Docket No. SA-533

Exhibit No. 13F

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C.

EASA Presentation on ATR-42 Certification

(8 Pages)

European Aviation Safety Agency

ATR 42-320 CERTIFICATION BASIS

ATR42-320 Model:

- High wing, short range, narrow fuselage twin turbo prop aircraft
- Equipped with 2 Pratt & Whitney Canada PW121 engines and 2 Hamilton Standard 14 SF-5 propellers (4 blades)
- MTOW: 16170 Kg (Basic a/c); 16720 Kg (Mod 0951); 17070 Kg (Mod 4076)
- Four flaps positions: 0, 15, 30 and 45 (Emergency only)
- Max Operating Speed V_{MO} = 250 KIAS; $V_{fe\ flaps\ 15}$ = 160 KIAS (170 with Mod 1790); Max ceiling 25000 Feet

EASA TC

- Original French DGAC TC 176 (EASA Grandfathered):
  - ATR42-200 and ATR42-300 certified on 24th Sep 1985.
  - ATR42-320 Certified on 04th March 1988. Same certification basis than ATR42-200/-300
- Ref. application date for DGAC-F/EASA certification: 02nd Feb 1982
- Current TC: EASA.A.084. EASA TCDS's A.084 Iss 02, 21st Dec 2007

FAA TC

- A53EU. Current TCDS's A53EU Rev 17, Nov 17th 2008
- FAA certification date: Aug 25th, 1988

European Aviation Safety Agency

ATR 42-320 CERTIFICATION BASIS

Original DGAC-F Type Certification

- A National certification process conducted by French DGAC (State of Design):
  - JAR 25 as applicable common airworthiness requirements
  - Making use of JAA certification methodology / practices.

- Rest of JAA National Authorities issued their own national TCs on the basis of DGAC-F TC 176 well by:
  - Acceptance / automatic recognizition of the original TC or
  - By conducting their own type certification through a validation process.

NOTE: The JAA had not yet developed their Implementation Certification Procedures so it was not possible to conduct a joint certification process led by a JAA certification team that enabled Authorities of Member States to issue their own National TC's on the basis of a single technical assessment.

European Aviation Safety Agency

ATR 42-320 CERTIFICATION BASIS

TC Validation processes performed by non JAA countries

- In the most simple cases by automatic acceptance of original DGAC TC 176 (France as State of Design), OR .
- By performing under a valid working arrangement a type validation process (concurrently or post TC) based on:
  - Original TC / certification process by State of Design.
  - Technical assessment of the type design.
  - Specific National Airworthiness requisites
  - Identification of regulatory differences and definition of:
    - Compliance items retained by the VA
    - Compliance items delegated to the CA
- FAA / DGAC-F Case:
  - Current bilateral agreement (USA/France) is dated on 14 May 1996 and its associated IPA's on 24 Aug 2001
  - Before this date: agreement relating to reciprocal acceptance of airworthiness certification dated 26 Sep 1973.

European Aviation Safety Agency

ATR 42-320 CERTIFICATION BASIS

DGAC-F/EASA Cert. Basis for ATR42-200/300/320

- JAR 25, including French National Variants at Change 8, including amendment 81/2

- French Special Conditions:
  - B1 (T.O. Path *) – B2 (High Speed Charact. *) – B3 (Landing/Climb All engines operating)– B4 (Static Lateral Stability) – B5 (Stickpusher)
  - BB1 (Automatic T.O. Power Control System)
  - C3 (Press. Cabin Loads*) – C4 (Damage Tolerance/Fatigue Ev.*)– C5(Design Airspeeds)– C6 (High Lift Devices) – C7 (Propeller Debris)
  - D1 (Doors*) – D2 (Fire Extinguishers*) –D3 (Cargo Comp. Fire Detection*) –D4 (Test for Press. Cabins)
  - E1 (Propellers *)
  - F1 (Miscellaneous Equipments *)
  - G1 (ICA's *)

(Those SC's marked with * were issued i.a.w. FAR 25 amendment 25-54 requisites. FAR 25-54 was the FAR 25 amendment reference for ATR42-200/300/320 as per FAA TC A53EU)

European Aviation Safety Agency

ATR 42-320 CERTIFICATION BASIS

DGAC-F/EASA Cert. Basis for ATR42-200/300/320 (Con't)

PLUS:

- JAR-AWO Subpart 2 Change 1 for CAT II

- And the following Equivalent Level of Safety Findings:
  - For COMBI conf (Mod 0244 or 0755): JAR25.807(c) number of Pax; JAR25.807(d) Emergency Exit in event of ditching
  - JAR 25.865 fire resistance of forward upper engine fitting.

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ATR 42-320 CERTIFICATION BASIS

JAR 25.699 Lift and drag device indicator

a) There must be means to indicate to the pilots the position of each lift or drag device having a separate control in the cockpit to adjust its position. In addition, an indication of unsymmetrical operation or other malfunction in the lift or drag device systems must be provided when such indication is necessary to enable the pilots to prevent or counteract an unsafe flight or ground condition, considering the efects on flight characteristics and performance.

b) There must be means to indicate to the pilots the take-off, en-route, approach and landing lift device position.

c) If any extension of the lift and drag device beyond the landing position is possible, the control must be clearly marked to identify this range of extension.

As per JAR 25 Change 8, 30th Nov 1981.

JAR 25.699 content identical to FAR25.699 as per Amdt. 25-23 Effective 08th May 1970.

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ATR 42-320 CERTIFICATION BASIS

ATR42-320: Aircraft Design Mods mandated by DGAC-F/EASA AD's after the ATR72-212 accident at Roselawn (31st Oct 94):

- **DGAC-F 1996-208-067(B)R1 (FAA AD 96-09-28)**
  - AFM revision (icing conditions; severe icing conditions: visual identification and escape procedures) and
  - Installation of extended (wider) boots on outer leading edges per Mod 4222. Mod 4222 is embodied prior to delivery on MSN 394 and subsequent.
- **DGAC-F 1999-165-077(B) R1 (FAA AD 2000-18-05):**
  - Reinforce crew awareness and vigilance by embodying ATR Mod 5008 " Modification of ICING light flash logic" and
  - Replace median wing boots by extended boots (Mods 4993 and 4998) and
  - Install boots on the metallic leading edge (Mods 8209 and 8211)
- **EASA AD 2007-0179 (FAA AD 2008-13-19) Repetitive inspections of the three (pilot, co-pilot and standby) Pitot Probe Heating Resistances and final replacement of the three low current sensors (Mod 05469).**
- **EASA AD 2009-0170 install Aircraft Performance Monitoring (APM) System on ATR42/72 aircraft to improve flight crew situation awareness and identification of severe icing conditions.**

European Aviation Safety Agency

ATR 42-320 CERTIFICATION BASIS

ATR42-320: AFM changes mandated by DGAC-F/EASA AD's after the ATR72-212 accident at Roselawn (31st Oct 94):

- **DGAC-F 1999-014-076 R2 (FAA AD 99-09-19) AFM revision to reduce the hazards associated with inadvertent encounter with severe icing conditions. Equivalent DGAC-F 1999-015-40 R2 for ATR72's:**
  - **It merged and integrated past AFM modifications (related with icing/severe icing conditions) already requested by previous AD 1996-208-067. In addition the following AFM improvements were introduced:**
    - Reinforce severe icing detection by defining criteria to be used by the flight crew related with unusual aircraft performance degradation.
    - To increase speed during severe icing cionditions exit maneuver.
    - Editorial improvements in AFM to stress the need for the crew to inmediately exit severe icing conditions as soon as identified.
  - **Current ATR42/72s AFMs are i.a.w these AD's.**
- **DGAC-F 2001-044-083(B) (equivalent DGAC-F 2001-045-054 exists for ATR72's) took into account the requirements of FAA AD 99-19-10:**
  - **Crew to activate wing and tail de-icing systems as soon as ice accretion is detected on the aircraft and as long as aircraft is not exited from atmospheric icing conditions**
  - **Current ATR42/72s AFMs are i.a.w these AD's**