



# Noise Certification Workshop

## *AN OPERATOR'S VIEWPOINT*

Montreal, 20 to 21 October 2004

# Key Points

- Re-certification is a current process
- Re-certification may distort competition
- Noise documentation is requested to be accurate
- Accurate noise documentation requests flexibility

# Main Principles

## → Re-certification:

- Equal treatment
- Minimum cost

## → Documentation:

- Low administrative burden
- Simplicity while accurate and flexible

# A first experience of re-certification

- In 1997, noise energy cap in CDG
- In 1998, limitation of maximum flap deviation on AF Chapter 2 aircraft: 17 B737 200, 4 B747 100, in a subsonic fleet of 196. Frangible device
- 737 200 certification measurement campaign in France: -3.2EPNdB instead of -4

# Distortion of competition

- 747 100: the last one retired in early 2000
  - Chapter 2 in the French register: prohibited at night and progressively banned at CDG after 1997. Non Stage 3 banned in USA in 1999
  - Stage 3 with flap limited but non Chapter 3
- Non Ch 3 AF 747 100 sold and operated as US registered aircraft without any restrictions as Ch 3 in CDG
- Need for an international re-certification standard

# Other Experiences

- Progressive ban of “Ch 3 – 5” aircraft at CDG (cumulative margin < 5EPNdB)
  - During night, after 2000: limitation of flap deviation of B747 200 freighter during 9 months
  - During the remainder of the day, after 2004: limited flap deviation and reduced mass after 2008
  - Restriction slows fleet renewing if hush-kit amortization. AF intends not to hush-kit
- Ch 3 to Ch 4 contemplated for 200 aircraft: no modification

# Today's noise documentation

- Some aircraft do not have to carry noise documentation. Complete noise documentation is in the AFM and AFM is not on board
- Some on board documentation do not show certified levels
- Some *type* noise certificate show the *maximum* MTOW for which the type complies (purchased MTOW): no updating
- ICAO recommends to carry *individual* noise documentation

# Individual noise documentation on board

- Individual aircraft “changes” from time to time: at least, seasonal mass changes
- *Individual* noise documentation need to be updated: administrative workload
- ICAO provides 3 options

# An example of option 3

- The first document is an excerpt of the option 1 single document (numbered data)
- It states the compliance of the individual aircraft

## ANNEXE 1

For use by State of Registry:	1. FRANCE	3. Document Number: 117 551
2. NOISE CERTIFICATE		
4. Nationality and Registration Marks: FGRXE	5. Manufacturer and Manufacturer's Designation Of Aircraft: AIRBUS A319	6. Aircraft Serial Number: 1733
18. This Noise Certificate is issued pursuant to Annex 16, Volume I to the Convention on International Civil Aviation. In respect of the above-mentioned aircraft, which is considered to comply with the Chapter 3 noise standard when maintained and operated in accordance with the relevant requirements and operating limitations.		
19. Date of Issue : 14 mai 2002..... 20. Signature : Gilles de Robien.....		

Voir Manuel TU page 01.00.10.01

# Second document : the AOM, A320 family example

- The AOM is carried on board
- On one page of the AOM: the configuration of each individual aircraft

A318/19/20/21		Limitations		TU 01.00.10. 01			
AIR FRANCE O.A.N.T		GENERAL LIMITATIONS		project			
<b>1. MASSES STRUCTURALES</b>							
La MTOW de chaque matricule figure dans le RCT.							
Type avion / matricules	Roulage	Décollage	Atterrissage	Sans carburant	Certification bruit / chart		
<b>A318 :</b> F-GUGA et suivants	MTOW + 0,4 t	cf. RCT MTOW	56 t	53 t	2,1		
<b>A319 A4 :</b> F-GPMA à F-GPMI			61 t	57 t	2,2		
<b>A319 B5 :</b> F-GRHA à F-GRHZ F-GRXA à F-GRXF			63 t	59,8 t	2,3		
<b>A320-100 A1 :</b> F-GFKA/B/D/E/F/G/Q F-GGEA/B/C/E/F/G				59 t			
<b>A320-200 A1 :</b> F-GFKH/J/K/L/M/N/O/P/T/ U/V/X/Y/Z F-GHQA/B/C/D/E/F/G/H/J					60,5 t	2,4	
F-GHQK/L/M/O/P/Q/R et F-GJVF/G/W						2,3	
F-GJVA/B/C/D/E F-GKXA F-GLGG / GH				64,5 t	61 t	2,5	
<b>A320-200 A3 :</b> F-GFKR / KS F-GKXB F-GLGM					60,5 t	2,6	
<b>A320-200 B4 :</b> F-GKXC F-GKXD et suivants					61,5 t 61 t		
<b>A321-100 :</b> F-GMZA à F-GMZE					73,5 t	69,5 t	2,6
<b>A321-200 :</b> F-GTAD / TAE F-GTAH -TAM					75,5 t	71,5 t	2,7 2,6

*Note : Les conditions de performances opérationnelles peuvent imposer des limitations de masse plus restrictives.*

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# Second document: (continued)

- Following pages:  
levels according to  
configuration
- Numbered data as in  
option 1
- CAA approved

A318/19/20/21		Limitations		TU 01.00.10. 04			
AIR FRANCE		GENERAL LIMITATIONS		project			
GANT							
<b>Chart 2.5</b>							
5. Manufacturer's designation	AIRBUS A320						
	200						
7. ENGINE CFM 56-5	A3		B4/P				
9. MTOW in T	73	77	70	71	73	73,5	77
10. MLW in T	64,5	64,5	64,5	64,5	64,5	64,5	64,5
11. Noise Standard Chapter	3	3	3	3	3	3	3
12. Additional modifications incorporated for the purpose of compliance with the applicable noise certification standards	NIL						
13. Lateral / Full Power noise level in EPNdB	94,8	94,7	94,8	94,6	94,5	94,5	94,3
14. Approach noise level in EPNdB	96,0	96,0	95,7	95,7	95,7	95,7	95,7
15. Flyover noise level in EPNdB	86,3	88,1	82,8	83,2	84,0	84,2	85,6
Cumulative Margin in EPNdB	11,5	10,5	15,0	14,8	14,4	14,3	13,7
Noise group	4			5			
<b>Chart 2.6</b>							
5. Manufacturer's designation	AIRBUS A321						
	100		200				
7. ENGINE CFM 56-5	B1		B3/P				
9. MTOW in T	76	78	82	89			
10. MLW in T	73,5	73,5	75,5	75,5			
11. Noise Standard Chapter	3	3	3	3			
12. Additional modifications incorporated for the purpose of compliance with the applicable noise certification standards	NIL		NIL				
13. Lateral / Full Power noise level in EPNdB	95,7	95,6	96,2	98,0			
14. Approach noise level in EPNdB	95,4	95,4	96,5	96,5			
15. Flyover noise level in EPNdB	84,2	85,1	86,1	89			
Cumulative Margin in EPNdB	13,8	13,7	9,4	7,7			
Noise group	5		4	3			

# Third document

- Regulatory document, part of the AOM, traced
- Carried on board
- It shows the maximum masses of the serial number

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18 MAR 03 - ALARMES L/G DOORS NOT CLOSED / GEAR NOT DOWNLOCKED
Suite plusieurs cas de deterioration des verins de portes de trains
survenus dans d'autres Compagnies, en attendant une inspection de
ces verins par la maintenance, appliquer la consigne suivante.
En cas de temps de sortie ou de rentree d'un train anormalement
long, associe a une alarme et une indication anormale de porte de
train, attendre, si les conditions le permettent, environ 3 minutes,
en laissant la manette de train dans la position selectee, avant
d'appliquer la C/L ECAM.
Dans tous les cas reporter une plainte a l'ATEL.

08 JAN 03 - DEMARRAGE PAR TEMPS FROID
Par temps froid, pour eviter la non ouverture d'une vanne de
demarrage, les rechauffer en:
- utilisant l'APU pour climatiser l'avion le plus tot possible.
- en mettant les PACKS sur OFF 3 minutes avant la mise en route
(afin d'avoir le maximum d'air dans les collecteurs).
Si l'alarme ENG 1(2) START VALVE FAULT (START VALVE NOT OPEN)
apparaît, appliquer la procedure ECAM, puis attendre 1 minutes avant
de tenter un nouveau demarrage.
Si le defaut persiste appliquer la procedure DEMARRAGE REACTEUR PAR
OUVERTURE MANUELLE DE LA VANNE DE DEMARRAGE (TU 03.03.70.07).

04 MAR 02 - INFORMATION CABIN READY
Sur les avions equipes du CABIN READY (voir RCT informations
SECURITE-SAUVETAGE sous-type avion) cette information peut
apparaître a 2 emplacements differents sur l'ecran EW/D en
attendant la normalisation de la flotte:
1) Dans le memo T/O ou LDG: cette configuration est provisoire,
2) En memo partie droite: version definitive (voir TU 12.31.20.04).

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INFORMATION MATRICULE
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16 OCT 03 ) MEMENTO CARACTERISTIQUES DU F-GRXE A319-111 B5
* MTOW 64 T ** MZFW 57 T ** MLW 61T ** CFM 56-5 B5/P *
* ADR 3 RVSM : OUI * PERF FACTOR FMS : CCM-2,5 *
* ..... * VERSION EURO 135 *
* ..... * 3 PNC REGLEMENTAIRES *
* GSP : OUI * 6 SIEGES STRUCTURE *
* ..... *
* HF : NON * CARGO VRAC *
* ..... * DETECTION / EXTINCTION INSTALLEES *
* PRED W/S : OUI *
* ..... *
* ATSU : OUI *
* ..... *
DIVERS
*
* ..... *

PAS D INFORMATION DEGIVRAGE

PAGE : 003 TO FOLLOW...

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# Conclusion

- Same data in the 3 options
- Accurate levels of individual aircraft carried on board to be read by non expert:
  - Noise documentation in the AOM
  - Updating approval by the authority should bring minimal burden

