



Accident Investigation

Annual update
17 April 2008



Interface with AIBs in 2007 -Generalities

- **Interface is improving**
 - ★ **ECAC interface**
 - ★ **Debriefing on investigations**
- **Good interaction on the phone**
- **Access to data/meetings more difficult due to**
 - ★ **National regulations**
 - ★ **Implications of a draft publication outside the scope of an investigation**
 - ★ **Lack of trust**
 - ★ **No defined status**
- **Reporting**
 - ★ **Language issues**
 - ★ **ADREP usage**
 - ★ **Document format shall help the identification of SR**



Management of Investigations, the need

- **Initial notification**
 - ★ **ECCAIRS format for data exchange and storage**
- **Participation to investigations**
- **Safety Recommendations**
 - ★ **Factual data should be made available to a level that enable a clear and unambiguous understanding of the recommended action**
 - ★ **Sharing of the follow up given to recommendations**



2007 activity



Investigation activity 2007

- **A320 PR-MBK 17.07.2007 Sao Paulo**
 - ★ **Previous events and questions**
 - ★ **Clarifications to ANAC and the CENIPA**
 - AD, ASR, critical analysis of the design
 - ★ **Simulator evaluation by the Flight Panel**
 - ★ **Temporary revision of the FCOM SOP**
 - ★ **4 Safety Recommendations related to design**
 - ★ **No report issued**



European Aviation Safety Agency



**DHC8-400, LN-RDS
Vilnius 11-09-2007**

Metallurgical
examination
made in
Denmark



•DHC8-402Q, LN-RDK
Aalborg 09-09-2007
•DHC8-402Q, LN-RDI
Copenhagen 27-10-2007



**DHC8-400, D-ADHA
Munich 22-09-2007**




**13-09-2007
EAD 2007-0252**

**16-10-2007 AD
2007-0272**



TC +
Bombardier

EASA	AIRWORTHINESS DIRECTIVE
	AD No : 2007-0272
	Date: 16 October 2007
No person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of that Airworthiness Directive unless otherwise agreed with the Authority of the State of Registry.	
Type/Approved Holder's Name :	Type/Model (Designation/Code) :
Bombardier, Inc.	DHC-8-400 series aircraft
TODS Number: EASA MA 191; Canada A-142	
Foreign AD: Transport Canada Civil Aviation (TCCA) Airworthiness Directive (AD) No. CP-2007-20 (R1), issued 11 October 2007	
Supersedes: This AD supersedes EASA Emergency AD 2007-0252, C, dated 13 September 2007.	
NOTE: For aircraft operated under EU regulations, the requirements of this AD take precedence over those contained in TCCA AD CP-2007-20 (R1).	
ATA 32	Landing Gear - Main Landing Gear System & Parts - Inspection
Manufacturer(s):	Bombardier, Inc.
Applicability:	Model DHC-8-401 and DHC-8-402 aircraft, all serial numbers. Note: The TCCA AD applies also to Model DHC-8-402 aircraft, as this Model has not been validated in Europe at this time, no aircraft operated under EU regulations and/or registered in EU Member States are affected. For that reason, this AD cannot be applied to those aircraft.
Reason:	The most recent of main landing gear collapse on Bombardier Model DHC-8-402 series aircraft have been reported, occurring shortly after touchdown. Main landing gear collapse during landing can result in loss of control of the aircraft. To address and correct the unsafe condition described above, Transport Canada Civil Aviation (TCCA), the responsible authority of the State of Origin for the affected type design, issued Emergency Airworthiness Directive (EAD) CP-2007-20 on 12 September 2007. That directive has now been revised to extend the time compliance in paragraph C.2 (3) months in addition to 600 flight hours, to add new paragraph C.3 in order for repair estimator which has accumulated less than 4 000 landings or 2 years since new and to add new paragraphs B.2 and C.4 to require that the responsible inspectors be specifically performed and terminating action becomes available. This EASA AD requires those same actions, except for ferry flights, where reference is made to Appendix Flight Manual (AFM) Supplement No. 24. The provisions in that



Dash 8 accidents review

➤ Implemented actions

- ★ **12-09-2007 SAS Fleet grounded and CoA revoked**
- ★ **13-09-2007 EAD 2007-0252**
- ★ **20-09-2007 flight ban lifted gradually as each plane is inspected.**
- ★ **04-10-2007, 90% of the Bombardier fleet back into service**
- ★ **16-10-2007 AD 2007-0272 superseding EAD 2007-0252**
- ★ **27-10-2007 SAS Fleet grounded, CoA dismissed**



Investigation tasks

➤ Factual data

- ★ Metallurgical examination of Aalborg and Vilnius events made in a Danish laboratory
- ★ AFM emergency procedures review

➤ Publications

- ★ LN-RDK preliminary report on 25.09.2007 (Danish AIB)
- ★ LN-RDS preliminary report on 04-10-2007 (Lithuanian AIB)
- ★ LN-RDI preliminary report on 29.10.2007 (Danish AIB)
- ★ LN-RDI interim report on 30.10.2007 (Danish AIB)
- ★ LN-RDI interim report on 03.11.2007 (Danish AIB)



Investigation activity 2007

- **DHC6 F-OIQI 09.08.2007 Moorea**
 - ★ **9 oct. 2007 Urgent Safety recommendation published**
 - ★ **6 Dec. 2007 preliminary report**
 - ★ **SR, airworthiness coordination (18/12) and, fleet survey (20/01), maintenance manual review**



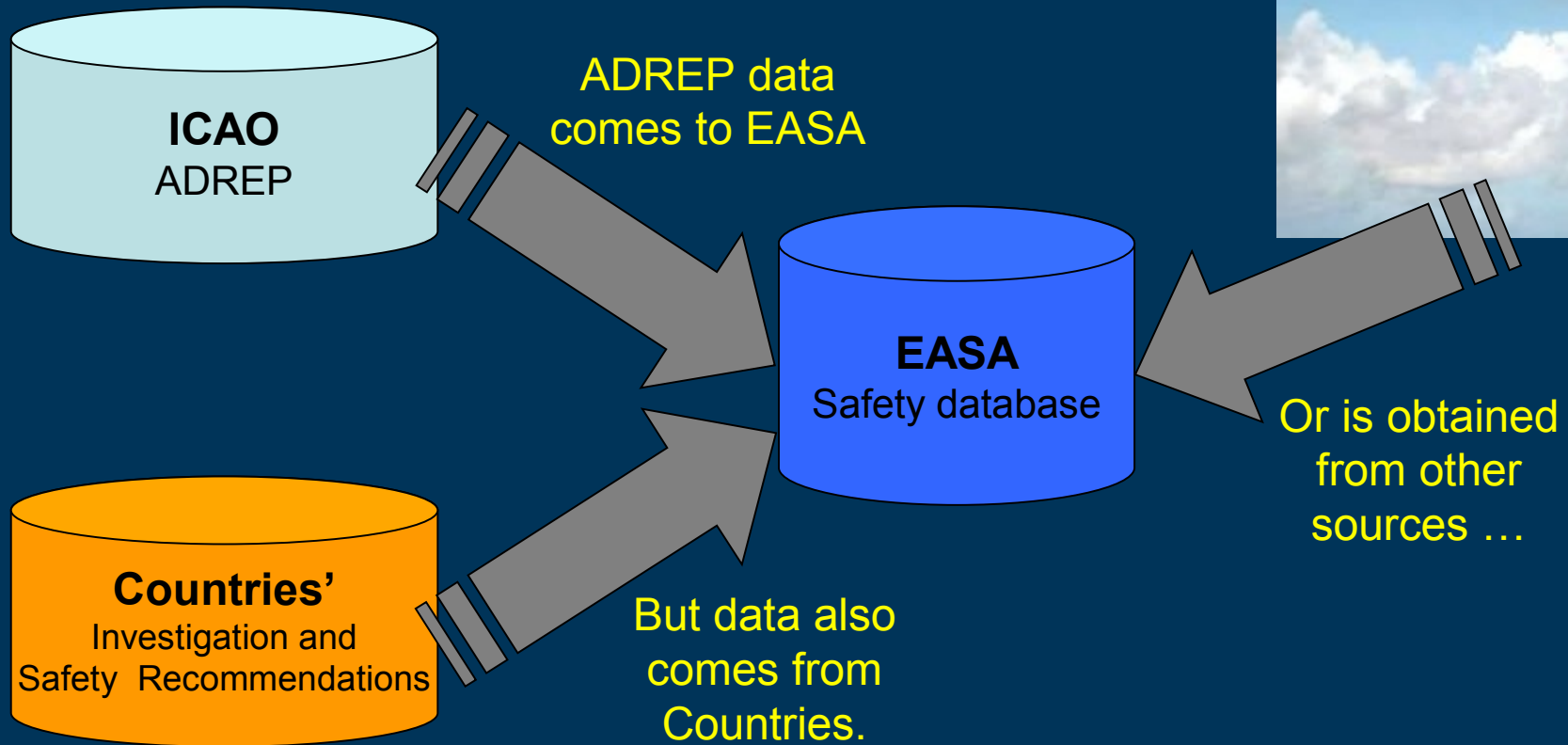
EASA development

➤ Flight Data Analysis

- ★ Read out and validation done by the AIB
- ★ Exploitation and reporting for internal use
- ★ Visualization for various EASA experts not on site
- ★ Confidentiality is a key factor



Reporting: Origin of data



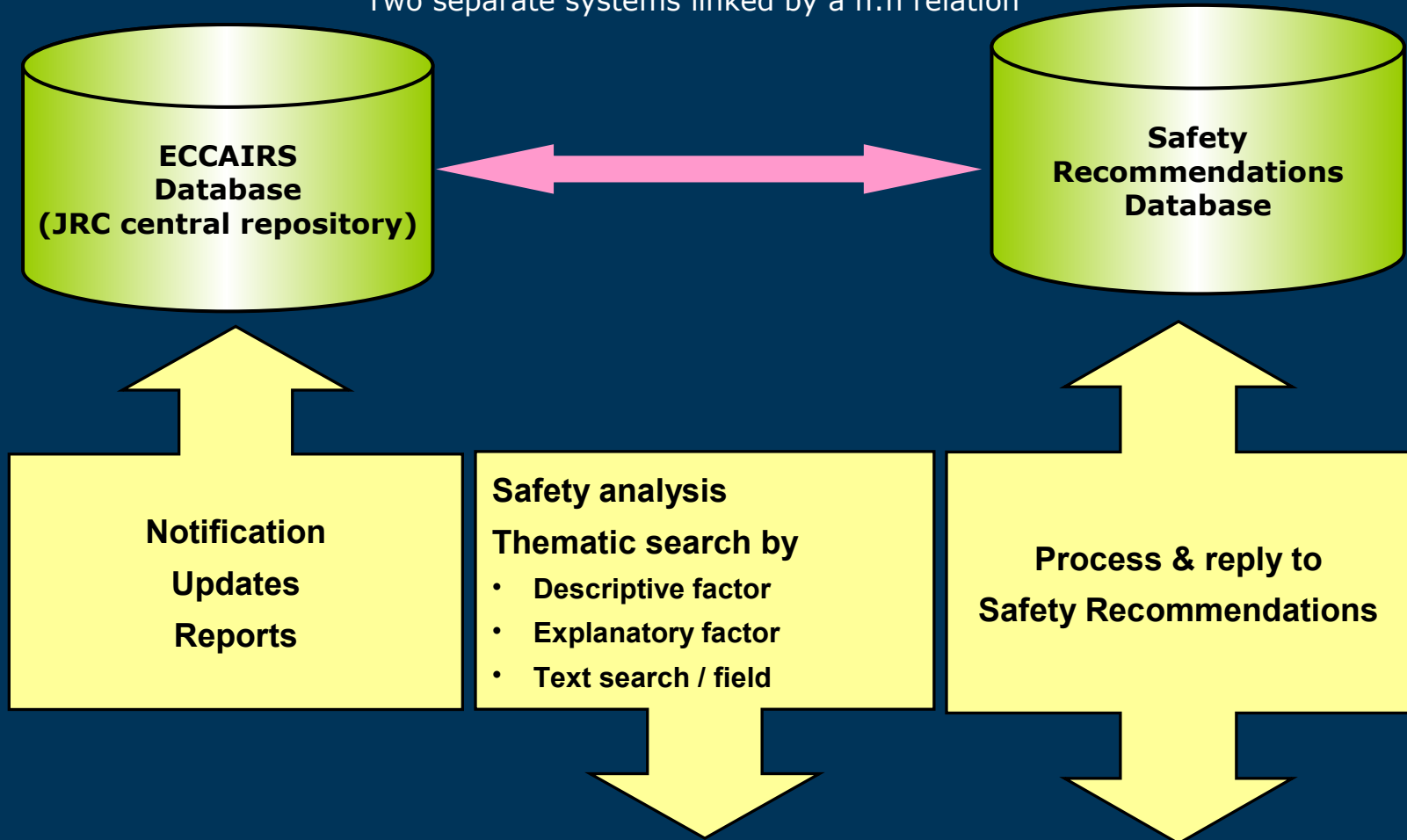


Improving Eccairs reporting

- **Eccairs is the central system to search for occurrences and provide statistics**
 - ★ **Extended search capabilities**
 - ★ **Better handling of language issues**
- **Attachment of reports available in Eccairs database**
- **The database will be connected to the future SR database**
- **Get the benefit of all incoming reports**
 - ★ **Coding of Eccairs occurrences subcontracted to an external company**



Two separate systems linked by a n:n relation

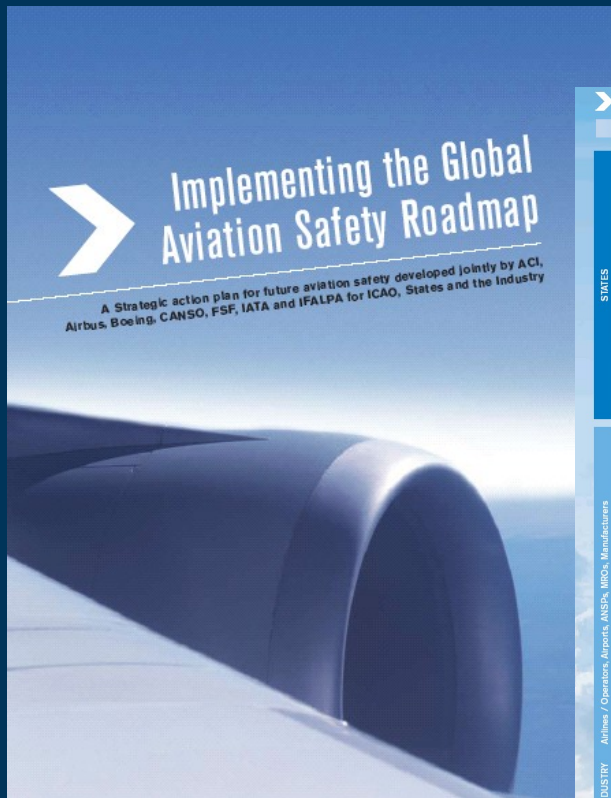




Safety Initiatives perspectives



In line with with the ICAO Global Aviation Safety Roadmap



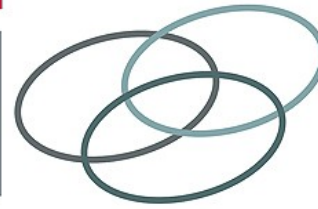
Implementing the Global Aviation Safety Roadmap

A Strategic action plan for future aviation safety developed jointly by ICAO, Airbus, Boeing, CANSO, FSF, IATA and IFALPA for ICAO, States and the Industry

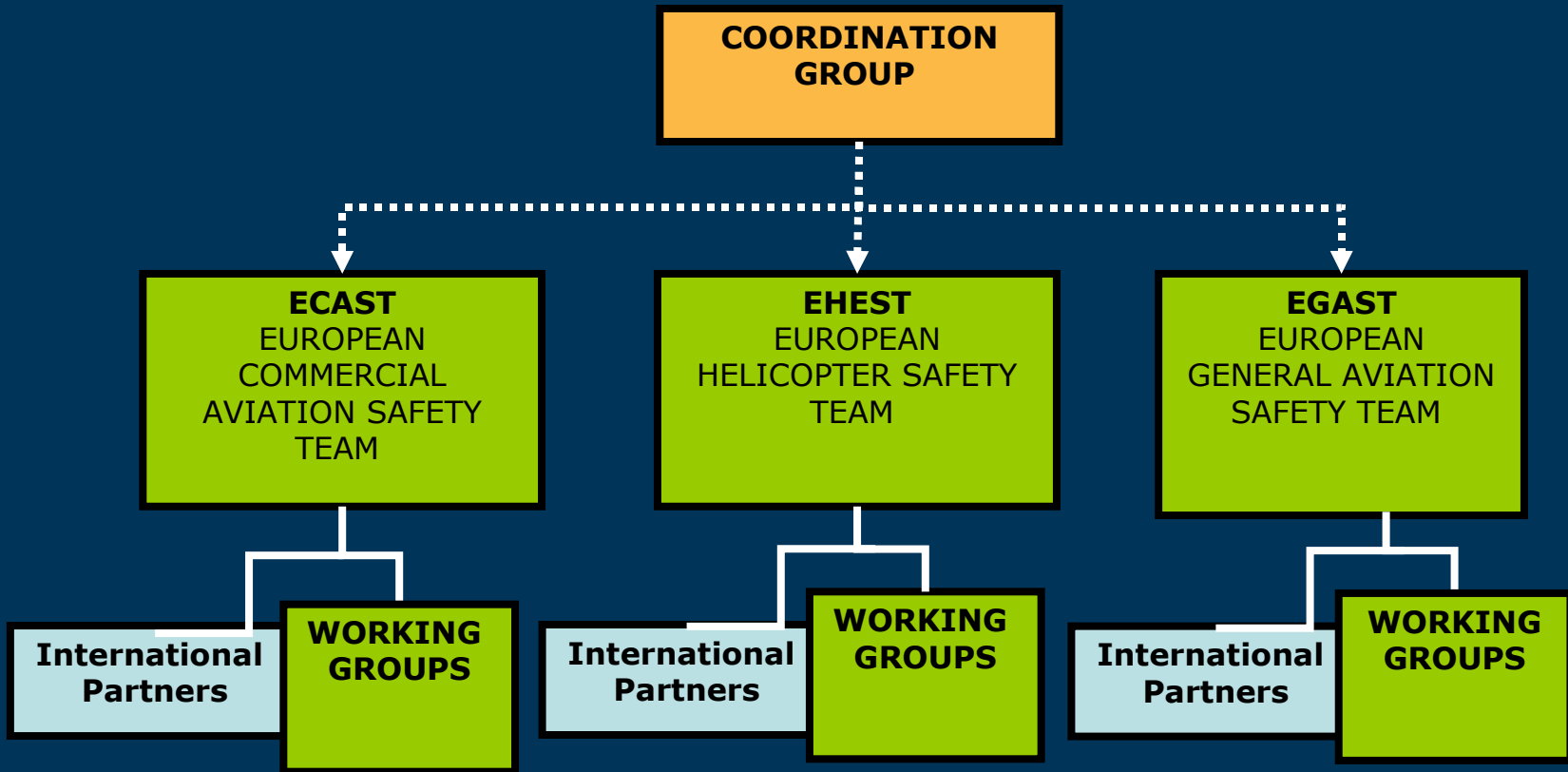




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European Strategic Safety Initiative





ECAST has Developed a new Three Phase Process





ECAST Work Priorities Areas

1. Ground Safety	<i>Selected</i>
2. Runway Safety	
3. SMS & Safety Culture	<i>Selected</i>
4. Flight Crew Performance	
5. Loss of Control (General)	
6. Approach & Landing	
7. Aviation System Complexity	
8. Fire, Smoke and Fumes	
9. Air-Ground Communications	
10. Mid Air Collision	
11. CFIT	
12. Icing	
13. Bird Strike	
14. Loss of Control (Weight & Balance)	
15. Air Navigation	
16. Airworthiness (Maintenance & Design)	
17. Maintenance (HF)	
18. Automation	



ECAST Phase 2 (Started 2008)

- **ECAST has set up a Working Group on Safety Management Systems, closely cooperating with EASA Rulemaking**
- **WG on Ground Safety will be launched in the 2nd part of 2008**



Conclusion

- **The conduct of investigations is the sole responsibility of Member States**
- **Investigations data are required, due to EASA's responsibilities**
- **Current situation**
 - ★ **Good will from technical investigators**
 - ★ **Interface with the industry**
- **Objective: secure an agreement allowing the qualified people to share available facts and act upon**