CC:	Thierry VAN DER HEYDEN	ACS	(VANDERHEYDEN)
CC:	Ernie BRACKEN	ACS-C2	(BRACKEN)
CC:	Cornelius BRONDER	AINA/C	(BRONDER)
CC:	David BRADLEY	AI/SP	(BRADLEY)
CC:	Patrice ROGER	AI/EE-I	([redacted])

18

E E E C

Post-it® Fax Note 7671 | Date 6/24 | # of pages ▶ 2

To D. Zepf	From Tke
Co./Dept.	Co. Airbus
Phone #	Phone #
Fax #	Fax #

Airbus Electronic Mail System
Pierre CAMBON
AI/SE-A11
Ext: 34711

TO: See Below

Subject: A300-600,AAL,MSN0513,N90070 ACTIONS FURTHER TO TURBULENCES

Customer Services Directorate
Pierre CAMBON
AI/SE-A11
Ext: (33) (0) [redacted]

Blagnac, 24-Jun-1997
Ref: 942.6408/97

TO: ARCS:AALTUL CC:

Subject : A300-600,AAL,MSN0513,N90070 ACTIONS FURTHER TO TURBULENCES

Your ref: ACS-R/AAL/TUL/000465/97
Our previous ref: 942.6371/97 DATED 23/06/97

THIS MAIL SUPERSEDE PREVIOUS MAIL IN REFERENCE ABOVE.

Further to the inspection report and results provided by AAL for above mentioned subject and after investigation with our stress office, please find hereafter additional inspection tasks that we recommend to perform at the next opportunity, not later than the next A Check.

List of inspection tasks to be performed:

All structural inspections are visual.

Total A/C:	Levelling and measurement check at the earliest as per AMM05-56-00 para.8 and 9 only * must show no permanent deformations of the A/C (Stabilizer !)
Fuselage (inside):	FR 84 up to FR 87 above stringer 23 included FR 91 all areas
Fuselage (outside):	all corners at the door cutouts area between FR54 and FR58 below stringer 38
Vertical stabilizer:	RIB 7 rear frame-work strut (inside) RIB 12 front frame-work strut (inside) Skin panels near fuselage attachment

24.JUN.1997 17:50 AIR STRUCT REPAIR 33 [redacted] NO.553 P.1

06/24/97 10:39 TX/RX NO.8118 P.001

(19)

fittings (inside and outside):
* between rear spar and stringer 5 and 4
* between stringer 8 and 15 up to rib 3
* between stringer 21 and front spar up to rib 2

Horiz. stabilizer : General inspection of THS and Elevator skins looking for deformations, misalignments
Detection of Elevators by hand to check misalignments or deformations of hinge fittings
Rear support and screw jack fittings
THS skin joints
Spar joints

Wings:

We recommend to extend the inspection according to AMM to Rib 29.

Please provide us with inspection results and comments.

In addition to, please provide us with sketch showing location of sheared fastaners and action performed

REGARDS,

Pierre CAMBON
MIRG COORDINATOR
AI/SE-A11
TEL (33)[redacted]

Distribution:

TO: ARCS:AALTUL [redacted]

CC: REFERENCE AI/SE-A11 942.6408/97 [redacted]
CC: Eberhard GEST AI/SE-W (GEST)
CC: Jean-Michel GAILLARDON AI/SE-A (GAILLARDON)
CC: Thomas GROTZKY AI/SE-A1 (GROTZKY)
CC: Prosper KUIJPERS AI/SE-A11 (KUIJPERS)
CC: Jacques LEBORGNE AI/SE-A2 (LEBORGNE)
CC: Marie-France BOUSQUET AI/SE-A1 ([redacted])
CC: Jean DANEY AI/E-FS (DANEY)

24.JUN.1997 17:51 AIR STRUCT REPAIR 33[redacted] NO339 P.2

06/24/97 10:39 TX/RX NO.8118 P.002

(20)

MEMO AIRBUS INDUSTRIE

Airbus Electronic Mail System
Pierre CAMSON
AI/SE-A11
Tel: [redacted]

Blagnac, 25-Jun-1997 06:12pm TLS
Ref: 942.6455/97

TO: See Below

Subject: A300-600,AAL,MSN0513,N90070

Post-it® Fax Note 7671	Date 6/25	# of pages ▶ 2
To Al Zapf	From Tko	
Co. T. Forsberg	Co.	
Phone #	Phone #	
Fax #	Fax #	

Customer Services Directorate
Pierre CAMSON
AI/SE-A11
Tel:(33)(0) [redacted]

Blagnac, 25 Jun 1997
Ref: 942.6455/97

TO: SEE DIST. LIST

Subject : A300-600,AAL,MSN0513,N90070

Your ref: E.TUL.0476

Further to your mail in reference and our phone call, please note the following

1) Levelling and measurement check for stabilizer is not required for application during this check. Inspection result will confirm if this action has to be done (at next AAL check)

2) Scuff plate removal not necessary for fuselage inspection (outside)

3) Wings inspection:
Extended inspections up to Rib 29

Phase 1. External inspection only, if no damage is apparent then no further action is required. If damage is present, in principle phase 2 must be carried out. We would however advise AAL to report any phase 1 findings in order to consider possibility to postpone phase 2 till a more convenient opportunity or propose alternative inspections (avoiding to access the wing).

Phase 2. Close visual inspection of internal structure for distortion, cracks, pulling or tearing of fasteners and for damaged paint work.

4) Inspection has to be performed during this check (Inspection are simple and no time consuming checks)

5) Refer to point 1)

Hope this clarify the situation. Do not hesitate to contact us if further assistance is required. (STA-Temporary Procedure)

(21)

M E M O A I R B U S I N D U S T R I E

Airbus Electronic Mail System , 30-Jun-1997 06:40pm TLS
AALTUL Ref: NONE
Airbus Industrie
Ext:

TO: See Below

Subject: A300-600 ATA53 MSN513 TURBULENCE INSPECTION

AIRBUS TXT 2
O/Ref: AAL/TUL/000489/97 Date: 1997/06/30
Y/Ref:

Reply Requested: NR

Subject : A300-600 ATA53 MSN513 TURBULENCE INSPECTION

FROM: MR. I. BULLAMORE - ACS-R/AAL/TUL

TO: MR. P. CAMBON - AI/SE-A11

PIERRE,

AAL HAS COMPLETED THE INSPECTION AS OUTLINED IN Y/REF 942.6455/97. THE INSPECTION WAS COMPLETED ON 27 JUNE WITH AAL STRUCTURAL ENGINEERING TOM FORSBERG ON SITE AND THERE WERE NO FINDINGS.

I AM MAILING YOU THE FORMS USED DURING THIS INSPECTON PLUS COPIES OF ALL THE FORMS USED DURING THE INSPECTION ON 13 MAY. YOU SHOULD EXPECT TO RECEIVE EVERYTHING BY THURSDAY THIS WEEK.

NR
BRGDS,
IKE BULLAMORE
AAL/TUL

Distribution:
TO: CAMBON Pierre, AI/SE-A11 ([redacted])

CC: BOUSQUET Marie-france, AI/SE-A1 ([redacted])
CC: BRACKEN Ernie, ACS-C2 ([redacted])
CC: GAILLARDON Jean-Michel, AI/SE-A ([redacted])
CC: GEST Eberhard, AI/SE-W ([redacted])
CC: GROTZKY Thomas, AI/SE-A1 ([redacted])
CC: RECEPTION Ais, AI/SG-R ([redacted])

22