Lessons learned from accident investigation

Dubai 9 December 2015

Capt. Elias Nikolaidis
Chief Air Accident Investigator
GCAA
AIR ACCIDENT INVESTIGATION SECTOR

INVESTIGATES ALL ACCIDENTS IN THE UAE

PARTicipates in investigations abroad

Issues reports & safety studies

Safety recommendations
Air Accident Investigation

MENASASI 2015 Seminar and Workshops

The objective of the air accident and incident investigation is to enhance aviation safety by determining the causes and contributing factors related to the occurrence and issuance of safety recommendations to prevent reoccurrence. Investigations are conducted in accordance with UAE Civil Aviation Law No. 20 of 1991, in compliance with the Civil Aviation Regulation (CAR) Part VI Chapter 3, and in conformity with Annex 13 to the Convention on International Civil Aviation. It is not the purpose of the investigation activity to apportion blame or liability.

Reports

1. Accident/Incident Investigation Reports (AIFN - Air Investigation File Number)
2. Safety Studies
3. Safety Recommendation Reports
4. Annual AASIS Safety Reports

Publication/Activities:

1. Memorandum of Understanding
2. Meetings and Seminars
3. Training and Workshop
4. The 'Investigator' Magazine
5. AASIS Publications
6. International Reports and Studies
7. Related Links

24 hour Duty Investigator Contact Details:

Immediate reporting of an Accident/Serious Incident:
Hotline: +971 50 6414667
E-mail: aai@gcaa.gov.ae

General Enquiries:
Director GCAA AASIS
P. O. Box: 6558, Abu Dhabi
United Arab Emirates
TEL: +9712 444 7666
FAX: +9712 448 1599
Email: acfi@gcaa.gov.ae

To Submit a Report of Safety Incident: ROSI
To Submit a Voluntary Report: VORSV

Other Information:
View/Upload Documents

Latest News: (View all news)
## Accident / Incident Investigation Report

<table>
<thead>
<tr>
<th>Reference No</th>
<th>Registration No</th>
<th>Occurrence</th>
<th>Aircraft Type</th>
<th>Location</th>
<th>Damage</th>
<th>Occurrence Date</th>
<th>Occurrence Category</th>
<th>Injury Index</th>
<th>Report Status</th>
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</thead>
<tbody>
<tr>
<td>AIFN/0033/2011 A6-EMH</td>
<td>Boeing 777-200, A6-EMH, Paris, France</td>
<td>Airplane</td>
<td>Boeing 777-200</td>
<td>Moscow Domodedovo Airport</td>
<td>Minor</td>
<td>05/Mar/2011</td>
<td>Incident</td>
<td>None</td>
<td>Final</td>
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<tr>
<td>AIFN/0033/2014 VQ-BOC</td>
<td>Airbus A321-231, VQ-BOC, Group East</td>
<td>Airplane</td>
<td>Airbus A321-231</td>
<td>Dubai International Airport</td>
<td>Minor</td>
<td>17/Feb/2014</td>
<td>Accident</td>
<td>Serious</td>
<td>Final</td>
</tr>
<tr>
<td>AIFN/0015/2013 A6-MSM</td>
<td>Agusta 109S, A6-MSM, Helicopter</td>
<td>Helicopter</td>
<td>Agusta 109S</td>
<td>Al Ain International Airport</td>
<td>Minor</td>
<td>31/Dec/2013</td>
<td>Incident</td>
<td>None</td>
<td>Final</td>
</tr>
<tr>
<td>AIFN/0022/2012 A6-Ill</td>
<td>Airbus A320-232, A6-Ill, Pilots</td>
<td>Airplane</td>
<td>Airbus A320-232</td>
<td>Abu Dhabi</td>
<td>None</td>
<td>16/Nov/2012</td>
<td>Serious Incident</td>
<td>None</td>
<td>Final</td>
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<td>AIFN/0035/2013 A6-EHF</td>
<td>Airbus A340-800, A6-EHF, Aeroplane</td>
<td>Airplane</td>
<td>Airbus A340-800</td>
<td>Over International Waters after Passing Colombo FIR and Entering Melbourne FIR</td>
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<td>03/Feb/2013</td>
<td>Serious Incident</td>
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<td>Final</td>
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<td>AIFN/0016/2012 A6-ADB</td>
<td>DHC-8-315Q, A6-ADB, Airplane</td>
<td>Airplane</td>
<td>DHC-8-315Q</td>
<td>Abu Dhabi, United Arab Emirates</td>
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<td>09/Sept/2012</td>
<td>Incident</td>
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<td>Final</td>
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<tr>
<td>AIFN/0010/2014 AP-RBA</td>
<td>Hawk Beechcraft 400XP, AP-RBA</td>
<td>Airplane</td>
<td>Hawk Beechcraft 400XP</td>
<td>Al Maktoum International Airport, Dubai</td>
<td>None</td>
<td>23/May/2014</td>
<td>Serious Incident</td>
<td>None</td>
<td>Final</td>
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</tbody>
</table>
LESSONS LEARNED FROM OTHERS

NTSB (USA)

AAIB (UK)

ATSB (Australia)

AAIASB (Greece)
Helicopter Accident number decline over the last 10 years but no reduction of fatal accidents
Crash fire and blunt force trauma
FAA issued life saving rules in the 1980s & 1990s
US helicopter fleet in the end of 2014
Only 16% included crash-resistant fuel systems
Only 10% had energy absorbing seats.
UNITED STATES OF AMERICA

The Rotorcraft Occupant Protection Working Group
Loss of Control Sundance Helicopters, AS350-B2, N37SH
Safety issues identified:

- Improper reuse of degraded self-locking nuts.
- Maintenance personnel fatigue.
- Need for work cards with delineated steps.
- Lack of human factors training for maintenance personnel.
Loss of Control Sundance Helicopters, AS350-B2, N37SH

Safety Recommendations:

- Establish duty-time regulations for maintenance personnel
- Encourage operators and manufacturers to develop and implement best practices for conducting maintenance.
- Require that personnel performing maintenance or inspections receive initial and recurrent training on human factors (the causes of human error, including fatigue, …)
AAIB (UNITED KINGDOM)

Events over last 10 years
Safety Recommendations/Safety Actions
Impact of these Events
Lessons Learned for Accident Investigation
Impact

CAA Safety Review Feb 14
Airbus helicopters
Helicopter Terrain Awareness and Warning System
Rig landing systems
Survivability
Lessons Learned

- Inshore water CVFDR recovery
- Underwater search and recovery plan
- Use of press statements and special bulletins
- Technical investigation work – time consuming and expensive
- Effect of grounding aircraft; Oil and Gas risks
- Understanding the culture of helo ops
- Dealing with survivors and bereaved next of kin expectations
Light utility helicopters safety

Equipment improvements
1.1 helicopter accidents per year

Number of accidents in 2002 2003 (same Operator)

CAA Oversight

Heliports oversight, risk assessment, equipment

Operator’s training efficiency

Helicopter equipment (ELT, search lights, CVR)
8 Investigation reports involving helicopters
(2008 – 2012)

20 Safety Recommendations
11 to the GCAA, 8 to Operators, 1 to an Airport

22 Safety Actions Taken
20 Safety Recommendations proposed changes to GCAA Regulations
  GCAA Oversight
    GCAA SMS acceptance process
    UAE ELT interface
  Offshore helideck requirements, certification & oversight
  Training requirements & processes
THE FUTURE
Thank you for Listening