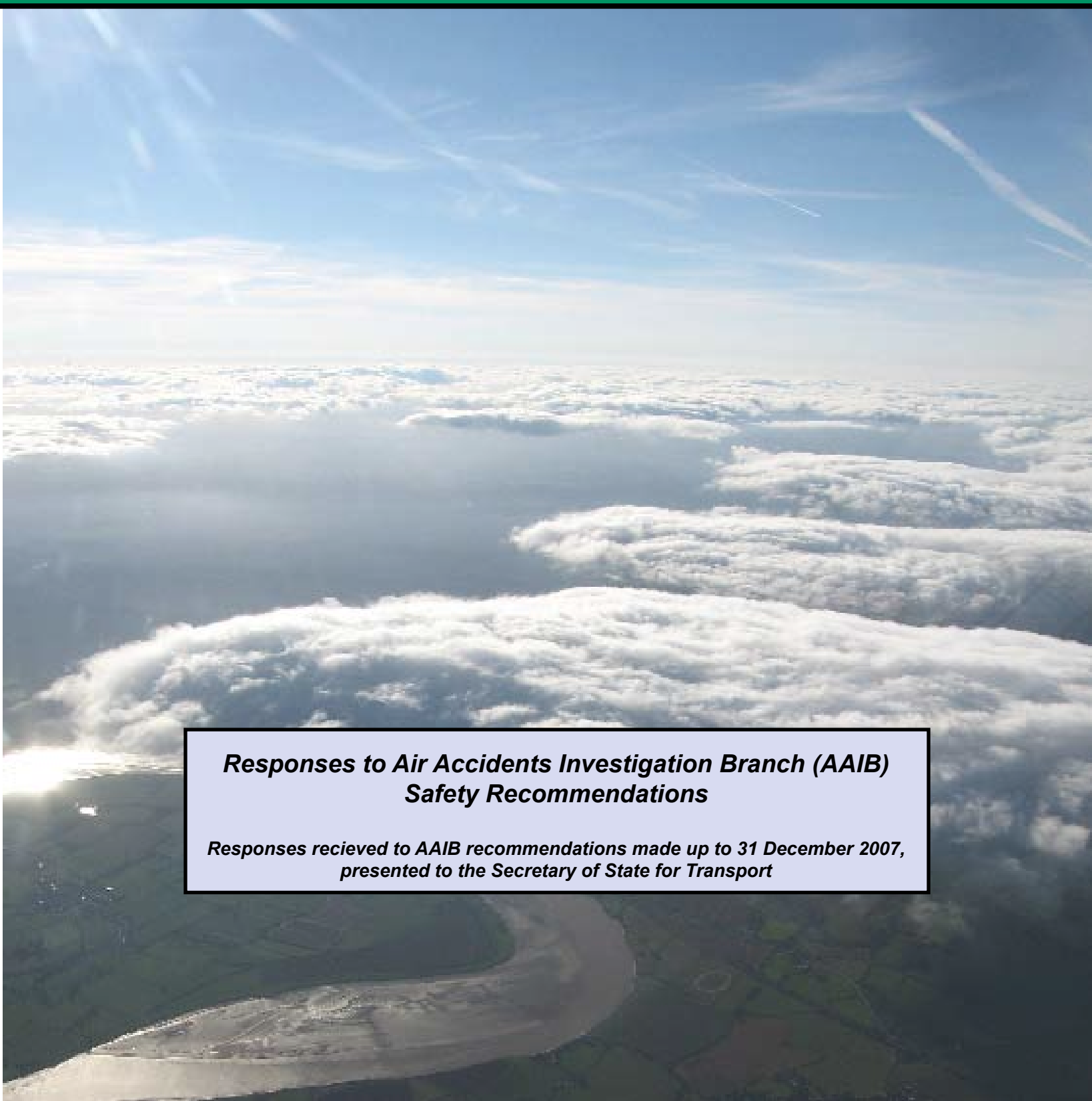
Air Accidents Investigation Branch

Progress Report 2008



Responses to Air Accidents Investigation Branch (AAIB) Safety Recommendations

Responses recieved to AAIB recommendations made up to 31 December 2007, presented to the Secretary of State for Transport

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Foreword

The Air Accidents Investigation Branch (AAIB) is the part of the Department for Transport responsible for the investigation of all civil aircraft accidents and serious incidents (collectively referred to as 'accidents' in this document) occurring in or over the United Kingdom. Its authority is enshrined in the Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996 and its purpose is 'to improve aviation safety by determining the causes of air accidents and serious incidents and making safety recommendations intended to prevent recurrence'. The AAIB reports directly to the Secretary of State for Transport on safety matters.

The Civil Aviation Authority (CAA) Safety Regulation Group's (SRG) role is to ensure that UK civil aviation standards are set and achieved in a co-operative and cost effective manner. Until recently the SRG had to satisfy itself that aircraft were properly designed, manufactured, operated and maintained; that airlines were competent; that flight crews, air traffic controllers and aircraft maintenance engineers were fit and competent; that licensed aerodromes were safe to use and that air traffic services and general aviation activities met required safety standards. They continue to fulfil most of these functions but, in September 2003, the responsibility for certification and continued airworthiness of aircraft was transferred to the European Aviation Safety Agency (EASA). Therefore AAIB recommendations relating to airworthiness are now directed to the EASA.

Accident investigation and safety regulation are clearly different and the two functions are deliberately kept independent from each other. However, the evaluation of the findings of an accident investigation and the determination of the need for, and the initiation of, appropriate action to maintain and enhance safety is an important part of safety regulation. Thus a good working relationship between the AAIB, the CAA and the EASA is essential, while in no way jeopardising the independence of the accident investigation.

Effective liaison has been maintained between the AAIB, the CAA and the EASA, which has been particularly useful in the immediate aftermath of any accident. However, the formal procedure by which the AAIB identifies and conveys to the CAA, the EASA or other bodies, matters which it believes require action, is by means of Safety Recommendations.

Safety Recommendations can be made at any stage as the AAIB investigation progresses. Both the CAA and the EASA have formal procedures for the receipt and evaluation of such recommendations and initiation of necessary action.

The CAA is informed of all AAIB Safety Recommendations and has, until now, responded to the AAIB, in the form of a Follow-up Action on Occurrence Report (FACTOR), on all Safety Recommendations, regardless of whether they were the action addressee. In future, however, the CAA will only formally respond to the AAIB with a FACTOR if a Safety Recommendation is specifically addressed to them. They have assured the AAIB, however, that they will continue to react appropriately to any Safety Recommendation if they believe it is in the interests of UK aviation safety.

Historically, responses to the Air Accidents Investigation Branch's recommendations have been published by the Civil Aviation Authority in their annual Progress Report on AAIB recommendations under the cover of a Civil Aviation Publication (CAP). With the

shift of airworthiness responsibilities, however, it has become more appropriate for the AAIB to take responsibility for reporting on the responses to its recommendations regardless of the target authority or organisation. The first AAIB Progress Report was published in March 2006. This fourth report details the responses received to AAIB Safety Recommendations made up to and including 31 December 2007.

The Report

This is the fourth annual Progress Report on Safety Recommendations submitted to the Secretary of State by the Air Accidents Investigation Branch (AAIB). It contains all the recommendations made by the AAIB in 2007 including the responses to those recommendations received up to and including 30 June 2008 and those recommendations categorised as open from previous years where significant additional information has been received.

The recommendations are grouped into eight sections:

1. Aeroplanes 5,700kg MTWA and above
2. Aeroplanes above 2,250kg and below 5,700kg MTWA
3. Aeroplanes 2,500kg MTWA and below
4. Microlights
5. Rotorcraft 5,700kg MTWA and above
6. Rotorcraft above 2,250kg and below 5,700kg MTWA
7. Rotorcraft 2,500kg MTWA and below
8. Others

Within each section the accidents are listed by event date in reverse chronological order. This date should be taken as the date the recommendation was made.

The Status of responses to safety recommendations, as determined by the AAIB, have been divided into 6 categories.

1. Accepted - CLOSED (appropriate action implemented or planned but not yet implemented)
2. Rejected - OPEN (further action required)
3. Rejected - Rejected for acceptable reasons not known at the time of publication (no further AAIB action)
4. Partially accepted - OPEN
5. Response awaited - OPEN
6. Superceded - CLOSED

Statistics

Recommendations made in 2007 and status:

Number	Status Category					
	1 Accepted CLOSED	2 Rejected OPEN	3 Rejected	4 Partially accepted OPEN	5 Response awaited OPEN	6 Superceded CLOSED
114	50	0	6	2	56	0
% of total	44	0	5	2	50	0

90% of recommendations receiving a response have either been accepted or partially accepted.

Note: 14 Safety Recommendations were allocated with recommendation numbers of which 12 were withdrawn and 2 no longer applicable before issue

Recommendations made in 2007 by Addressee:

Addressee	Number
Airbus	11
AOPA	2
Aviance UK	2
BAE Systems	2
BGA	3
BHPA	1
BMAA	2
Bombardier Aerospace	1
British Airways	3
CAA	32
DG Flugzeubau GmbH	1
EASA	24
Embraer	1
Eurocopter	3
FAA	6
Gatwick Airport Ltd	1
Headcorn Aerodrome	2
Heathrow Airport Ltd	1
ICAO	6
Jordanian CAA	1
LAA	2
London Southend Airport	1
Luftfahrt-Bundesamt	2
Mahan Air	2
Maritime Coastguard Agency	1
PFA	2
Raytheon Aircraft Co	1
Ulster Hang Gliding and Paragliding Club	1

Note: Please note that a number of Safety Recommendations are made to more than one Addressee

Aeroplanes > 5,700kg MTWA or above

Embraer 145-EP	On Approach to Manchester	25 September 2001	Incident

AAIB Bulletin: 11/2005
FACTOR: F41/2005

Synopsis

The aircraft was carrying out a scheduled flight from Aberdeen to Manchester. The commander, who was the handling pilot, reported that during the flight the weather radar was displaying weak returns of cumulonimbus cloud activity, but he manoeuvred the aircraft in order to avoid the affected areas, primarily by visual means.

He accepted radar vectors to position the aircraft downwind for the landing runway. Just as the aircraft entered cloud, a lightning strike occurred. The commander subsequently reported that there was neither turbulence nor significant precipitation at that time. Recorded data indicated that the aircraft was close to Flight Level (FL) 70 at the time with a low thrust setting.

The first officer informed the commander that he had observed a left engine over-temperature indication. Within 5 to 10 seconds of the strike, both crew members noted that the left engine operating parameters were decreasing rapidly. They were not aware of any warning or caution indications at the time.

A distress call was broadcast and checklist procedures for both engine failure and single engined approach were carried out. An uneventful single engined landing then took place at 1415 hrs.

SAFETY RECOMMENDATION - 2005-094

It is recommended that, in order to minimise the risk of uncommanded shut-downs, EASA, FAA and the Centro Tecnico Aeroespacial (CTA) of Brazil in conjunction with aircraft and engine manufacturers should review and, if necessary, initiate appropriate research into the aero-thermal disruption of intake flow and other effects of lightning strikes on fuselage mounted turbine engines in order to establish whether there is a safety of flight issue that should be addressed by appropriate future rulemaking. They should also consider the application of any proposed rules to types currently in service.

Response

The EASA, in cooperation with the manufacturer and the Agencia Nacional de Aviacao Civil-Brazil have reviewed this issue.

During the review it was found that the susceptibility of the EMB-145 for lightning strikes is not dissimilar to the world fleet.

Furthermore, the statistical data on lightning strke damage has shown that, so far, there have been reported only 3 cases where a lightning strike and the resulting high temperature at the engine inlet caused an engine in-flight shut-down (IFSD). In these cases, according to the aircraft flight manual, the engine could have been re-started by the crew, in case of need.

The review did not show any dual engine IFSD occurrence in ERJ-145 aircraft or any other aircraft type with similar fuselage diameter, while it was also found that only smaller fuselage diameter are sucepable to dual engine In Flight Shut Down.

Based on these, the probability of an IFSD caused by a lightning strike was found to be well below the safety target for an IFSD, which is considered to be a minor event.

Moreover, the FADEC Engine control reacts exactly according to design and shuts down the engine in case of an Inter Turbine Temperature increase above limit. Any modification to this behaviour increased the risk of an engine not being shut down when needed (eg serious mechnical failure).

Nethertheless, the manufacturer is continuosly monitoring the lightning strike data in order to improve the comprehension of this phenomenon.

Status - Accepted - closed

Challenger	Birmingham Airport	4 January 2002	Accident

AAIB Formal Report: AAR 5/2004
FACTOR: F39/2004

Synopsis

Immediately after takeoff from Runway 15 at Birmingham International Airport the aircraft began a rapid left roll, which continued despite the prompt application of full opposite aileron and rudder. The left winglet contacted the runway shoulder, the outboard part of the left wing detached and the aircraft struck the fround inverted, structurally separating the forward fuselage. Fuel released from ruptured tanks ignited and the wreckage slid to a halt on fire; the Airport Fire Service was in attendance less than 1 minute later. The accident was not survivable.

Numerous possible causes for the uncontrolled roll were identified but all except one were eliminated. It was concluded that the roll had resulted from the left wing stalling at an abnormally low angle of attack due to flow disturbance resulting from frost contamination of the wing. A relatively small degree of wing surface roughness had a major adverse effect on the wing stall characteristics and the stall protection system was ineffective in this situation. Possible asymmetric de-icing by the Auxiliary Power Unit (APU) exhaust gas during pre-flight preparations may have worsened the wing-drop tendency.

N90AG's pilots should have been aware of wing frost during pre-flight preparations but the aircraft was not de-iced and the ice detector system would not have alerted them. It was considered that the judgement and concentration of both pilots may have been impaired by the combined effects of a non-prescription drug, jet-lag and fatigue.

Possible contributory factors were: the inadequate warnings on the drug packaging, Federal Aviation Administration (FAA) guidance material suggesting that polished wing frost was acceptable and melting of the frost on the right wing by the APU exhaust gas.

The investigation identified the following causal factors:

1. The crew did not ensure that N90AG's wings were clear of frost prior to takeoff.

2. Reduction of the wing stall angle of attack, due to the surface roughness associated with frost contamination, to below that which the stall protection system was effective.

3. Possible impairment of crew performance by the combined effects of a non-prescription drug, jet-lag and fatigue.

SAFETY RECOMMENDATION - 2003-054

It is recommended that the US Federal Aviation Administration, and all Authorities who follow FAA practice, delete all reference to 'Polished Frost' within their regulations and ensure that the term is expunged from Operations Manuals.

Response

We concur. The FAA is currently removing all references to provisions in Title 14 Code of Federal Regulations (14 CFR) parts 91, 125, and 135, sections 91.527(a), 125.221(a), and 135(a) respectively, that allow procedures to polish frost on aircraft surfaces before takeoff, via the rulemaking process. The FAA will publish the Notice of Proposed Rulemaking (NPRM) in the summer of 2008.

Status - Accepted - closed

Concorde Type 1 V102	**Initial climb London Heathrow Airport and in Cruise**	**13 June 2003**	**Incident**

AAIB Bulletin: 6/2004
FACTOR: F33/2004

Synopsis

On 21 June 2003, during the routine maintenance investigation of a reported defect, a short circuit condition was detected on the Fuel Quantity Indication wiring for fuel tank No 7. Damage was found to an associated wire bundle which had been caused by a localised fire within the area enclosed by the wing/fuselage fairing area aft of the main landing gear (zone 198) below fuel tank No 3. Fuel seepage from this tank, in the area of the chafed wire, had collected in a box section fairing support member and had been ignited, resulting from a short duration, low intensity fire. The ignition source for the fire was identified as a chafed wire for the main tank No 3 fuel pump, which carries 115V AC power, arcing against the aluminium fairing. It was possible that the chafing of this wire had been precipitated during the maintenance activity two years prior to the incident when this wiring had been disturbed. The fire probably occurred during a flight from LHR to JFK on 13 June 2003, although no indications were apparent to the flight crew at the time. Modifications have since been introduced to prevent the build up of fuel in the box section fairing support structure.

SAFETY RECOMMENDATION - 2004-019

It is recommended that the European Aviation Safety Agency (EASA) expedite the transcription by Agency the European Ageing Systems Co-ordination Group (EASCG) of the material in the FAA Advisory Circulars (ACs) produced by the Ageing Transport Systems Rulemaking Advisory Committee (ATSRAC), which gives guidance for operators and maintenance organisations on developing an electrical systems standard wiring practices manual, developing an effective wiring systems training programme and on changes to existing maintenance practices and analysis methods. This guidance should be applied to both in-service aircraft and new designs, to ensure adequate consideration is given to potential in-service deterioration of electrical wiring systems.

Response

Continuing its participation to the ageing systems rulemaking process, the EASA published NPA No 2007-01 on 19-03-2007, in which the issue of ageing wiring has been included.

Status - Accepted - closed

Boeing 737-86N	Manchester Airport	16 July 2003	Incident

AAIB Formal Report: 3/2006
FACTOR: F46/2006

Synopsis

G-XLAG, a Boeing 737-86N, with seven crew and 190 passengers on board, was undertaking a flight from Manchester Airport to Kos, Greece. Runway 06L was in use but the flight crew were not aware that this runway was being operated at reduced length. This was due to work-in-progress to remove rubber deposits at the far end of the runway, which was out of sight from the 06L threshold end as the runway was built over a slight rise in the ground. Due to a difference in interpretation of information passed between Air Traffic Control (ATC) and the flight crew, the aircraft entered the runway from holding point AG, rather than the expected holding point A, and the takeoff was conducted using a reduced thrust setting calculated for the assumed normal runway length. As the aircraft passed the crest of the runway, the flight crew became aware of vehicles at its far end but, as they were now close to their rotation speed, they continued and carried out a normal takeoff. The aircraft passed within 56 ft of a 14 ft high vehicle.

This serious incident was notified to the AAIB at 1724 hrs on 23 July, seven days after it had occurred. The subsequent investigation revealed further incidents had occurred during the course of the work, the most significant being on the night of 15 July 2003. On this occasion ATC had instructed three commercial passenger aircraft to go-around after they had knowingly positioned them to land on the reduced length runway. The crews of all three aircraft were unaware of the reduced length available and, when informed, stated that it was insufficient for them to be able to land. The closest of the aircraft, a Tristar, was at a range of 2.5 nm when instructed to go-around.

The actions of Manchester Airport plc (MA plc) and National Air Traffic Services (NATS) Manchester, whilst not directly contributing to the event involving G-XLAG, raised additional concerns. In light of this, the scope of the investigation was extended to include the manner in which MA plc and NATS had planned and managed the rubber removal operation.

The operator, MA plc and NATS have now taken considerable steps to address most of the issues raised in this report.

SAFETY RECOMMENDATION - 2006-008

It is recommended that National Air Traffic Services consider the exclusion of operational staff in direct commercial negotiations, where there is the potential for this to result in a conflict of interest between operational best practise and commercial considerations.

Response

NATS does not accept this recommendation. By utilising a combination of commercial and operational managers in contract negotiations NATS aims to ensure that the operational requirements of both the customer and ATC service provision are fully met.

Status - Rejected

SAFETY RECOMMENDATION - 2006-012

It is recommended that Manchester Airport plc include appropriate guidance in the Airport Operations Manual on the local authority planning agreements governing the use of Runway 06R/24L.

Response

Manchester Airport has updated the Aerodrome Manual to include information on the planning permission governing the use of Runway 06R/24L (now 05R/23L). This was completed in the November 2006 edition, in Part 1, Chapter 8.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2006-013

It is recommended that National Air Traffic Services incorporate appropriate guidance in the Manchester Airport Manual of Air Traffic Services (Part 2) on the local authority planning agreements governing the use of Runway 06R/24L.

Response

This recommendation was accepted by NATS and appropriate information is contained within the Manchester Airport Manual of Air Traffic Services (Part 2).

Status - Accepted - closed

SAFETY RECOMMENDATION - 2006-014

It is recommended that Manchester Airport plc introduce a system which requires the timely dissemination and acknowledgement of any instruction issued containing operational information with safety implications, such as Operations Advice Notices.

Response

Changes to the process for consultation with ATC (NATS) on proposed operational changes and dessemination of instructions (now called Airside Temporary Operating Instructions for improved clarity) had already taken place in late 2005. These are now established and include joint hazard assessments between MA plc and NATS.

Status - Accepted - closed

Embraer 145-EP	Venice Airport, Italy	15 November 2003	Incident

AAIB Bulletin: 9/2004
FACTOR: F43/2004

Synopsis

During takeoff at Venice, the left inboard main wheel tyre (number 2) shed its tyre tread. The tread had failed as a result of overstress in the sidewall of the tyre leading to a break up of the tyre casing plies. Air penetrated through the failure in the inner wall of the tyre and then permeated through the casing leading to the tread package lifting from the carcass. The overstress was attributed to the tyre running under inflated due to an air leak from the overpressure valve. The leak was due to corrosion on the over pressure valve seat form a poor anodised layer during manufacture and a degraded O-ring seal.

SAFETY RECOMMENDATION - 2004-023

Goodrich Aircraft Wheels and Brakes Division should amend the Embraer 145 Wheel Component Maintenance Manual to require visual inspection of the inflation and over-inflation valve seat areas at every tyre change.

Response

The component maintenance manual (CMM) is scheduled to have the CHECK section wording revised to include removal and a visual inspection of the sealing surfaces of the inflation valve and over-inflation plug at every tyre change. The changes will be incorporated in the 4th quarter of 2004.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2004-027

Goodrich Aircraft Wheels and Brakes Division should carry out research into the possible causes of the fuse plug leakage and consider action to reduce the risk of leaking fuse plugs.

Response

Investigation continues with British Airways CitiExpress to determine the cause of fuse plug leakage. Fuse plugs are being examined for leakage and the preformed packings are being replaced at each tyre change.

A temporary revision will be issued.

Status - Accepted - closed

Boeing 777-236	**On departure from London Heathrow Airport**	**10 June 2004**	**Incident**

AAIB Bulletin: 2/2007
FACTOR: F10/2007

Synopsis

After takeoff from London Heathrow Airport a vapour trail was seen streaming aft of the aircraft. The flight crew diagnosed that the aircraft was probably leaking fuel from the centre wing fuel tank. They declared an emergency and decided to jettison fuel to reduce to maximum landing weight before returning to Heathrow. Their intention was to minimise heating of the brake units during the landing roll in order to reduce the risk of fire if fuel was to leak onto the wheelbrakes. After landing, the aircraft was met by the Airfield Fire and Rescue Service who reported some vapour emanating from the left landing gear but no apparent fuel leaks.

The fuel leak was caused by fuel escaping through an open purge door inside the left main landing gear bay, on the rear spar of the centre wing tank. The purge door had been removed during base maintenance between 2 May and 10 May 2004 and had not been refitted prior to departure. The open purge door was missed for a number of reasons: its removal was not recorded on a job card; the engineer who closed the centre wing tank was not aware that the purge door existed; during leak checks insufficient fuel was used to reveal a leak from the purge door due to an incorrect leak check quantity in the aircraft maintenance manual; the engineer who carried out the leak checks was not aware that the purge door existed and so did not inspect the door; the purge door was not cross-referenced in the maintenance manual; and the open purge door was not visible from the ground with the left inboard main gear door closed.

Following the incident, significant safety action was taken by both the maintenance organisation and the aircraft manufacturer to address issues discovered during the investigation.

SAFETY RECOMMENDATION - 2006-097

British Airways Maintenance Cardiff should actively encourage staff to raise problems with procedures in job cards and in the Aircraft Maintenance Manuals, take prompt action to remedy the problems and provide subsequent feedback.

Response

British Airways Maintenance Cardiff (BAMC) made ammendments to local procedures ensuring that all query forms are examined for airworthiness impact within 7 days of receipt and prioritised for action accordkngly. All data driven queries are focussed through BA technical group and more recently have been raised on E-basis allowing the normal tracking processes to be followed. The weekly senior team meeting now includes progress on all queries including planning technical and facilities issues. A new approach to modification inputs includes a process to record and respond to issues at the workplace by allowing the production group to record the issues on sheets that become part of the document control log on each input. The data from the sheets is also added to the wider tech planning database. Feedback is given directly to the individual who raises the issue.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2006-098

British Airways Maintenance Cardiff should identify and publish clear disciplinary policies and boundaries relating to maintenance errors to encourage uninhibited internal reporting of maintenance errors.

Response

The following text has been added to the company members handbook.

BAMC considers the quality of the maintenance carried out on our customers' aircraft and the safety of company members to be a vital requirement necessary for the continued success of our organisation. Incidents and events will be investigated using the maintenance error investigation process IAW local company procedures primarily focused on the procedural and system failures or omissions. However, if at the conclusion of the investigation, it found that individuals have failed to perform their tasks with due consideration for both safety and quality, their acts of omissions may potentially be deemed as gross misconduct.

Couples with this statement we have examined and amended procedures appropriately and additionally we have fully trained QE delivering Maintenance error investigation training.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2006-099

British Airways Maintenance Cardiff should ensure that its Maintenance Error Management System fulfils all the elements recommended in the Civil Aviation Authority's Airworthiness Notice 71.

Response

BAMC utilises the maintenance error investigation (MEI) model in order to identify the underlying causes of maintenance error related incidents. This is in line with the corporate requirement and mirrors the elements of BA Quality procedure QU-Q-1-2.

Within the procedures at BAMC there are minor differences to the categorisation of events. Work is continuing to train a selection of BAMC company members to the managament and performance of the MEI process. In addition to this a project is continuing into linking the disciplinary processes across the organisation to maintenance error related events whilst endeavouring to maintain an open and honest reporting culture.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2006-100

British Airways Maintenance Cardiff should ensure that its Technical Team Leaders are adequately disseminating information from Technical Team Leader meetings to the Technicians and Mechanics in their team.

Response

BAMC can demonstrate that line managers communicate a range of technical, quality and safety informatio, including recent events to the certifying population. This is a business as ususal activity and referred to in the original report. This information is subsequently delivered by the team leaders to the mechanics and technicians actually regularly received communication. BAMC has recently started to use the Tech info portal to ensure that shift briefs concerning safety, quality and maintenance incidents are formally recorded and signed for by individuals.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2006-125

When British Airways Maintenance Cardiff has addressed safety recommendations 2006-097 to 2006-100, British Airways should carry out a safety audit at British Airways Maintenance Cardiff.

Response

BA Engineering Quality completed the required audit once BAMC have confirmed all their actions have been completed.

The Audit was conduted on 13 July 2007 by the Manager Q&T and Team Manager Quality and an audit report raised.

Status - Accepted - closed

Boeing 777-222	**Runway 27L Holding**	**14 July 2004**	**Incident**
Airbus A340-313	**Area Heathrow**		

AAIB Bulletin: 9/2005
FACTOR: F32/2005

Synopsis

The holding area for Runway 27L at London Heathrow Airport is wide enough for two 'heavy' aircraft to position side by side and aircraft entering this area essentially follow a single yellow taxiway centreline, which then splits into two parallel lines. Prior to departure, an Airbus A340 was stationary, well short of the N2W traffic bar behind an Airbus A320, which was stopped at the NB2W traffic bar, in the holding area awaiting its turn to line up. It was positioned on the southern most line, on the right of the holding area.

Whilst in that position, a Boeing 777 was instructed to taxi forward and hold on the left of the holding area. As it passed behind the A340, the handling pilot made use of reference points within the cockpit to assure wingtip clearance from the A340's tail but, as he continued along the northern taxiway line, the right wingtip of the B777 made contact with the left winglet of the A340. At the point of contact, the B777 had not reached the section of the line parallel to that upon which the A340 was parked. Although the B777 flight crew thought that the A340 was closer than it might be at other airports, this was not considered unusual for Heathrow.

SAFETY RECOMMENDATION - 2005-051

It is recommended that the Joint Aviation Authorities, in common with the Federal Aviation Administration intent, mandate a minimum recording duration of two hours for all aircraft currently required to be fitted with a Cockpit Voice Recorder.

Response

This is in response to AAIB Safety Recommendation 2005-051, issued August 19, 2005. This recommendation asked the FAA to mandate a minimum recording duration of two hours for all aircraft currently required to be fitted with a Cockpit Voice Recorder (CVR).

The FAA issued a notice of Proposed Rulemaking (NRPM) titled 'Revisions to Cockpit Voice Recorder and Digital Flight Data Recorder Regulations' to address AAIB Safety Recommendation 2005-051. The docket is published in the Department of Transportation Docket Management System under docket number FAA-2005-20245.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2005-053

It is recommended that the Federal Aviation Administration require United Airlines, and any other airline regulated by the Federal Aviation Administration with similar procedures, to amend their procedures to ensure prompt identification of accidents and serious incidents and timely preservation of Cockpit Voice Recorder recordings.

Response

I would agree with the safety recommendation 2005-53 regarding preserving CVR information. That will probably require some changes to Flight Operations Manual pages 8.40.8 and 8.40.9 (30 JUN 05).

Status - Accepted - closed

Boeing 767-204 **Boeing 737-37Q**	**Taxiway V/S, Manchester Airport**	**4 November 2004**	**Accident**

AAIB Bulletin: 12/2005
FACTOR: F6/2006

Synopsis

The left wing of the taxiing Boeing 767-200 struck the right horizontal stabiliser of the stationary Boeing 737-300. Both aircraft were awaiting departure from Runway 24 Left at Manchester. The investigation concluded that the B767 commander, who bore primary responsibility for collision avoidance, misjudged the available separation due to a combination of physiological limitations, distractions and a false assumption regarding his ATC clearance. Three Safety Recommendations are made, concerning flight crew awareness of clearance issues, recording of communications on the Airport Fire Service frequency and ATC procedures at Manchester Airport.

SAFETY RECOMMENDATION - 2005-126

Manchester Airport Air Traffic Control should review local working practises with regard to the south side taxiways to ensure that they are standardised and accurately reflect the requirements of MATS Part 2. Furthermore, MATS Part 2 should be reviewed to ensure that the fullest information on the south side taxiways is included to assist controllers.

Response

The general Manager of ATC, Manchester Airport proposed a review group to be established with the specific task of reviewing the current practice and instruction with regards to the Southside taxiway infrastructure.

Status - Accepted - closed

Airbus A320-214	Gatwick	15 January 2005	Accident

AAIB Bulletin: 10/2005
FACTOR: F38/2005

Synopsis

The left nosewheel detached from the aircraft during the takeoff from London (Gatwick) Airport. Airport staff saw the wheel fall off and the flight crew were notified by Air Traffic Control (ATC). After holding for two hours, to burn off fuel and reduce the landing weight, the aircraft landed safely at Gatwick. The nosewheel detached as the result of the partial seizure of the outer wheel bearing, most probably caused by water contamination of the grease in the bearing.

SAFETY RECOMMENDATION - 2005-075

For newly manufactured aircraft, the European Aviation Safety Agency should require that the cockpit voice recorder and cockpit area microphone are provided with an independent 10 minute back-up power source, to which the cockpit voice recorder and cockpit area microphone are switched automatically, in the event that normal power is interrupted.

Response

In so far as the Agency's responsibilities are concerned the criterion for approval of equipment is in place, since EUROCAE ED-112 can be used for this purpose. The subject of Recorder Incependent Power Supply (RIPS) is addressed within ED-112, which should be an acceptable means of compliance to the future OPS implementing rule of recorders.

Status - Rejected

Boeing 747-436	En route from Los Angeles International Airport to London Heathrow Airport	20-Feb-2005	Incident

AAIB Bulletin: 6/2006
FACTOR: F23/2006

Synopsis

Immediately after the aircraft took off on a night flight from Los Angeles to London, a banging sound was heard and passengers and ATC reported seeing flames from the No 2 engine. The symptoms and resultant turbine over-temperature were consistent with an engine surge; the crew completed the appropriate checklist, which led to the engine being shut down. After assessing the situation, and in accordance with approved policy, the commander decided to continue the flight as planned rather than jettison fuel and return to Los Angeles. Having reached the east coast of the USA with no indications of further abnormality and with adequate predicted arrival fuel, the crew decided to continue to the UK. The winds and available flight

levels were subsequently less favourable than anticipated and, nearing the UK, the crew decided to divert to Manchester in order to maintain the required arrival fuel reserve.

In the latter stages of the flight the crew encountered difficulties in balancing the fuel quantities in the four main tanks, became concerned that the contents of one tank might be unusable and declared an emergency in accordance with the operator's procedures. The aircraft landed with low contents in both outboard main tanks, although the total fuel quantity was in excess of the planned reserve. The fuel system, in the configuration selected, should have continued to feed the operating engines until all tanks emptied.

The investigation determined that the engine surge had been due to excessive wear to the high-pressure compressor casing and, with the standard of fuel controller software installed, this resulted in turbine over-temperature damage. There was no evidence of fuel system malfunction and it was possible to maintain fuel tank quantities in balance by the selective use of fuel pumps. The evidence suggested that the operator should ensure that flight crews are provided with relevant instruction on 3-engined fuel handling during initial and recurrent training, and that the regulators should review the policy on flight continuation for public transport aircraft operations, following an in-flight shutdown of an engine, in order to provide greater clarity to the operators. Eight recommendations are made, 6 of which relate to flight data recorders.

SAFETY RECOMMENDATION - 2006-022

It is recommended that the Federal Aviation Administration should require that Honeywell modify the appropriate Return to Service test procedures, to ensure the detection of a fault which prevents a series 980-4100 model of flight recorder from retaining the appropriate minimum duration of recorded data proscribed by regulation.

Response

Test scripts were revised & issued to the field. Honeywell did investigate this discrepancy back in early 2005 following the United Kingdom Air Accidents Investigation Branch (AAIB) findings. As a result of their testing, they updated the bench test software to check for miswired tracks per this anomaly. The subsequent software part number 998-1513-514 was released on July 28,2005.

The software configuration for the tester (Automated Test Unit part number 964-0434-xxx) is released as a Service Information Letter- (ATU-0434-SW, No.14).

Status - Accepted - closed

SAFETY RECOMMENDATION - 2006-023

It is recommended that the Federal Aviation Administration should require that Honeywell modify the design and operation of its automated equipment used for testing the series 980-4100 model of flight data recorder, to ensure the detection of a fault which prevents such a model of flight recorder from retaining the appropriate minimum duration of recorded data proscribed by regulation.

Response

Test scripts were revised & issued to the field. Honeywell did investigate this discrepancy back in early 2005 following the United Kingdom Air Accidents Investigation Branch (AAIB) findings. As a result of their testing, they updated the bench test software to check for miswired tracks per this anomaly. The subsequent software part number 998-1513-514 was released on July 28,2005.

The software configuration for the tester (Automated Test Unit part number 964-0434-xxx) is released as a Service Information Letter- (ATU-0434-SW, No.14).

Status - Accepted - closed

SAFETY RECOMMENDATION - 2006-024

It is recommended that the Federal Aviation Administration should require that Honeywell alert all users of Acceptance Test Unit part number 964-0434-042, utilising test software part number 998-1513-513, to make them aware that the equipment will not detect a short circuit fault between one or more tracks on the distribution board of the series 980-4100 model of flight data recorder.

Response

Honeywell has initiated a revision of SIL ATU-0434-SW, No.41 to include Automated Test Unit part numbers 964-0434-041 & -042 in the salutation and a statement that previous test script versions will not detect the short circuit fault between one or more tracks on the distribution board of the series 980-4100 model of flight data recorder. The revision will be issued to the field on or before January 31, 2008.

The SACO is satisfied with Honeywell's response and considers matters relative to the subject safety recommendations complete.

Status - Accepted - closed

Airbus A321-231	**Approach to Runway 36 Khartoum, Sudan**	**11 March 2005**	**Incident**

AAIB Bulletin: 5/2007
FACTOR: F36/2007

Synopsis

The aircraft was attempting to land at Khartoum by night in conditions initially reported as blowing sand but which were in fact consistent with a forecast dust storm. Runway 36 was in use but the ILS on this runway was out of service. The commander assessed the weather conditions passed to him by ATC and believed that he was permitted, under his company's operations policy, to carry out a Managed Non-Precision Approach (MNPA) to Runway 36. This type of approach requires the autopilot to follow an approach path defined by parameters stored in the aircraft's commercially supplied Flight Management and Guidance System (FMGC) navigation database.

On the pilot's approach chart, which was also commercially supplied but from a different supplier, the final descent point was depicted at 5 nm from the threshold of Runway 36 whereas the FMGC's navigational database had been correctly updated with a recent change to this position published by the Sudanese CAA which placed it at 4.4 nm from the threshold. The discrepancy amounted to a difference in descent point of 0.6 nm from the Khartoum VOR/DME beacon, the primary navigation aid for the non-precision approach.

The pilots commenced the approach with the autopilot engaged in managed modes (ie the approach profile being determined by the FMGC instead of pilot selections). The aircraft began its final descent 0.6 nm later than the pilots were expecting. Believing the aircraft was high on the approach, the handling pilot changed the autopilot mode in order to select an increased rate of descent. The approach became unstable and the aircraft descended through 1,000 ft agl at an abnormally high rate. The aircraft then passed through its Minimum Descent Altitude (equivalent to a height of 390 ft agl) with neither pilot having established the required visual references for landing. Instead each pilot believed, mistakenly, that the other pilot was in visual contact with the runway approach lights.

When the confusion between the two pilots became apparent, the aircraft had descended to approximately 180 ft agl and the handling pilot commenced a go-around. Between 3.4 and 5.1 seconds later, with the aircraft at a radio altitude of approximately 125 ft agl, in a position

approximately 1.5 nm short of the runway, the Enhanced Ground Proximity Warning System (EGPWS) "TERRAIN AHEAD, PULL UP" audio warning was triggered. The correct emergency pull-up procedure was not followed in full, partly because the handling pilot had already initiated a go-around. The minimum recorded terrain clearance achieved during the recovery manoeuvre was 121 ft.

One further non-precision approaches to Runway 36 was attempted using selected autopilot modes. The crew were attempting a third approach when they received visibility information from ATC that was below the minimum required for the approach. The aircraft then diverted to Port Sudan where it landed without further incident.

SAFETY RECOMMENDATION - 2007-041

Airbus should revise the expanded information 'Pull up to full backstick and maintain' of the A320 Emergency Procedure for the EGPWS Alert "TERRAIN TERRAIN PULL UP" to remove any ambiguity about the amount of rearwards sidestick that should be applied.

Response

In the EGPWS procedure (e.g. SA/LR FCOM 3.02.34), the expanded information is revised as follows:

SA/LR:

FCOM Volume 3 modifications will be released at the next June 2008 general revision with the following revision numbers:

-SA: REV 42

-A330: REV 24

-A340: REV 31

A380:

FCOM modification was available at the EIS of the A380 (release date in FCOM: 27/06/2007).

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-042

Airbus should expedite publication of guidance material relevant to flight and ground operations by Airbus aircraft types in conditions of blowing sand or low drifting sand.

Response

In the FCOM Volume 3 Supplementary Techniques (e.g. SA/LR FCOM 3.04.91), recommendations for operations with sand or dust are added in the 'Volcanic Ash' section.

This topic was presented during they year 2006 OLM's (Operational Liason Meeting) to Airbus operators. Feedback was collected end of 2006 from the various regional meetings to draw the FCOM recommendations. However, it was not possible to meet the deadline of the FCOM Volume 3 General Revision dated February 2007.

SA/LR:

FCOM Volume 3 modifications will be released at the next June 2008 general revision with the following revision numbers:

-SA: REV 42

-A330: REV 24

-A340: REV 31

Please note that the release date for the operators of SA/LR FCOM was initially planned for January 2008 (Airbus freezing date September 2007) but has been postponed to June 2008 following industrial production constraint of the manuals.

A380:

FCOM modification is available since 14/12/2007 (release date) for A380 operators.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-044

The European Aviation Safety Agency, in conjunction with industry, should review the current TAWS system design criteria (ETSO-C151a), and installation certification criteria, with particular emphasis on the timeliness of alerting when close to the runway. Revisions to these standards arising from this review should apply retrospectively to all aircraft currently covered by the TAWS mandate.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-046

The UK CAA should publish guidance to pilots regarding the appropriate action when faced with a conflict in approach parameters between their approach charts and an FMS database authorised for managed non-precision approaches.

Response

The CAA accepts this Recommendation.

The CAA will revise Flight Operations Department Communication (FODCOM) 20/2007 to ensure that it includes:

a) crew procedures to be used when using the FMS for approach purposes and

b) specific advice to pilots regarding the action they should take when faced with a conflict in approach parameters between approach charts and an FMS database.

The FODCOM will be further revised to ensure that it includes specific guidance to operators intending to conduct managed non-precision approaches, including training and operational requirements. These revisions will be completed and a revised FODCOM published by the end of January 2008.

CAA Action

FODCOM 20/2007 was revised and republished in January 2008 (8/2008) and now includes both guidance on crew procedures to be used when using the FMS for approach purposes and advice on actions required if a discrepancy is discovered between an approach chart and FMS database information.

Status - Accepted - closed

Airbus A320-211	Runway 14 Leeds Bradford	18 May 2005	Accident

AAIB Bulletin: 6/2007
FACTOR: F37/2007

Synopsis

While landing on Runway 14 at Leeds Bradford Airport the aircraft touched down just beyond the end of the marked touchdown zone with low autobrake selected. Manual wheel braking commenced shortly after mainwheel touchdown. At a groundspeed of around 70 kt the breaks ceased operating, for about 17 seconds. A pronounced dip in the runway surface initially prevented the pilots from seeing the runway end. When it became apparent to the commander that it would not be possible to stop before the end of the runway, he deliberately did not select alternative breaking, as this would have caused loss of nosewheel steering, but instead used nosewheel steering to turn the aircract sharply to the right. The aircraft skidded sideways and came to a halt with its nosewheels off the runway, shortly before the end of the paved surface and the start of a steep down slope. The cause of the braking loss could not be positively established but it was consistent with the effects of excessive noise in the electrical signals from the mainwheel tachometers used to sense groundspeed. Two of the tachometer driveshafts were found bent and it was known that this encouraged a resonant condition that could cause tachomenter signal errors above the groundspeed at which they would be detected by the aircraft's moniitoring systems. Should the condition affect both main landing gears simultaneously, the brake control system logic could generate an erroneous aircraft reference speed, which could activate the anti-skid system and release the brakes. Fluctuation in the signal errors would prevent the system from detecting and correcting the braking loss or providing a warning to the crew.

It was found that there were a number of other known anomalies with the brake control and monitoring system that could cause either brake failure or locking of the wheels, some of which had resulted in previous incidents and accidents. The aircraft manufacturer and the Airworthiness Authority had defined and implemented corrective actions, and redesigned tachometer driveshafts and updated software intended to correct some of the faults were available, but had not been incorporated on a substantial number of aircraft, including JY-JAR. The findings raised concerns about the aircraft manufacturer's procedures intended to ensure design quality and continued airworthiness.

The investigation identified the following causal factors:

1. Excessive wheel tachometer signal noise, caused by a bent tachometer driveshaft on each main landing gear assembly, resulted in loss of braking using the Normal system.

2. Inadequate fault tolerance within the brake control system led to the sustained loss of Normal braking during the landing ground roll.

3. There was no flight deck indication of brake system malfunction, and this delayed the crew's recognition of the loss of braking.

4. There was a lack of effective action to fully rectify brake system anomalies apparent from previous incidents and accidents.

SAFETY RECOMMENDATION - 2007-012

The Jordanian Civil Aviation Authority should ensure that aircraft operators under their jurisdiction have procedures in place to ensure the continued airworthiness of mandatory flight recorders.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-013

The Civil Aviation Authority should publish information within the Air Information Publication relating to runways which do not comply with the provisions of CAP 168, or which have profiles that reduce the ability of pilots to assess landing performance distance remaining visually, in the form of a 'Warning'. within the 'Local Traffic Regulations' section or the 'Remarks' area of 'Runway Physical Characteristics' for all affected UK airports.

Response

The CAA accepts this recommendation.

In the case of Leeds Bradford Airport, information on the line of sight characteristics of runway 14/32 is now published in the AIP in the 'Remarks' area of AD2.12, 'Runway Physical Characteristics'.

The CAA will carry out a review to ensure that all runways that possess profiles or line of sight characteristics that do not comply with the provisions of CAP 168, or which have profiles that reduce the ability of pilots visually to assess landing performance distance remaining, are identified and appropriately notified in the Aeronautical Information Package (AIP) for all UK licensed aerodromes.

This work will be completed by June 2008.

CAA Action

The CAA has carried out a review which has highlighted a number of aerodromes where the runway profiles do not comply with the provisions of CAP 168. This has led to the amendments to AIP being submitted to issue a warning to pilots.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-014

The International Civil Aviation Organisation (ICAO) should re-assess the benefits and disadvantages to runway situational awareness of runway distance markers for any runway which has a profile that prevents the end of the paved surface from being in view continuously from the flight deck. If the re -assessment concludes that a net benefit is likely, the ICAO should encourage the installation of such markers at relevant civil airports.

Response

The Air Navigation Commission will study the issue raised in the safety recommendation further and develop new specifications, if necessary, for inclusion in Annex 14, Volume 1.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-015

The European Aviation Safety Agency should require the expeditious replacement of the long hollow titanium tachometer driveshaft in the braking systems of the A320 family of aircraft with a driveshaft of improved design.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-016

The European Aviation Safety Agency should ensure the replacement of software Standards 7 or 9 with Standard 9.1 or a proven later version, in those remaining Airbus A319 and A320 brake and steering control units not yet so modified.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-018

The European Aviation Safety Agency should consider requiring, for aircraft in the A320 family and other aircraft with similar combined Brakes and Steering Control systems, changes that allow manual selection of Alternate braking without consequent loss of nosewheel steering.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-019

The European Aviation Safety Agency should require Airbus to take measures aimed at ensuring that anomalies in A318/319/320/321 aircraft braking systems that may lead to loss of Normal braking are clearly indicated to the flight crew.

Status - Response Awaited - open

Boeing 737-436	Aberdeen Airport	8 July 2005	Accident

AAIB Bulletin: 6/2007
FACTOR: F22/2007

Synopsis

On takeoff, sections of a blast pad positioned at the runway threshold lifted and broke up, causing damage to the aircraft's tailplane and elevator. The crew were unaware of the damage to the aircraft and completed the takeoff and flight to their destination.

SAFETY RECOMMENDATION - 2007-023

The International Civil Aviation Organisation (ICAO) should consider amending Annex 14 to include requirements for paved blast pads that will ensure that they cannot be damaged by the engine inlet suction, the engine jet blast or the taxiing loads of the most critical aircraft.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-024

The International Civil Aviation Organisation (ICAO) should review the requirements of Annex 14 to ensure that runway surfaces, stopways and other adjacent areas susceptible to high-power jet blast cannot be damaged by the engine inlet suction or the engine jet blast of the most critical aircraft.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-025

The Civil Aviation Authority (CAA) should consider amending Civil Air Publication (CAP) 168 to include design requirements for paved blast pads that will ensure that they cannot be damaged by the engine inlet suction, the engine jet blast or the taxiing loads of the most critical aircraft.

Response

The CAA accepts this Recommendation. In August 2005 in Issue 8 of Reference Point, the CAA published a warning to aerodrome operators on the potential for blast pad disintegration and recommended the use of guidance published by ICAO on blast pad design thickness. The ICAO guidance and general requirements for blast pad design and maintenance will be published, initially in a Notice to Aerodrome Licence Holders (NOTAL), by September 2007 and incorporated in CAP 168 – Licensing of Aerodromes, at the next subsequent amendment.

CAA Action

A NOTAL establishing markings for paved blast pads was issued in January 2008. The requirements have been incorporated into CAP 168 (currently out for consultation and due for publishing summer 2008).

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-026

The Civil Aviation Authority (CAA) should ensure that paved blast pad surfaces, stopways and turnpads at all licensed UK airports are constructed such that they cannot be damaged by the engine inlet suction, the engine jet blast or the taxiing loads of the most critical aircraft.

Response

The CAA accepts this Recommendation. In September 2006, the CAA conducted a survey of paved blast pad surfaces, stopways and turnpads at UK licensed aerodromes. A review of their construction will be completed by September 2007 and, where necessary, action plans will be established by December 2007 to ensure that they cannot be damaged by the engine inlet suction, the engine jet blast or the taxiing loads of the most critical aircraft.

CAA Action

The review has been completed. The CAA has ensured that licensed aerodromes have robust inspection and maintenance regimes in place to ensure that paved blast pad surfaces, stopways and turnpads cannot be damaged by the engine inlet suction, the engine jet blast or the taxiing loads of the most critical aircraft.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-027

The International Civil Aviation Organisation (ICAO) should establish standardised markings for paved blast pads and amend Annex 14 accordingly.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-028

The Civil Aviation Authority (CAA) should, in consultation with the International Civil Aviation Organisation (ICAO), establish standardised markings for paved blast pads and amend Civil Air Publications (CAPs) 168 and 637 accordingly.

Response

The CAA accepts this Recommendation. Markings for paved blast pads at UK licensed aerodromes will be notified in a Notice to Aerodrome Licence Holders (NOTAL), by September 2007, and incorporated in CAP 168 – Licensing of Aerodromes and CAP 637 – Visual Aids Handbook at the next subsequent amendments. The CAA will, by October 2007, provide ICAO with a working paper that proposes international standardisation of the markings.

CAA Action

Markings for paved blast pads at UK licensed aerodromes were notified in a NOTAL in January 2008. They have been incorporated in CAP 168 (currently out for consultation and due for publishing summer 2008).

The CAA has, at the ICAO Aerodromes Panel Working Group of the Whole, tabled this as a proposed work programme. This was accepted and markings and design of paved blast pads is now formally on the work programme of the Aerodrome's Panel's Visual Aids Working Group and the Aerodrome Design Working Group.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-029

British Airways should review the training of takeoff techniques across all fleets to ensure that it is consistent with the operator's intended procedures.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-030

British Airways should incorporate information on appropriate takeoff techniques in relevant flight crew documentation for all fleets.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-031

The Civil Aviation Authority should review the implementation of current performance requirements for 'Performance A' aeroplanes, to ensure that they adequately reflect desired line-up techniques, in particular following ground markings provided for taxi guidance.

Response

The CAA partially accepts this Recommendation. As there is no international standard for taxi guidance lead-in lines, it is very difficult to correlate the point at which lead-in lines meet runway centre-lines with the JAR-OPS 1 allowance. However, the CAA will review and amend current guidance by October 2007, as required, to encourage a safe and consistent method for UK operators to address the mismatch between performance and ground marking requirements.

CAA Action

It has proved difficult to address the issue in the time available. The CAA will now produce a Flight Operations Division Communication (FODCOM) by October 2008 to highlight the issues raised by this accident, including the issues of aircraft performance and pilot knowledge. In addition, the FODCOM will address the issue of the calculation of the JAR-OPS 1 allowance and advise operators to provide crews with runway specific line-up guidance.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-032

The Civil Aviation Authority should, during routine audits of operators of 'Performance A' aeroplanes, ensure that operators' takeoff performance calculations are consistent with the operation of their aircraft, specifically with respect to the line-up position.

Response

The CAA accepts this recommendation, while the responsibility for performance calculations rests with the operator and it is for the operator to demonstrate to the CAA that he has an acceptable method for aligning data with operational practice. Nevertheless, this will be verified by the CAA during routine audits of operators of 'Performance A' aeroplanes.

Status - Accepted - closed

DHC8-8-402	Near Leeds, West Yorkshire	4 August 2005	Incident

AAIB Bulletin: 4/2007
FACTOR: F20/2007

Synopsis

Shortly after initiating a descent, an oily smell was noticed on the flight deck, almost immediately followed by a smoke build-up in the flight deck and cabin. The flight crew carried out the initial part of the smoke checklist procedure, declared an emergency and carried out a diversion. The cabin crew members donned smoke hoods, which caused appreciable communication difficulties, and prepared the cabin for an emergency landing. After landing, an emergency evacuation was carried out, without injury.

The smoke was found to be the result of fatigue cracking of a compressor support member of the No 2 engine. This had led to damage to an oil seal, allowing oil to leak into the bleed air supplying one of the air conditioning units. Fleet modification action aimed at preventing fatigue cracking of the component and at improving the affected oil seal was completed on all of the operator's fleet by July 2006.

No means of rapidly ascertaining the source of the smoke was available to the crew. Carrying out the subsequent actions prescribed in the checklist would have stopped the supply of smoke but the procedure was relatively protracted and could not be completed because of a high flight crew workload associated with the diversion.

SAFETY RECOMMENDATION - 2007-002

It is recommended that the EASA consider requiring, for all large aeroplanes operating for the purposes of commercial air transport, a system to enable the flight crew to identify rapidly the source of smoke by providing a flight deck warning of smoke or oil mist in the air delivered from each air conditioning unit.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-003

It is recommended that the FAA consider requiring, for all large aeroplanes operating for the purposes of commercial air transport, a system to enable the flight crew to identify rapidly the source of smoke by providing a flight deck warning of smoke or oil mist in the air delivered from each air conditioning unit.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-004

It is recommended that for all large aeroplanes operating for the purposes of commercial air transport, the UK CAA and the EASA should take such steps, procedural or technical, as are necessary to improve the reliability and availability of communications between flight and cabin crews, including the reliability of communications equipment and associated power supplies in both normal and emergency configurations.

Response

The CAA accepts this recommendation. As a first step to improving the reliability and availability of communications between flight and cabin crews, in both normal and emergency configurations, the CAA believes that a review is needed of the crew interphone system power supply configuration on all large aeroplanes. As this review and approval of any modifications arising frm the review, is design related it is an activity that falls entirely within the responsibility of the European Aviation Safety Agency to instigate. Therefore, the CAA wrote to EASA on 4 May 2007 supporting the AAIB position and requesting that it initiates such a review.

EASA Response awaited

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-006

It is recommended that the UK CAA and the EASA review the current training requirements for cabin crew members in the use of smoke hoods to mitigate the communication difficulties which may be encountered and to improve the ability of all the crew members to communicate while wearing smoke hoods.

Response

EU-OPS insists already on the necessary communication training for cabin crew, including when wearing smoke hoods during initial, conversion and recurrent training.

Appendix 1 to OPS 1.1005 (f), dealing with cabin crew initial training, specifies that 'emphasis shall be placed on effective communication between cabin crew and flight crew including technique, common language and terminology'.

Table 1 in Appendix 2 to OPS 1.1005/1.1010/1.1015 specifies that an in-depth training on 'Effective coordination and communication between all members including the flight crew as well as inexperienced cabin crew members' shall be included in the operator's CRM training, a relevant training on that item for the type-specific CRM and a relevant reinforcement for the senior cabin crew training.

Appendix 1 to OPS 1.965, dealing with pilots' recurrent training, specifies that 'the effects of smoke on an enclosed area and actual use of all relevant equipment' ((a)(3)(iii)) shall be included in the recurrent training every three years. It specifies also that 'communication and coordination inside and outside the cockpit' ((4)(ii)(F)) shall be part of the CRM training.

EU-OPS 1.180 provides that the AOC is subject to compliance with the required training program.

Moreover, OPS 1.780 (e) provides that '[Protective breathing equipment] must not prevent communication'.

The review of the requirements is therefore considered completed with satisfactory results.

The CAA accepts this recommendation and in the short term reviewed current guidance on smoke hood training for cabin crew and issued further advice (FODCOM 40/2007), which was published by on 14 December 2007. Action is in hand to incorporate this advice into CAP 768 at its next revision.

Status - Accepted - closed

Airbus A319-131 - 131	**Near London Heathrow**	**22 October 2005**	**Incident**

AAIB Bulletin: 2/2008
FACTOR: N/A

Synopsis

As the aircraft climbed to Flight Level (FL) 200 in night VMC, there was a major electrical failure. The crew reported that both the commander's and co-pilot's Primary Flight Displays (PFD) and Navigation Displays (ND) went blank, as did the upper ECAM display. The autopilot and autothrust systems diconnected, the VHF radio and intercom were inoperative and most of the cockpit lighting went off.

The commander maintained control of the aircraft, flying by reference to the visible night horizon and the standby instruments, which were difficult to see in the poor light. The co-pilot carried out the abnormal checklist actions which appeared on the lower ECAM display; the only available electronic flight display. Most of the affected systems were restored after approximately 90 seconds, when the co-pilot selected the AC Essential Feed switch to Alternate ('ALTN').

Preliminary information on the progress of the investigation was published in AAIB Special Bulletins S2/2005 and S3/2006, in November 2005 and April 2006. Four Safety Recommendations were made in Special Bulletin S3/2006.

It was not possible to determine the cause of the incident due to a lack of available evidence, however, ten additional Safety Recommendations are made in this report.

SAFETY RECOMMENDATION - 2007-062

It is recommended that the European Aviation Safety Agency should, in consultation with other National Airworthiness Authorities outside Europe, consider requiring training for fligh by sole reference to standby instruments for pilots during initial and recurrent training courses.

Response

We inform you that Safety Recommendation 2007-062 is under consideration at EASA but no response can yet be provided regarding this matter.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-063

Airbus should introduce a modification for A320 family of aircraft which have the pre-ISIS wiring configuration for the standby instruments, in order to provide a back-up power supply which is independent of the aircraft's normal electrical power generation systems.

Response

We will provide you with Airbus position regarding Safety Recommendations 2007-063, 2007-065, 2007-067 and 2007-069, which has been agreed with EASA. Airbus comments about these recommendations have been already included in the AAIB final report. I propose you is to send you the last status of discussion with the EASA regarding these recommendations.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-064

The European Aviation Safety Agency should mandate the provision of a back-up power supply for the standby horizon which is independent of the aircraft's normal electrical power generation systems, on A320 family aircraft.

Response

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-065

In order to ensure that the standby instruments on A320 family aircraft remain adequately illuminated following the loss of the left electrical network, Airbus should introduce a modification to provide a power supply for the standby instrument integral lighting which is independent of the aircraft's normal electrical power generating systems.

Response

In response to Safety Recommendation 2007-065 while it was still at the draft stage, Airbus advised that Service Bulletin A320-33-1057 had been issued in May 2007 to introduced

Modifications 37329 and 37330. The modifications provide a backup supply to the cockpit floodlight above the standby instruments.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-066

The European Aviation Safety Agency should mandate the provision of a power supply for the standby instrument integral lighting which is independent of the aircraft's normal electrical power generating systems, on A320 family aircraft.

Response

We inform you that Safety Recommendation 2007-066 is under consideration at EASA but no response can yet be provided regarding the matter.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-067

Airbus should conduct a study into the feasibility of automating the reconfiguration of the power supply to the AC Essential bus, in order to reduce the time taken to recover important aircraft systems on A320 family aircraft following the loss of the left electrical network.

Response

In response to this Safety Recommendation, while it was at the draft stage Airbus issued Service Bulletin SB A320-24-1120 in May 2007. This introduced Modification 37317 which provides automatic reconfiguration of the power supply to the AC ESS Bus in the event of AC BUS 1 failure.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-069

Airbus, in conjunction with the Generator Control Unit (GCU) manufacturer Hamilton Sundstrand, should modify the A320 family GCUs to provide the capability to record intermittent faults and to reduce their susceptibility to false differential protection trips.

Response

We will provide you with the Airbus position regarding Safety Receommendations 2007-063, 2007-065, 2007-067 and 2007-069, which has been agreed with the EASA. Airbus comments about these receommendations have already been included in the AAIB final report. What I propose you is to send you the last status of discussion with the EASA regarding these recommendations.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-070

The International Civil Aviation Organisation should expedite the introduction of a standard for flight deck image recording, and should encourage member states to provide legal protection, similar to that for cockpit voice recordings, for such image recordings.

Response

I am pleased to inform you that these recommendations have been duly considered by ICAO and that the Air Navigation Commission (ANC) has tasked the Flight Recorder Panel to develop Standards and Recommended Practices (SARPs) on requirements for airborne image recorders. The proposed SARPs are planned to be reviewed by the ANC towards the end of 2008.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-071

British Airways PLC should review its Air Safety Reporting (ASR) procedures with a view to ensuring that ASRs are received by the Flight Operations Safety Department in a timely a manner, irrespective of where the ASR is raised.

Response

A Flight Operations Department Notice was raised after the incident providing further advise concerning technical log entries especially if ASRs were raised after a technical event.

This notice was incorporated in Flying Crew Orders as shown below:

2225 AML

For any technical defect an entry must be made in the AML that as a minimum, contains all information about the defect that is stated on the ASR. In addition the ASR/GFOR box must be ticked.

For non-technical defects, the ASR /GFOR box is required to be ticked but NIL DEFECTS entered in the text box.

Status - Accepted - closed

Challenger 604	**8nm West of Midhurst VOR, West Sussex**	**11 November 2005**	**Incident**

AAIB Bulletin: 1/2008
FACTOR: N/A

Synopsis

At FL400, approximately four and a half hours after departure from Lagos on an intended flight to Farnborough, the crew received an 'AUTO PILOT PITCH TRIM' caution. Approximately 30 minutes later the 'STAB TRIM' and 'MACH TRIM' cautions illuminated. Stabiliser and mach trim modes were temporarily restored by re-engaging stabiliser command trim channel 1 only but, shortly afterwards, the 'STAB TRIM' and 'MACH TRIM' cautions illuminated again.

While descending towards Farnborough, several further attempts at re-engagement resulted in disconnection of the autopilot and indications of intermittent engagement of stabiliser trim channel 2. Application of nose-up stabiliser trim commands, using the yoke mounted switches, resulted in nose-down trimming of the horizontal stabiliser and the crew elected not to attempt further stabiliser trim re-engagements. The autopilot was re-engaged, but not before almost full nose down trim had been applied, which could not be corrected for the remainder of the flight.

The crew were concerned at the physical effort required to fly the aircraft manually and elected to make a flapless approach and landing in order to avoid increasing the already considerable nose-down pitching moment. The aircraft diverted to London Heathrow Airport, where a successful flapless landing was achieved by the co-ordinated efforts of the commander and co-pilot operating the primary flight controls and an off-duty pilot operating the thrust levers.

The operator has reported two previous events involving the stabiliser trim system on this aircraft.

SAFETY RECOMMENDATION - 2007-061

It is recommended that the EASA, in collaboration with other airworthiness authorities, including the FAA and Transport Canada, amend their requirements relating to the design and installation of electronic components in aircraft, so that fluid and moisture contamination, as a source of

common cause failures, is specifically taken into account and adequate measures take place to minimise the risk.

Status - Response Awaited - open

Dornier 328 -110	**Isle of Man (Ronaldsway) Airport**	**28 November 2005**	**Incident**

AAIB Bulletin: 10/2006
FACTOR: F38/2006

Synopsis

The aircraft had a covering of frost and was de-iced/anti-iced using a heated mixture of Type II+ de-icing fluid and water. The commander commenced the takeoff run and at the calculated rotation speed pulled the control column aft. The aircraft did not appear to rotate in response to the control input and he abandoned the takeoff. The aircraft was brought to a stop on the runway.

The probable cause of the incident was the incorrect V1/VR speed selected. Contamination must have been present on the tail surfaces because the aircraft would not rotate at the 'normal' rotation speed for its configuration and load but it was not possible to determine whether the contaminant was ice or thickened fluid. The problem may have occurred because fluid was sprayed from the trailing edge towards the leading edge.

SAFETY RECOMMENDATION - 2006-073

EuroManx should provide annual pre-winter flying awareness refresher training and information to all its flight crews. This refresher training should emphasise the need to use the correct icing speeds even in non-icing conditions.

Response

Regarding Safety Recommendation 2006-073: EuroManx Airways GmbH provide an annual pre-winter flying awareness refresher training and information to all its flight crews.

This training has to be signed by all EuroManx flight crews and is mandatory each year.

Status - Accepted - closed

Dornier 328	**On approach to Runway 24R at Manchester Airport**	**18 January 2006**	**Incident**

AAIB Bulletin: 10/2006
FACTOR: F40/2006

Synopsis

The aircraft failed to capture the glideslope during an ILS approach in IMC conditions to Runway 24R at Manchester Airport. The operating crew did not monitor the flight path of the aircraft and were only alerted that they had descended (with a high vertical speed) dangerously close to the ground some 5.5 nm from touchdown, by a "GLIDESLOPE" aural alert triggered by the EGPWS. The commander disconnected the autopilot and performed a go-around. ATC provided radar vectors to re-position the aircraft for another ILS approach, following which the aircraft landed without further incident.

SAFETY RECOMMENDATION - 2006-086

It is recommended that the Austrian aviation authority, AustroControl, review the flight crew training and operational procedures of EuroManx Airlines Gmbh, with the intent of ensuring that the operation of their aircraft is conducted in accordance with approved procedures.

Response

Regarding Safety Recommendation 2006-086: EuroManx Airways GmbH had a positive audit from the Austrian aviation authority AustroControl by 6 Austrian Flight Inspectors at the end of October 2007 on the Isle of Man.

Status - Accepted - closed

Boeing 737-45D	**Stand 114, London Heathrow Airport**	**20 February 2006**	**Incident**

AAIB Bulletin: 1/2007
FACTOR: F1/2007

Synopsis

While taxiing on to its assigned parking stand, the aircraft struck a vehicle which was parked in a prohibited area. The member of ground staff whose responsibility it was to ensure that the stand was unobstructed, was unable to see the whole stand from his assigned position in the jetty. Members of ground staff who saw the potential conflict were unable to alert the pilots.

SAFETY RECOMMENDATION - 2006-140

It is recommended that the BAA should examine the practicability of requiring a member of the ground crew to assume the responsibility of being adjacent to the ground level emergency STOP light button, and of monitoring the arrival of the aircraft on to the stand, whenever ground crews are present on a stand whilst an aircraft is manoeuvring to park.

Response

BAA have agreed with the CAA that this is not practical.

Status - Rejected

Airbus A310	**On approach to Birmingham International Airport**	**23 February 2006**	**Incident**

AAIB Bulletin: 7/2007
FACTOR: N/A

Synopsis

Air Traffic Control at Birmingham International Airport notified this serious incident to the Air Accidents Investigation Branch (AAIB) at 1240 hrs on 23 February 2006.

The aircraft was on a scheduled flight from Tehran, Iran, to Birmingham International Airport in the United Kingdom (UK). Following an uneventful flight, the aircraft was radar vectored for a Localiser/DME approach to Runway 33. The aircraft commenced a descent from 2,000 ft to the published minimum descent altitude of 740 ft whilst still 11 nm from the runway threshold. At a point 6 nm from the runway the aircraft had descended to an altitude of 660 ft, which was

164 ft agl. The radar controller noted this descent profile and, through the tower controller, issued an immediate climb instruction. However, the crew had already commenced a missed approach, which they initiated when they received a GPWS alert. The aircraft was radar vectored for a second approach during which the flight crew again initiated an early descent. On this occasion, the radar controller instructed the crew to maintain their altitude and the crew successfully completed the approach. The aircraft landed safely from the second approach.

SAFETY RECOMMENDATION - 2007-109

It is recommended that Mahan Air should develop operating procedures for the presence of additional flight crew members occupying a seat on the flight deck.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-110

It is recommended that Mahan Air should conduct a thorough review of its CRM training programme to ensure that it is both appropriate for their needs and produces consistent and acceptable results.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-111

It is recommended that Mahan Air should expand its FMS database to include all approaches relevant to their route structure.

Status - Response Awaited - open

ATR72-202	**Runway 27, Guernsey Airport**	**23-May-2006**	**Incident**

AAIB Bulletin: 3/2007
FACTOR: F11/2007

Synopsis

The aircraft bounced on touchdown due to insufficient landing flare being applied. In an attempt to cushion the second touchdown the co-pilot, who was the handling pilot, over pitched the aircraft resulting in the tail bumper making contact with the runway surface. The co-pilot was relatively inexperienced, this being his first airline aircraft type, and he could not recall ever having received formal instruction in recovery techniques for bounced landings

SAFETY RECOMMENDATION - 2006-124

The UK Civil Aviation Authority should require UK aircraft manufacturers, operators and training providers to issue appropriate guidance to pilots in the techniques for recovering from bounced landings.

Response

The CAA has checked that operators have appropriate guidance in place. The CAA published guidance, for the benefit of the General Aviation community in the September 2007 issue of the General Aviation Safety Information Leaflet. An AIC, for the further benefit of operators, training providers and all pilots, will be published by September 2008.

Status - Accepted - closed

Boeing 737-600	London Gatwick Airport	31 May 2006	Accident

AAIB Bulletin: 7/2007
FACTOR: F24/2007

Synopsis

The aircraft taxiied onto the stand centreline but failed to stop before its left engine cowling came into contact with the airbridge. The commander misunderstood the information provided by the parking aids and overran the correct stopping point whilst looking for a positive indication to stop. The emergency stop signal was not activated by either of the two ground staff present because confusion existed about when and how to operate it. Four Safety Recommendations are made.

SAFETY RECOMMENDATION - 2007-008

It is recommended that the CAA should use all measures that it can to encourage airport operators to expedite their compliance with international standards for visual docking guidance systems as specified in ICAO Annex 14, Chapter 5, section 5.3.24.

Response

The CAA accepts this Recommendation. The CAA will, by June 2008, consult industry on a proposal to encourage airport operators to expedite their compliance with Annex 14, Chapter 5, section 5.3.24 by 2010.

CAA Action

A Letter of Consultation was sent to the 20 aerodromes likely to be affected by this Recommendation in December 2007. A joint CAA Aerodrome Standards Department/Airport Operators Association meeting was held on 10 March 2008 to review the results of the consultation and to determine the safety related factors that should be priority drivers for the installation of ICAO-compliant Visual Docking Guidance Systems. A Notice to Aerodrome Licence Holders to that effect was published in June 2008.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-009

It is recommended that Aviance UK should include in its syllabus of training for airport ground staff information on when it is appropriate to activate stand emergency stop signals during aircraft parking manoeuvres, and ensure that a specific assessment of their ability to do so correctly is tested during their initial approved and recurrent training.

Response

Concerning the training aspect- all of the staff receive Ramp safety training, which covers the operation and emergency use of the Stand Entry Guidance systems. The operator in question received his training on 3 March 2005; at the same time he was also trained in aircraft marshalling. Refresher training is provided every 24 months.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-010

It is recommended that Aviance UK should review the system by which operational information is provided to airport ground crews to ensure that it is readily identifiable and accessible to all members of staff who require it in the performance of their duties.

Response

In addition to the training we have a Safety Bulletin concerning the arrival of aircraft on Stand- Aviance generic bulletin number 024- which staff are required to read and sign for, every 12 months. This advises them of the emergency procedure to be used.

Having had the opportunity to review the incident and the bulletin, we will be updating the bulletin to place more specific requirements on the operative allocated to chock the aircraft, so that the aircraft progress is monitored and the emergency stop activated if required. I have attached a copy of the previous bulletin and the bulletin that which we intend to issue as its replacement.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-011

It is recommended that Gatwick Airport Limited should provide ground crew with an effective means of determining whether an aircraft has overrun its correct parking position.

Response

Gatwick Airport Ltd will give a full response once a solution has been fouind to achieve the end result.- Email received on 06 July 07.

Status - Accepted - closed

Dornier 328 - 100	Aberdeen Airport	22 June 2006	Incident

AAIB Bulletin: 1/2008
FACTOR: N/A

Synopsis

During the landing roll, the crew were unable to decelerate the aircraft sufficiently because they were unable, repeatedly, to select the power levers into the beta range. The aircraft overran the runway and the Runway End Safety Area, coming to rest some 350 metres beyond the end of the runway. There were no injuries. Three Safety Recommendations are made.

SAFETY RECOMMENDATION - 2007-103

The Luftfahrt-Bundesamt should ensure that a training programme, fully alerting Dornier 328 crews to the potential for restricted movement and the optimum operation of the lever/latch combination, and detailing appropriate operational procedures, be developed and mandated for all operators in Europe, and through liaison with all relevant National Aviation Authorities, make this information available to all operators of the Dornier 328 worldwide.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-104

The European Aviation Safety Authority should require the Dornier 328 Type Certificate holder to re-design the power lever/beta/reverse latch system to improve the present arrangement.

Status - Response Awaited - open

Jetstream 3202	Wick Aerodrome, Caithness, Scotland	3 October 2006	Accident

AAIB Bulletin: 3/2008
FACTOR: N/A

Synopsis

The aircraft was on a scheduled flight from Aberdeen Airport to Wick in Scotland. It was the final sector of a four sector day during which there had been no significant delays. The crew completed the VOR/DME arc procedure for Runway 31, becoming visual with the runway during the latter stages of the arc portion of the procedure. The crew configured the aircraft for landing with the landing gear selected DOWN and the flaps 35 degrees set. The commander, who was the pilot flying, flared the aircraft for touchdown at the normal height. As the aircraft continued to sink, he realised that the landing gear was not down. The PF carried out a go-around and following a recycling of the landing gear flew past the ATC tower. The controller confirmed that the landing gear was down and the aircraft diverted back to Aberdeen Airport where a safe landing was made.

During the go-around, the underside of the fuselage and the tips of the right propeller contacted the runway surface.

The investigation identified contamination of the landing gear selector switch points which had acted as an electrical insulator. This prevented current flow to the landing gear lowering system and audio warning systems. The 'three green' landing gear lights are independent of this circuit but were not checked by the flight crew. They were, therefore, not aware that the landing gear was retracted.

The accident was notified to the Air Accident Investigation Branch (AAIB) by Wick Air Traffic Control (ATC) at 1800 hrs on 3 October 2006.

SAFETY RECOMMENDATION - 2007-079

It is recommended that BAE Systems amend their SOPs for the 'Landing Checks' to include confirmation by both PF and PNF that the landing gear handle is selected down and that three green indicator lights are illuminated. They should encourage operators of the Jetstream aircraft to adopt the revised procedure.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-080

It is recommended that BAE Systems should review the safety analysis for the Jetstream 32 landing gear system to include cases where the gear selector lever can be moved to the 'DOWN' position with the landing gear remaining retracted and the audible warning inhibited.

Status - Response Awaited - open

Swearingen Metro III	Lasham Airfield, Hampshire	10 October 2006	Incident

AAIB Bulletin: 10/2007
FACTOR: N/A

Synopsis

The lightly loaded aircraft commenced the takeoff with its centre of gravity towards the forward end of the permitted range; the co-pilot was the handling pilot. The aircraft did not respond as

expected when he attempted to rotate the aircraft and he handed control to the Commander. The Commander aborted the takeoff and the aircraft over-ran the paved surface of the runway on to an area of grass stubble.

The investigation found no technical fault that could have contributed to the apparent control problem. Experience had shown that, for this type of aircraft, a large aft control column movement is required during rotation when the centre of gravity is close to the forward limit. Although there was nothing in the pilots' training records that could have had a bearing on this event, the crew was relatively inexperienced and it was considered that this was a factor in the incident. The aircraft has subsequently carried out a number of uneventful takeoffs and responded normally to control inputs.

SAFETY RECOMMENDATION - 2007-060

It is recommended that the European Aviation Safety Agency require operators to conduct an annual operational check and evaluation of recordings from FDRs to ensure the continued serviceability of the system. The annual check should require, as a minimum, a readout of the FDR and an evaluation of the data, in engineering units, in order to establish compliance with recording duration, error rates and validity of all recorded parameters.

Response

Attachment D to ICAO Annex 6 Part I provides guidance for a proper maintenance of the recorders. Relevant provisions exist in EUROCAE Annex I-A to ED-112. Consideration is given as to making these provisions part of the relevant European regulations.

Status - Accepted - closed

Raytheon Hawker 800XP - H25B	**After departure from London City Airport**	**31 October 2006**	**Incident**

AAIB Bulletin: 1/2008
FACTOR: F3/2008

Synopsis

This aircraft experienced significant navigation problems after taking off from London City Airport (LCY) and was unable to comply with the Standard Instrument Departure (SID). The crew were able to recover heading information after approximately 10 minutes and landed back at LCY without incident. It transpired that several similar incidents had previously occurred with other aircraft and there have been similar incidents subsequent to this one. The cause of the problem was identified as strong magnetic anomalies in the holding area for Runway 28. Six Safety Recommendations have been made.

SAFETY RECOMMENDATION - 2007-119

It is recommended that ICAO amend Annex 14 to highlight the importance of ensuring that no airport infrastructure is allowed to alter significantly the local earth's magnetic field density in areas where aircraft hold prior to departure.

Response

In this regard, I am pleased to inform you that the Air Navigation Commission will study the issue raised in the safety recommendation further and develop new specifications, if necessary, for inclusion in Annex 14, Volume I.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-120

It is recommended that the CAA amend CAP 168 to require airport operators to ensure that no airport infrastructure is allowed to alter significantly the local earth's magnetic field density in areas where aircraft hold prior to departure.

Response

The CAA accepts this Recommendation. CAP 168 – Licensing of Aerodromes will be amended by July 2008 to require aerodrome license holders to ensure that no airport infrastructure is allowed to alter significantly the earth's local magnetic field density in areas where aircraft hold prior to departure.

CAA Action

CAP 168 has undergone a major revision, and Recommendation 2007-120 has been included. Due to the number of changes to CAP 168, the CAA is consulting with industry in accordance with guidance from the Better Regulation Executive. The consultation period will close on 12 July 2008 and an updated CAP 168 will be published as soon as possible thereafter.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-121

It is recommended that EASA require airport operators to ensure that no airport infrastructure is allowed to alter significantly the local earth's magnetic field density in areas where aircraft hold prior to departure.

Response

The EASA is not competent for the safety regulations of aerodromes. Although the AAIB is expecting EASA to be soon competent in this field, the nature of the safety recommendation leads us to forward it to the competent authority, for it to be considered as soon as possible.

Status - Rejected

SAFETY RECOMMENDATION - 2007-122

It is recommended that the Civil Aviation Authority (CAA) should ensure that NOTAM C0248/07, relating to magnetic anomalies at London City Airport, is superseded by an appropriate amendment to the AIP in the form of a 'Warning' within the 'Local Traffic Regulations' section of the entry for London City Airport.

Response

The CAA accepts this Recommendation. The AIP entry for London City Airport will be updated by June 2008 with a 'Warning' within the 'Local Traffic Regulations' section which reflects the content of NOTAM C0248/07. This will remain in effect until such time as all the remedial works at London City Airport have been completed and the magnetic flux anomalies have been rectified.

CAA Action

The warning section of AIP has been updated: "When using Runway 28 Hold, some aircraft types may experience magnetic disturbances, affecting the Heading Reference System. Pilots should ensure that when positioned for take off from Runway 28, the Aircraft Heading Reference is checked against the Runway alignment. Flight crew noticing a compass anomaly on departure should notify ATC."

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-123

It is recommended that the CAA should require each operator approved to operate at London City to include in its Category C brief for that airport an entry highlighting the presence of the magnetic anomaly and procedures for mitigating its effects.

Response

The CAA accepts this Recommendation. In order to ensure the information reaches all operators whether of UK or foreign origin, the CAA will require London City Airport to include, as part of its procedure for approving current and future operators at the airport, information that each operator can include in their Category C brief for that airport, highlighting the presence of a magnetic anomaly and a procedure to mitigate the effects of that anomaly. The information will be provided to operators by April 2008.

Recommendation 2007-123 has been forwarded to London City's customer airlines together with a request for a modification to their Category C brief for London City in order to meet the requirements of the recommendation. This was communicated through the members of the London City Airport Pilot Forum. Members of the forum have access to a unique web site set up for this group; details of the Recommendation are also posted there.

London City's process for new operator approval now includes the requirement to ensure the Operations Manual contains the Category C brief for London City covers the procedure for checking and correcting heading discrepancies following the use of the 28 Hold. This will form part of the CAA's assessment of the operator's training program for London City.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-124

It is recommended that the CAA should require London City Airport Ltd to mitigate the effects of the magnetic anomaly in the loop hold so that it no longer affects the normal operation of aircraft.

Response

The CAA accepts this Recommendation. London City Airport Ltd has commenced work to mitigate the effects of the magnetic field fluctuations in the loop hold. In addition London City Airport Ltd is ensuring that construction methods used for the new East Apron development do not introduce further anomalies. The CAA is monitoring this work.

CAA Action

Work has been delayed as a new contractor is appointed due to factors outside of London City Airport Ltd's control. When work resumes it will tackle primarily those areas designated as having the predominant flux irregularities. A follow-up survey of the flux will be carried out immediately after the work has been completed, at which point the results can be published as to what the overall magnetic flux characteristics of the Hold have changed to. A programme of dates to test the new East Apron following the casing reduction work under the taxi-lane and Delta Hold took place in May 2008 to produce the first package of results and will then be expanded to survey the rest of the apron.

Status - Accepted - closed

Airbus A320-214	Bristol Airport	15 November 2006	Accident

AAIB Bulletin: 4/2008
FACTOR: N/A

Synopsis

The Air Accidents Investigation Branch (AAIB) was notified by the Bristol Tower ATC watch supervisor on 16 November 2006 of an incident involving a diversion of an A320 aircraft, G-BXKD, to Manchester Airport. The diversion resulted from a landing gear malfunction after takeoff from Bristol Airport. Subsequent enquiries revealed that the landing gear had been damaged during the previous landing at Bristol on 15 November.

The A320 aircraft had landed at Bristol Airport in a strong crosswind, with associated turbulence. During the shutdown procedure the crew were presented with an automatically generated aircraft warning indicating that certain parameters had been exceeded during the landing. The crew recorded the exceedence in the Technical Log. A type-qualified engineer met the aircraft on arrival and complied with his understanding of the technical checks required after the generation of such a warning. Substantial damage had occurred to the landing gear, but this damage was not detected before the aircraft was cleared for a further flight. On that flight the crew experienced landing gear problems after take-off, together with other warnings, and diverted to Manchester Airport. Following further engineering activity, the aircraft was again released for flight without the damage being detected; this resulted in a repeat of the gear problems and other warnings after takeoff. The damage to the landing gear was eventually discovered after the subsequent landing at Manchester.

SAFETY RECOMMENDATION - 2007-105

Airbus amend their maintenance documentation effectivity coding to clearly state if the relevant section is only applicable to 'PRE SB' aircraft, as well as those that are already marked as being 'POST SB'.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-106

Airbus amend the A319/A320/A321 AMM to highlight the possibility of internal damage to the landing gear and to recommend the jacking of an aircraft following a fault of sensor 20GA or 21GA on a subsequent flight, after the generation of a LOAD <15> report.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-107

Airbus amends the A319/A320/A321 AMM ATA 31-37-00 to incorporate the classifications of landings quoted in AMM 05-51-11-200-004A into the text and the flow chart.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-108

Airbus amend the LOAD <15> report to describe clearly the classification of the event that generated the report, similar to those defined in AMM 05-51-11-200-004A.

Status - Response Awaited - open

Embraer-145EU	Bristol Airport	29 December 2006	Incident

AAIB Bulletin: 3/2008
FACTOR: N/A

Synopsis

During the landing roll, in a strong crosswind, the aircraft's rudder hardover protection system (RHPS) tripped, which resulted in the loss of both rudder hydraulic systems and reversion to the rudder's mechanical mode. Despite the loss of hydraulic power to the rudder, the commander was able to maintain directional control using a combination of asymmetric braking and rudder. There was no fault found in the aircraft and no evidence of a rudder 'runaway'; high rudder pedal or brake pedal force application by the commander, or incorrectly adjusted pedal force microswitches, may have triggered the RHPS.

SAFETY RECOMMENDATION - 2007-112

It is recommended that Embraer SA should review and modify the design of the RHPS (rudder hardover protection system) in the EMB-145, to prevent unnecessary RHPS triggering.

Response

EMBRAER believes that this recommendation requires further investigation before going to any implementation to the RHPS. As mentioned in item 12, EMBRAER would like to recommend a test bench of the spring cartridge against its specification. Also, the operational factor should be revisited, to verify the possibility of a force fight on rudder pedals, checking if one pilot could have applied rudder pedal inputs while the other pilot was applying an opposite input.

Status - Partially Accepted - open

CRJ-100 ER	Rwy 20 Southampton Airport	17 January 2007	Incident

AAIB Bulletin: 2/2008
FACTOR: N/A

Synopsis

The aircraft suffered a failure of the No 3 hydraulic system when lowering the landing gear on approach. The commander took what he believed to be the necessary actions prior to landing but without apparent reference to the QRH. As a result the aircraft landed with one of the No 3 hydraulic system pumps still running and the nosewheel steering ON, contrary to instructions in the Quick Reference Handbook (QRH). This resulted in an uncommanded steering input to the right after touchdown and the aircraft departed the runway.

SAFETY RECOMMENDATION - 2007-101

It is recommended that Bombardier Aerospace review this design of nose gear steering system, in the CRJ100 and other company products, to prevent uncommanded nose gear steering following a hydraulic failure.

Status - Response Awaited - open

Airbus A319-131	Stand 415, Heathrow	12 February 2007	Incident

AAIB Bulletin: 2/2008
FACTOR: N/A

Synopsis

The aircraft was taxiing on to Stand 415 following the guidance provided by the Stand Entry Guidance (SEG) system. The stand's airbridge had previously been repositioned in order for its floor to be replaced, in accordance with an Airside Works Instruction (AWI) drawn up by the airport operator. The AWI specified that a marshaller was required for all 'live' arrivals on the stand. The airline operator's Turn Round Manager (TRM) had not been made aware of this requirement and had earlier switched on the SEG system. No marshaller attended the aircraft's arrival and the commander considered that the airbridge was sufficiently clear. On seeing that the aircraft's left wing tip was about to strike the airbridge the TRM, and a colleague, gave the 'stop' sign and activated the stop button on the SEG system. The aircraft stopped four metres short of its designated stop line, during which the left wing tip made contact with the curtain on the airbridge. There were no injuries and the aircraft was undamaged. One recommendation is made to the airport operator.

SAFETY RECOMMENDATION - 2007-102

It is recommended that the airport operator, Heathrow Airport Limited, should implement a policy to disable the Stand Entry Guidance system on any stand which has restrictions placed on its use.

Status - Response Awaited - open

Aeroplanes <> 2,250kg and 5,700kg MTWA

Cessna T310R	**Hotham, South Cave, Humberside**	**13 March 2004**	**Accident**

AAIB Bulletin: 4/2005
FACTOR: F15/2005

Synopsis

The aircraft departed from Humberside airport on an instructional flight and was being flown in clear air at medium level when radar contact was lost. Shortly afterwards it impacted the ground in a steep nose-down attitude at high speed which killed both pilots on board.

SAFETY RECOMMENDATION - 2005-001

The Federal Aviation Administration (FAA) of the USA should require all flying training performed in the United Kingdom for the award of FAA professional pilots' licences to be conducted by flying training organisations that have been evaluated and approved by the FAA.

Response

We do not concur with this safety recommendation for the following reasons:

It cites the United Kingdom Air Accidents Investigation Branch's (UK AAIB) AAIB Bulletin No. 4/2005 regarding an accident involving an instructor pilot in a Cessna T310R, G-OGTX. However, the bulletin clearly states that there is no connection between the cited accident and the observation that training for a U.S. pilot certificate is not being conducted at an FAA-approved pilot school in accordance with the Joint Aviation Authorities requirement.

This is not a safety issue, but a fundamental issue on the requirement for overseeing pilot training and certificating/licensing pilots. The United States is in compliant with the pilot training requirements of the International Civil Aviation Organization Annex 1 - Personnel Licensing. Furthermore, it is incumbent on the State in which the pilot training is occurring to establish minimum oversight requirements for such training, even if it is for the issuance of a U.S. pilot certificate of rating.

We appreciate the United Kingdom Air Accidents Investigation Branch's diligent efforts in aviation safety.

Status - Rejected

Beech B200	**Within the Scottish Terminal Manoeuvring Area (TMA)**	**28 March 2006**	**Incident**

AAIB Bulletin: 6/2007
FACTOR: F21/2007

Synopsis

After take off and whilst in IMC, the commander noticed a gradual and progressive loss of information on his flight instruments; this was followed by a loss of radio communications and the commander concluded that the aircraft had suffered a major avionics failure. When ATC became aware of the loss of communications, they arranged for an RAF Tornado aircraft to intercept G PCOP. While attempting to guide the aircraft below cloud, the RAF crew saw it enter cloud in an apparently uncontrolled fashion and they transmitted a ‘MAYDAY RELAY’

message. However G PCOP re-appeared from the cloud. Eventually G-PCOP descended to VMC below cloud and landed at RAF Leuchars.

On the ground, with an electrical source attached to the aircraft, the instruments and radios worked correctly. After inspection, the aircraft was ferried by another pilot to Blackbushe the next day for further examination. On arrival at Blackbushe, inspection revealed damage to the outer wing skins and wing leading edges. The damage to the aircraft was characteristic of it having been subjected to abnormally high flight loads and the outer wing panels had to be replaced. Despite extensive investigation, no defects were found with the electrical generation and distribution systems of the aircraft. Recommendations were made relating to information in the Airplane Flight Manual and to the certification standards of the aircraft.

SAFETY RECOMMENDATION - 2007-022

The Raytheon Aircraft Company should amplify the information in the Beech 200 series Airplane Flight Manuals to reflect that the generators can be reset regardless of battery voltage but they cannot be reset if the IGNITION AND ENGINE START switches are in the ON position.

Status - Response Awaited - open

Cessna T303 - Crusader	Denham Green, Buckinghamshire	5 August 2006	Accident

AAIB Bulletin: 10/2007
FACTOR: N/A

Synopsis

The aircraft was completing a day VFR flight from Durham Tees Valley Airport to Denham Airfield. As the pilot turned on to the final approach for Runway 06, the right engine ran down. The pilot attempted to increase power on the left engine but it did not appear to respond. The airspeed decayed and the right wing dropped. The aircraft descended into a wooded area short of the runway, seriously injuring all those of board.

The investigation identified that fuel starvation of both engines was the cause of the accident. One Safety Recommendation is made.

SAFETY RECOMMENDATION - 2007-086

The Federal Aviation Administration should review the Cessna T303 Crusader Information Manual and Checklists to ensure that clear and unambiguous information is provided for the operation of the fuel crossfeed system.

Response

Below is the only response to date that I have received from our small airplane directorate regarding 2007-086. I will ask them for an update as they are obviously late in updating me.

INTERIM RESPONSE OF 12-04-2007

We have received FAA Safety Recommendation 07.157 and have assigned it to personnel in our Wichita Aircraft Certification Office

We have requested Cessna Aircraft Company to investigate the areas discussed by these recommendations and review the appropriateness of implementing them by January 2, 2008.

We will provide your office with our action plan regarding this recommendation prior to January 8, 2008.

Status - Response Awaited - open

Cessna 401	Blackpool Airport, Lancashire	21 January 2007	Accident

AAIB Bulletin: 10/2007
FACTOR: N/A

Synopsis

Following an uneventful flight, and during the rollout, the right main landing gear (MLG) collapsed. Subsequent investigation revealed a fatigue failure and overload of the arm attachment holes on the right MLG torque tube and the crack appeared to have been growing since around 2001. A Supplementary Inspection Document (SID) issued by Cessna in 2004 recommended inspections of the arm attachment holes of the torque tube but the inspection had not been carried out N401JN. This SID is mandatory on aircraft registered in Europe used for commercial air transport, and from September 2008 for those used privately. The SID is not mandatory for US registered aircraft, such as N401JN.

SAFETY RECOMMENDATION - 2007-059

It is recommended that the Federal Aviation Administration mandate Cessna SID 32-10-05 for the Cessna 401/402 main landing gear torque tube, and mandate similar Cessna SIDs relating to main landing torque tubes of similar design.

Status - Response Awaited - open

DHC-2 Mk.III Turbo-beaver	Headcorn Airfield, Kent	11 March 2007	Accident

AAIB Bulletin: 12/2007
FACTOR: F1/2008

Synopsis

The pilot commenced a takeoff on Runway 21 at Headcorn Airfield with eight parachutists on board. The flaps were not selected and the aircraft failed to get airborne in the available distance. The pilot aborted the takeoff but was unable to prevent a collision with a parked aircraft. The pilot received fatal injuries as a result of the collision.

SAFETY RECOMMENDATION - 2007-098

It is recommended that Headcorn Aerodrome should install markings that indicate the southern end of Runway 21.

Response

Relating to runway markers I have for years debated with the Tiger Club the use of these and for their operation they prefer to not have any markings, I am aware of concrete surface mounted markers but as with incidents at other aerodromes some of the tail skid aircraft have come to grief, the skids sometimes dig in during normal operation on grass and when meeting concrete can stop abruptly ending up with damage to the aircraft.

On the main runway 11/29 I have a greater area to use and can space the markers wider apart to facilitate the Tigers and Stampes.

May I suggest as the ground is sloping that we erect two frangible vertical markers on the fence line in order that the pilot can see them when lining up on Runway 21

The idea is an old one as during the war when the mustangs operated from runway 11 Smarden church spire was directly on track and a huge benefit !!

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-099

It is recommended that the Civil Aviation Authority should review the requirement to provide runway edge and obstacle markings for unlicensed runways from which aerial work operations are conducted.

Response

The CAA accepts this Recommendation and has completed its review of the requirement to provide runway edge and obstacle markings for unlicensed runways from which aerial work operations are conducted. The CAA has concluded that improvements are required only in relation to those unlicensed runways used for passenger-carrying aerial work operations. As this is possible only in the case of passengers who have given valuable consideration to conduct parachuting operations, the CAA will amend CAP 660 – Parachuting by June 2008 to include appropriate guidance on runway edge and obstacle markings for unlicensed runways from which aerial work operations are conducted. Placing such requirements in either CAP 428 – Safety Standards at Unlicensed Aerodromes, or CAP 168 Licensing of Aerodromes would not necessarily reach the target audience.

CAA Action

CAP 660 has been amended and the new edition includes a requirement for unlicensed runways used for parachute operations to have side and end markings.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-100

It is recommended that Headcorn Aerodrome should amend the Operating Procedures section of the Headcorn Aerodrome Manual to prevent any aircraft entering Runway 21 or its overrun when an aircraft is taking off or landing on Runway 21.

Response

Accepted and I will implement this immediately.

Please thank your team on behalf of the staff of Headcorn for their support and candid nature of their investigations.

Status - Accepted - closed

Beech B200	**Southend Airport, Essex**	**24 March 2007**	**Accident**

AAIB Bulletin: 4/2008
FACTOR: N/A

Synopsis

After selecting the landing gear to UP after takeoff from Caen, the 'gear unsafe' light remained on. The flight crew established that the nose landing gear had neither retracted nor remained locked down and, despite recycling the gear and attempted use of the emergency gear lowering system, the crew were unable to lock the nose leg down. Upon landing at Southend Airport, the leg collapsed, causing damage to the fuselage nose structure and the propeller blade tips. The investigation revealed that the nose gear actuator had been affected internally by corrosion,

precipitated by water ingress, which led to the failure of the threads within the actuation nut of the actuator. It had completed a total of 1,449 cycles of its 8,000 cycle life, but only 532 cycles since its last 1,000 cycle check.

One Safety Recommendation is made.

SAFETY RECOMMENDATION - 2007-126

It is recommended that the Federal Aviation Administration require Raytheon (Beechcraft) to review the maintenance requirements of the nose landing gear actuator fitted to the Beech B200 King Air series of aircraft, and any other model using a similar design of actuator, with regard to the requirement of periodic lubrication and the periodicity of inspections.

Response

We have received FAA Safety Recommendation 08.052 and have assigned it to the Airframe and Services Branch in the Wichita Aircraft Certification Office (ACO).

The Wichita ACO has requested Hawker Beechcraft Company to investigate the area discussed by this recommendation and review the appropriateness of implementing this recommendation by June 17, 2008.

We will provide your office with our response to Safety Recommendation 08.052 prior to July 8, 2008.

Status - Response Awaited - open

Aeroplanes = or < 2,250kg MTWA

Piper PA28-180	Nayland Airfield, Suffolk	28-Apr-2001	Accident

AAIB Bulletin: 1/2004
FACTOR: F7/2004

Synopsis

The aircraft, flown by two qualified and experienced pilots, suffered a power loss necessitating a forced landing. At that time the aircraft was in a position to land on Nayland Airfield in Essex. At a late stage in the approach however, the handling pilot was unable to prevent the aircraft's right wing from impacting with a large tree; the right wing was torn from the fuselage and the aircraft came to rest inverted on its right side. Both pilots, one of whom was seriously injured, were able to vacate the cabin with external assistance. The fuel selector was selected to the right tank that was ruptured in the impact, and although it was not possible to prove that this tank contained fuel at impact calculations showed that it should have contained approximately 8 US Gallons. Subsequent examination and testing of the engine and its components revealed no anomalies and it was concluded that, due to the ambient weather conditions at the time, induction system icing was the most likely cause of the power loss. A recommendation has been made to the CAA for measures to be taken to significantly reduce the numbers of accidents resulting from forced landings, brought about by induction system icing.

SAFETY RECOMMENDATION 2003-125

It is recommended that the CAA take measures, both technological and procedural, including the review and promulgation of published material and the re-assessment of warning systems and their capabilities and reliability, to significantly reduce the number of potential accidents, to UK registered piston-engined aircraft, resulting from engine failures brought about by induction system icing.

Response

The CAA partially accepts this Recommendation. A change to the engine design certification requirements was introduced in the initial issue of the EASA Certification Specification for Engines (CS-E), which was published in October 2003. This change requires provision for the fitting of an induction thermometer or ice indicator as appropriate for the control of ice prevention systems. The CAA will review the output from the research activity to assess the potential need for further rulemaking

A review of the PPL training syllabus has been completed. This has shown that based on our current understanding, the subject of carburettor icing is adequately addressed. However, this will be re-evaluated as necessary, along with the subjects of ice prevention operating procedures and potential warning systems, in light of the results of a CAA sponsored Carburettor Icing research programme.

The CAA sponsored Carburettor Icing Programme is progressing towards the validation stage. This stage has been considerably delayed, primarily due to work timing issues with the preferred contractor. CAA has investigated the use of additional external technical support and a proposal is awaited, which will define new timescales for the work to be undertaken.

When the conclusions of the research programme are available the CAA will review its advice on the use of carburettor heat during an approach through to landing. In addition, the research report will be provided to EASA for information of action as appropriate. The target date for completion is June 2008.

The research report will be provided to EASA for information and action as appropriate.

Status - Accepted - closed

Robin DR400-180	**Little Staughton Airfield, Bedfordshire**	**26-Sep-2003**	**Accident**

AAIB Bulletin: 2/2005
FACTOR: F7/2005

Synopsis

The aircraft was being flown to an airfield for some pre-arranged scheduled maintenance. Shortly after a normal landing the aircraft veered violently to the left and the nose landing gear (NLG) collapsed. The nose landing gear was submitted for a detailed metallurgical examination which established that a fatigue failure had occurred in the narrow strap section of the upper support plate which had been the result of the circumferential separation of the fillet weld between the upper support plate and the outer cylinder and normal in-service loads. The weld was found to be of very poor quality. The cross-sectional dimensions of the weld were inadequate around the complete circumference for the type of joint and there was gross gas porosity in the area of the separation. Further examination revealed gross gas porosity throughout the complete circumference of the weld. The examination also revealed that the weld was the original manufacturing weld.

SAFETY RECOMMENDATION 2004-088

It is recommended that the Director Generale de L'Aviation Civile (DGAC), France assess the standard of welding made by Apex Aviation to ensure that it meets the European and French requirements and standards for the manufacture of aviation components.

Response

As mentioned in AAIB Bulletin No 2/2005, the European standards for welding practices and procedures in aerospace are still under development (ISO norm 24394).

Further to receipt of the AAIB Safety Recommendation 2004-088, DGAC France has carried out an investigation regarding both the norms and practices in force for welding of parts and appliances within Production and Maintenance organisations in France and the practices within APEX Industries (French manufacturer of aircraft type DR400).

According to production and maintenance regulations applicable in France, individual recognition of staff allowed to perform welding on aircraft is based upon norm AIR 191. Evidence of this qualification is checked in the frame of Production and Maintenance organisation approvals.

DGAC has therefore performed a technical check of APEX industries organisation. All people performing welding are adequately qualified and welding instructions are clearly indicated on the APEX drawings.

In conclusion, DGAC France has not identified any discrepancy against acceptable norms and standards regarding the staff qualification and the practices of welding performed by APEX Industries.

Status - Accepted - closed

Piper PA-46-350	Alderney Airport	30 January 2004	Accident

AAIB Bulletin: 3/2005
FACTOR: F14/2005

Synopsis

The pilot reported that he obtained the appropriate weather reports from the Met Office website prior to his flight from Bournemouth to Alderney. On arrival at Alderney he flew a normal 90 kt visual approach to Runway 26 with the landing gear indicating down and locked. The pilot estimated there to be a strong surface wind of 200º/20-30 kt, so he used the 'wing down' technique to cater for the cross-wind. The aircraft touched down at the normal point on the main wheels followed by the nosewheel. After touchdown the aircraft started to veer to the right necessitating the use of left rudder and brake to correct for this. The nose of the aircraft then lowered allowing the propeller to come into contact with the tarmac, and the aircraft came to rest approximately 200 metres into the runway. The pilot transmitted a short MAYDAY, turned off the fuel and shut down the aircraft. He was then able to vacate the aircraft normally via the main door. The fire services, that were already on 'weather standby', arrived on the scene about 20 seconds later.

SAFETY RECOMMENDATION - 2004-054

It is recommended that the European Aviation Safety Agency (EASA), through their Lead Authority/ JAA Team of Austro Control GmbH (ACG), and the FAA make the inspection requirements of the latest revision to Piper Service Bulletin 1103 mandatory by Airworthiness Directive action.

FAA Response

Piper Service SB 1103B requires periodic inspection of the nose landing gear actuator attachment area of the PA-46 series aircraft engine mount. Cracks have been found in old style "feet" where they are made from a two-pieced welded design. Newer designs for spares and production incorporate single piece machined feet.

The Atlanta ACO has reached a decision that AD action will not be mandated. We performed a detailed review of our service difficulty database to determine where other instances of SB 1103B type failures have occurred. We then followed the guidance provided in the Small Airplane Directorate Airworthiness Directive Manual Supplement to determine whether or not AD action is warranted.

We used the data from the service difficulty database, along with parameters such as the safety effect, aircraft population, aircraft type and usage, and time between events, to perform the attached risk assessment. The risk assessment indicates that manufacturers service information, in this case SB 1103B, is adequate to address potential safety concerns caused by cracks in the nose landing gear attach feet.

EASA Response

The Agency has investigated this recommendation in coordination with the FAA. A full review of FAA and NTSB databases shows only 4 occurrences that could be attributed to a lack of inspection as prescribed in Bulletin Service SB1103 on a total of 960 aircraft and almost 1.5 million flying hours. The FAA carried out a risk assessment and decided not to mandate this SB and EASA agrees with FAA.

Status - Rejected

Cessna U206F	**Beacon Village, near Honiton, Devon**	**27 June 2004**	**Accident**

AAIB Bulletin: 11/2005
FACTOR: F40/2005

Synopsis

Shortly after takeoff, with the pilot and five parachutists on board (including one 'tandem' pair), the aircraft's engine began to lose power. The pilot flew to the east away from the airfield for a distance of some 6 nm, achieving a maximum height of approximately 1,100 ft agl, before turning back. As the engine lost power the pilot was unable to maintain height and, in attempting a forced landing, the aircraft clipped the tops of several tall trees and crashed steeply nose down into a sloping grass field.

SAFETY RECOMMENDATION - 2005-040

It is recommended that the British Parachute Association review the contents of the Pilot's Information Manual to ensure that all information contained is accurate, presented clearly in a professional manner and that a procedure is adopted to ensure that any future changes are promulgated expeditiously to all member clubs.

Response

The Pilot Working Group (PWG) have recognised that the BPA Pilots' Manual is in need of review as the present edition has remained unchanged for many years. A skeleton draft has been prepared but some aspects of the final version will be governed very much by the content of this report which in turn is dependant upon its ratification by the BPA Council. For this reason the presentation of the new draft of the Pilot's Manual will take place once this report has been accepted and comment received upon its content.

Status - Accepted - closed

Diamond DA40D	**Field near Old Stratford, Northamptonshire**	**29 June 2004**	**Accident**

AAIB Bulletin: 10/2005
FACTOR: F35/2005

Synopsis

The aircraft's engine failed in flight when most of the oil was lost overboard. From an altitude of 2,000 feet the pilot carried out a successful forced landing into a field. The engine's turbocharger compressor had been damaged resulting in an imbalance that caused vibration. This vibration induced a fatigue failure of a bearing and a piece of this bearing passed into the oil scavenge pump, causing it to seize. With the pump seized, the oil separator overfilled causing the engine oil to escape via the breather vent line. This caused a loss of oil that resulted in the engine overheating and then seizing. Two Safety Recommendations were made to reduce the probability of a recurrence.

SAFETY RECOMMENDATION - 2005-048

The European Aviation Safety Agency (EASA) should consider requiring Thielert Aircraft Engines to modify its TAE-125 diesel engine's oil system to reduce the likelihood of sections from a failed turbocharger causing seizure of the oil scavenge pump.

Response (As published in 2007 Progress Report)

The EASA delegated National Aviation Authority's for the oversight of Thielert Aircraft Engines is the LBA, Germany. The LBA estimates that it is impossible to design the engine such that it will not fail as a result of a foreign object being introduced into the air intake system during maintenance.

Furthermore, a failure of the turbocharger can cause a drastic power reduction or in-flight shutdown for several reasons (reduction of air supply, releasing parts can seize intake valves of the combustion chamber and can destroy the valve train immediately). All these failure cases are improbable and are considered in the failure analyses and safety assessments during engine certification.

The Agency agrees with the objection of the manufacturer that a coarse mesh filter between the scavenge pump and the catchtank can introduce additional failure mechanisms. Experience from turbine engines has shown that strainers on the suction sides of oil pumps can cause problems in the oil system, especially when it is not possible or difficult to maintain them. For that reason the former JAR-E & 570 (a) (3) "The suction side of each pressure and scavenge pump shall be fitted with a strainer of adequate capacity to protect the pump and to ensure that the pump entry is not restricted under any starting or operating procedures." was deleted (NPA-E 23).

There is no need for an immediate catchtank design change. Operation of the engine outside the certified limits and/ or subsequent faulty maintenance may damage the engine at any time.

– **Rejected**

– ***Response (New)**

Thielert has published a Service Bulletin that meets the intent of the Safety Recommendation.

EASA has gone ahead and backed up this SB with their own AD and listed the G-HASO accident as the reason.

Status - Accepted - closed

Cessna FR172E	**Bracklesham Bay, West Sussex**	**7 August 2005**	**Accident**

AAIB Bulletin: 6/2006
FACTOR: F24/2006

Synopsis

The pilot and aircraft had been involved in two consecutive days of banner towing operations. The accident occurred on a positioning flight towards the end of the second day. Shortly after takeoff the aircraft was seen to turn left, with an increasing angle of bank, until it stalled and impacted the ground after turning through approximately 310. Although the banner hook installation showed evidence of interference with the rudder it was considered that this was not a factor in the accident and the most likely cause was a stall following the turn to the left with an increasing bank angle. This may have resulted from an attempt to maintain visual contact with a point on the ground, and would have been exacerbated by an increasing tailwind. It was also considered that the pilot may have been affected by fatigue after the two intensive days of banner towing.

SAFETY RECOMMENDATION - 2006-042

It is recommended that the European Aviation Safety Agency review the design of tow hooks fitted to banner towing aircraft with particular regard to eliminating any possibility of the hook interfering with the aircraft's primary flying control surfaces.

Response

The EASA does not agree with this recommendation. There is no evidence in the report supporting the view that the banner towing hook had any bearing on the accident.

***The AAIB response: Whilst it is correct that there is no evidence that the banner tow hook had any bearing on the accident, it is disappointing that the EASA is content that the tow hook, which is certified, clearly impinges upon one of the aircraft's primary flying controls.

Status - Rejected

Reims Cessna F152	**Meden Vale, Nottinghamshire**	**28 January 2006**	**Accident**

AAIB Bulletin: 1/2008
FACTOR: F4/2008

Synopsis

After approximately 20 minutes of flight the engine rpm started to decrease, with the engine running unevenly and producing severe vibration prior to stopping. The pilot successfully landed the aircraft in a field, with no injury to the occupants. An engineering examination revealed that the No 4 cylinder had separated from the engine due to a fatigue crack that had originated from an external surface corrosion pit. A search of the Civil Aviation Authority's Mandatory Occurrence Reporting database revealed 23 similar events. The Bureau D'Enquetes et D'Analyses Pour La Securite De L'Aviation Civile (BEA) has reports of 34 similar events occurring in France.

SAFETY RECOMMENDATION - 2007-089

It is recommended that the Civil Aviation Authority amend the title of Airworthiness Notice No.12, Appendix 61 to 'Retention of Records' to reflect the requirement stated within the Notice to retain records at all times, not just after an incident or accident.

Response

The CAA accepts this Recommendation. Airworthiness Notice No 12 Appendix 61 was cancelled in October 2007. Its content was transferred to CAP 562 – Civil Aircraft Airworthiness Information and Procedures (Issue 2 dated September 2007), in part to Leaflet 1-5 entitled 'Aircraft, Engine and Propeller Log Books' and also to Part 11, Airworthiness Information Leaflet 11-22 Appendix 4-5. Leaflet 1-5 prescribes that a separate log book must be kept for each aircraft registered in the UK, for each engine and for each variable pitch propeller fitted to such aircraft. Paragraph 7 specifically refers to the transfer of responsibilities between an old and new owner. All log books and associated records must be retained until two years after the aircraft engine or propeller is destroyed or permanently withdrawn from use, whoever may be the custodian of the records.

Leaflet 11-22 Appendix 4-5 entitled Retention of Records – Post Incident and Accident Investigations' specifically refers to the intent of the above AAIB recommendations and includes references to the European Aviation Safety Agency and Air Navigation Order requirements for retention of records in line with the AAIB recommendations, reminding owners / operators of their responsibilities.

(Article 22 of the ANO also prescribes the legally required information which must be recorded, the timescales within which the record must be made and the person responsible for keeping the log books. ANO Schedule 6 further emphasises the requirements for the retention of records.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-090

It is recommended that the Civil Aviation Authority amend Airworthiness Notice No.12, Appendix 61 to reflect, throughout Appendix 61, the requirement to retain maintenance and overhaul records for two years after the aircraft, engine, propeller or component has been destroyed or permanently removed from service, where reference is made to those records in the log books or component record cards.

Response

The CAA accepts this Recommendation. Airworthiness Notice No 12 Appendix 61 was cancelled in October 2007. Its content was transferred to CAP 562 (Issue 2 dated September 2007); in part to Leaflet 1-5 entitled 'Aircraft, Engine and Propeller Log Books' and also to Part 11, Airworthiness Information Leaflet 11-22 Appendix 4-5. Paragraph 7 of Leaflet 1-5 specifically refers to the transfer of responsibilities between an old and new owner. All log books and associated records must be retained until two years after the aircraft engine or propeller is destroyed or permanently withdrawn from use, whoever may be the custodian of the records.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-091

It is recommended that the European Aviation Safety Agency (EASA) amend EASA Part 145 (and Part M as necessary) to require that maintenance and overhaul records that are referred to in airframe, engine and propeller log books, and component record cards, are deemed to be part of that log book or record card and are retained until the aircraft, engine, propeller or component has been destroyed or permanently removed from service.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-092

It is recommended that the European Aviation Safety Agency (EASA) should amend EASA Part 145 (and Part M as necessary) to require that all EASA Part 145 approved organisations supply the aircraft operator with the records associated with work that they perform on an aircraft, engine.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-093

It is recommended that, to enable aircraft operators to fulfil the requirements of the Air Navigation Order and EASA Part M, the Civil Aviation Authority review the requirements for, and monitoring of, EASA Part 145 approved organisations providing the aircraft operator with the records associated with work that they perform on an aircraft, engine, propeller or component.

Response

The CAA accepts this Recommendation. The CAA has reviewed the regulations and our oversight methodology. The CAA believes that the current provisions of Regulation EC 2042/2003 (Part M and Part 145) adequately address this issue. The CAA notes that at the time of the accident the requirements of Part M for aircraft of this type were not yet fully implemented, scheduled for September 2008.

With regard to the CAA's oversight methodology, there is a programme of audits for each approved organisation, in relation to Part M, particularly in relation to Part M subpart G and Continuing Airworthiness Management, and Part 145 - Maintenance of Commercial Air Transport. This oversight through audit will be extended to cover maintenance organisation approved in due course, when the Regulations are fully implemented, to Part M subpart F, which deals with maintenance of non-Commercial Air Transport aircraft. Those audits include assessment of the organisation's procedures for monitoring the required records and to monitor component overhaul and life limitations.

The CAA is also obliged to put in place a programme of aircraft surveys under the requirements of Part M, M.B.303. The CAA's current Aircraft Continuing Airworthiness Monitoring system for UK aircraft and organisations has been enhanced to cater for this and such surveys will involve a review of the aircraft records where possible. This, in conjunction with the programmed audits of Part M Subpart F organisations, Maintenance - non-Commercial Air Transport, will allow the CAA ample opportunity to monitor the adequacy of records management.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-094

It is recommended that the European Aviation Safety Agency review the Airworthiness Directive 1998-225(A) R6 issued by Direction Generale de l'Aviation Civile (DGAC) in France with a view to issuing an EASA Airworthiness Directive to cover this area of concern.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-095

It is recommended that the Federal Aviation Administration review the continued airworthiness of cylinders manufactured prior to the year 2000 that are fitted to Lycoming O-235 series engines.

Status - Response Awaited - open

Diamond HK 36 TC	**Enstone Airfield, Oxfordshire**	**12 June 2006**	**Accident**

AAIB Bulletin: 5/2007
FACTOR: F16/2007

Synopsis

Following a normal approach and touch-down a loud scraping noise was heard from the front of the aircraft which was followed by the nose wheel detaching from the nose leg. The metallurgical examination revealed that both the nose landing gear wheel fork arms had failed in overload and that the materials were of the correct specification.

SAFETY RECOMMENDATION - 2006-115

It is recommended that the European Aviation Safety Agency (EASA) review the design, manufacturing and material specifications for Diamond HK36-TC nose landing gear wheel fork arms for their suitability for continued airworthiness.

Response

The EASAIACG Project Certification Manager has reviewed the existing in-service data as well as the design specific drawings. Design change number AM 140 issued in 1998, improved the initially certified design in the cracked area. All forks cracked at that time were identified as overload failures under rough operating conditions.

In EASA's and the manufacturer's opinion, a nose landing gear pivot friction below tolerance leading to 'shimmy' on landing, and/or hard landing, is likely to have been a contributing factor.

Status - Accepted - closed

Piper PA-28-181	**Maritime and Coastguard Agency (MCA) Daedalus, Lee-on-Solent, Hampshire**	**12 July 2006**	**Accident**

AAIB Bulletin: 3/2007
FACTOR: F9/2007

Synopsis

Construction work at the airfield formerly known as HMS Daedalus and Lee-on-Solent, now known as MCA Daedalus, resulted in the erection of a perimeter fence incorporating various gateways for use by aircraft and vehicles. A pilot, unable to find a new grass taxiway, continued to taxi on a metalled perimeter taxiway until coming to one of the gateways, which was only just wide enough for the aircraft. In attempting to pass through the gateway, the aircraft's left wing struck the gate. Although information was available to the pilot about the gate and the new grass taxiway, the entrance to the taxiway was not obvious. Moreover, there was no readily available diagrammatic plan of the airfield illustrating its layout and the positions of obstructions.

SAFETY RECOMMENDATION - 2007-035

The Maritime Coastguard Agency should require its airfield operator at MCA Daedalus to take the following actions:

a. Apply appropriate markings to the grass taxiway in the vicinity of the Coastguard Hangar to delineate its boundaries for the safe manoeuvring of aircraft.

b. On completion of the fence construction work, publish an up-to-date plan of the airfield that includes the position of the new perimeter fence, gateways and grass taxiways.

Response

The Maritime and Coastguard Agency (MCA) accepts both recommendations. Markings will be applied to the grass taxiway in the vicinity of the Coastguard Hangar to assist pilots to take the correct course, avoiding the gateway. Also bad-ground markers will be placed on 12 metres apart either side of the taxiway immediately before the gate so that pilots are made aware of the restriction before damaging their wing-tips on the gate. Finally, on completion of the construction work, an accurate plan of the airfield including the position of the perimeter fence, permissible gateways and all taxiways will be published.

Status - Accepted - closed

Europa	**Near Portbury, North Somerset**	**16 July 2006**	**Accident**

AAIB Bulletin: 3/2007
FACTOR: F14/2007

Synopsis

Whilst cruising at 3,500 ft near the Severn estuary, the aircraft suffered an alternator bearing seizure and smoke from the drive belts entered the cockpit. The engine stopped, but, due to its free-wheel mechanism, the propeller continued to rotate increasing the drag and causing a significantly higher rate of descent during the subsequent forced landing than for a propellor at idle or stopped.

The aircraft landed in a small field, struck a hedge and suffered major damage to the composite fuselage structure fore and aft of the cockpit. Both occupants suffered minor injuries.

SAFETY RECOMMENDATION - 2007-033

It is recommended that the Popular Flying Association review the use of dual belts on NSI EA81 engines to minimise the consequences of an alternator seizure.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-034

It is recommended that the Popular Flying Association (PFA) advise all owners and operators of PFA Permit-to-Fly aircraft which have a free-wheeling fixed pitch propeller, that such aircraft may have a high rate of descent if the propeller free-wheels following an engine failure.

Status - Response Awaited - open

Slingsby T67M MKII	**Hoxne, Suffolk (close to Norfolk border)**	**16 July 2006**	**Accident**

AAIB Bulletin: 10/2007
FACTOR: N/A

Synopsis

The pilot was performing a solo aerobatics sequence, in good weather. The aircraft appeared to depart from controlled flight at a height of around 4,500 ft agl during a looping manoeuvre and settled into an erect spin to the left. After the aircraft had descended about 2,500 ft, the pilot transmitted a MAYDAY call in which he said that he was in a spiral dive and could not recover. The aircraft continued to spin and descend vertically until it struck the ground. The pilot was fatally injured in the impact.

No signs of a pre-impact anomaly with the aircraft were found, but the amount of evidence available from the wreckage was limited by severe ground fire damage and the possibility that a pre-impact deficiency had contributed to the accident could not be eliminated.

Two recommendations have been made, regarding the wearing of parachutes and the performing of solo aerobatics while undergoing a course of instruction.

SAFETY RECOMMENDATION - 2007-081

It is recommended that the Aircraft Owners and Pilots Association advise those pilots undertaking their Aerobatics Course not to fly solo aerobatics until they have been trained and proved competent in spin recognition and recovery, and their instructor has advised them that they are competent to practise specific aerobatic manoeuvres solo.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-082

It is recommended that the Aircraft Owners and Pilots Association provide comprehensive and robust advice on the use of parachutes for flights where spinning and aerobatics are planned, reflecting the guidance given in the Civil Aviation Authority's Safety Sense Leaflets.

Status - Response Awaited - open

Cessna F150L	**Eastwood Park, Southend-on-Sea, Essex**	**19 July 2006**	**Accident**

AAIB Bulletin: 7/2007
FACTOR: F25/2007

Synopsis

The student, who was training at Southend Airport towards the issue of a Private Pilot's Licence, was on his second solo flight. Having established the aircraft on final approach, the student was instructed to go around so that a faster aircraft approaching to land behind his aircraft would not catch up with it. Both the controller's instruction and the student pilot's acknowledgement involved non-standard RTF phrases. In order to avoid any possibility of conflict between the two aircraft the student was then instructed to turn away from the final approach track. During this manoeuvre, the student flew level at low altitude and it is likely that the aircraft remained in the approach configuration with insufficient power applied to maintain flying speed. The aircraft stalled at a height from which recovery was impossible and it struck the ground in a public park approximately 1 nm from the airport. The student pilot was fatally injured. Two Safety Recommendations were made.

SAFETY RECOMMENDATION - 2007-036

It is recommended that London Southend Airport includes information relating to the notification and handling of flights by inexperienced solo pilots in its Part 2 of the Manual of Air Traffic Services.

Response

We confirm that we accept the recommendation and will introduce this at the earliest opportunity with the next amendment of the MATS part 2, subject to CAA acceptance.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-037

The Civil Aviation Authority should amend MATS Part 1 so that controllers are prohibited from issuing instructions that would require an aircraft established on final approach to carry out a non-standard manoeuvre.

Response

The CAA accepts this Recommendation and will amend Manual of Air Traffic Services (MATS) Part 1 to provide suitable instructions to controllers on this issue.

CAA Action

The following amendment was incorporated into the MATS Part 1 on 22 November 2007:

"The final approach represents an increased period of flight deck workload. Unusual situations and emergencies during this period can be particularly demanding for the pilot. Therefore, with the exception of instructions to go-around, instructions shall not be issued to aircraft in the final stages of approaching to land that would require it to deviate from its expected flight path unless exceptional and overriding safety considerations apply."

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-050

The Civil Aviation Authority should instigate the use of a suitable prefix, for use in civil radiotelephony, to signify a student pilot, flying solo.

Response

The CAA accepts this Recommendation and will consider the introduction of suitable phraseology to enable a pilot to indicate his or her student status.

CAA Action

The CAA promulgated the introduction of the prefix "Student" to enable a pilot to indicate novice status or limited ability via Air Traffic Services Information Notice (ATSIN) 112 and Aeronautical Information Circular (AIC) 83/2007 (Pink 123) on 13 September 2007. The MATS Part 1 was subsequently amended on 22 November 2007 when ATSIN 112 was withdrawn.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-051

The Civil Aviation Authority should amend the Manual of Air Traffic Services Part 1 and the Radio Telephony Manual (CAP 413) to emphasise to controllers that pilots identifying themselves as students have limited ability, which must be taken into consideration when issuing instructions.

Response

The CAA accepts this Recommendation. The CAA will develop and incorporate suitable amendments to the MATS Part 1 to make it clear that pilots identifying themselves as students may have limited ability which should be taken into account by controllers when issuing instructions. CAP 413 will be amended to inform pilots that by use of the prefix identifying a solo student pilot, controllers will be aware of the pilot's status and will take account of the student's limited ability when issuing instructions.

CAA Action

The CAA promulgated ATSIN 112 and AIC 83/2007 (Pink 123) on 13 September 2007 to make it clear to controllers that pilots who do not yet hold a licence and are flying solo as part of their training or are of limited ability (eg undergoing renewal training) may notify their status through the use of the prefix "Student" and that controllers should make due allowance for the pilot's limited ability when issuing instructions. The MATS Part 1 was subsequently amended on 22 November 2007 when ATSIN 112 was withdrawn. A suitable amendment for CAP 413 has been included in Edition 17 which is scheduled to be distributed during May 2008. AIC 83/2007 (Pink 123) will then be withdrawn.

Status - Accepted - closed

Yak-52	Bournemouth Airport, Dorset	22 July 2006	Accident

AAIB Bulletin: 8/2007
FACTOR: F31/2007

Synopsis

Following a pleasure flight in the local area, the aircraft made an approach and a high-speed low-level pass adjacent to the runway threshold, in front of a group of onlookers. Witnesses saw the aircraft pitch up to an attitude of 30° to 40° and climb to a height of around 200 ft, before starting a climbing roll to the right. The roll continued, the aircraft became inverted and entered a near-vertical rolling dive from which it did not recover. It impacted the ground and caught fire. The impact was not survivable and both the pilot and his passenger received fatal injuries.

Examination of the wreckage failed to reveal any malfunction of the aircraft. It was, however, established that the passenger, occupying the rear seat, only used the lap strap elements of his seven point harness. The reason for the pilot losing control of the aircraft could not be positively established. It was possible however, for the rear seat crotch strap buckle to have become trapped in the flight controls in such a manner as to prevent the pilot from applying corrective left roll control inputs.

SAFETY RECOMMENDATION - 2007-053

It is recommended that the Civil Aviation Authority review their response to AAIB Safety Recommendation 2003-71 with the intention of minimising the possibility of loose articles becoming jammed in any of the flight controls of Yak 52 aircraft on the UK register.

Response

The CAA accepts this Recommendation and will review its response to AAIB Recommendation 2003-71 with the intention of minimising the possibility of loose articles becoming jammed in any of the flight controls of Yak 52 aircraft on the UK register. The CAA intends to make an assessment of the installation of the flight controls in the fuselage of the Yak 52 aircraft type with the objective of determining whether any modifications to the aircraft would be appropriate to assist in minimising the possibility of loose articles becoming jammed in the flight controls. In addition, the CAA will consider other means of answering this Recommendation such as giving further publicity to the dangers of loose articles in aircraft including, specifically, unused components of the installed safety harness.

The CAA will complete its consideration by end February 2008.

CAA Action

The assessment of the installation of the flight controls is ongoing and a proposed course of action will be determined by 31 July 2008.

Status - Accepted - closed

Piper PA-28-161	Woodvale Airfield, Lancashire	17 August 2006	Incident

AAIB Bulletin: 8/2007
FACTOR: F29/2007

Synopsis

The engine stopped during the landing roll following an uneventful local flight. The pilot restarted the engine and taxied the aircraft to the hangar and, on closing the throttle, the engine stopped again. He tried to restart the engine but with no success. The pilot's attention was caught by a passer-by and on opening the cockpit door was informed that there were flames around the nose landing gear leg. The pilot and his passenger evacuated the aircraft rapidly and the fire was quickly extinguished. Examination revealed that one of the two hollow arms of the horseshoe-shaped float in the carburettor contained a substantial amount of fuel which prevented the needle valve from fully closing. This allowed excess fuel to flow through the carburettor's jets giving a rich mixture and, at low power, caused the engine to suffer a rich fuel mixture cut and fuel to pour out of the carburettor into the air box.

SAFETY RECOMMENDATION - 2007-040

It is recommended that the Federal Aviation Administration (FAA) review the continued airworthiness of the Precision Airmotive float, part number 30-804, fitted to Marvel-Schebler/Precision Airmotive carburettors.

Status - Response Awaited - open

Bolkow 208C Junior	Tatenhill Airfield, Staffordshire	23 September 2006	Accident

AAIB Bulletin: 8/2007
FACTOR: F32/2007

Synopsis

After conducting a short local flight the pilot flew the aircraft back to the departure airfield to carry out some 'touch-and-go' landings. During the climb out from the second takeoff, following a normal touchdown and landing roll, the nose landing gear fell away from the aircraft. A metallurgical examination revealed fatigue crack growth in the nose landing gear outer tube. It was not possible to establish the length of time that the fatigue cracking had been present prior to the final failure. The nose landing gear had been fitted to the aircraft as a replacement item some 51 airframe hours prior to this accident.

SAFETY RECOMMENDATION - 2007-038

It is recommended that the European Aviation Safety Agency (EASA) review the inspection requirements of Airworthiness Directive No 72-92 to ensure the continued airworthiness of Bolkow BO 208 nose landing gears.

Response

The EASA has reviewed the inspection requirements of Airworthiness Directive 72-92 and believes that there is no reason to alter the content of scheduled or regular inspections.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-039

It is recommended that the Civil Aviation Authority review the airworthiness category under which UK-registered Bolkow BO 208 aircraft are operated.

Response

The CAA accepts this Recommendation and has reviewed the airworthiness category under which UK registered Bolkow BO208 aircraft are operated. Although a few aircraft are operated historically under a UK Permit to Fly, the majority, and any new BO208 aircraft to the UK, are operated on an European Aviation Safety Agency Certificate of Airworthiness. The Certificate of Airworthiness and Permit systems have different airworthiness criteria relating to the different operating regimes (Permits may have a number of additional operational restrictions by comparison to Certificates of Airworthiness.) There is, however, still an obligation on the owner to carry out maintenance in accordance with any published manufacturer's instructions. It is also incumbent on the owner to use approved components on the aircraft or seek formal approval of alternatives. So, whilst the Permit system may carry with it procedural differences in airworthiness control (the lack of a requirement for a Form 1 being an example) the review concluded that the operational restrictions offset this sufficiently for the Permit system, when taken as a whole, to still provide an acceptable level of airworthiness for such aircraft.

Status - Accepted - closed

Reims Cessna F172N	**900 ft above Snetterton, Norfolk**	**28 Oct 2006**	**Accident**

AAIB Bulletin: 7/2007
FACTOR: F26/2007

Synopsis

An electrical system failure which occurred in-flight, but close to an airfield, resulted in flames and smoke emanating from behind the left instrument panel, after the pilot attempted to re-set the alternator circuit breaker. During short final approach to the airfield for a precautionary landing, the engine stopped and the aircraft landed in a field close to the runway.

A combination of a defective battery and a failure of the voltage regulator was identified as the main causal factor of this event. Two Safety Recommendations are made.

SAFETY RECOMMENDATION - 2007-048

It is recommended that the European Aviation Safety Agency, in conjunction with the Civil Aviation Authority, publish specific information aimed at discouraging the re-setting of high power circuit breakers on light aircraft, such as those that control alternators, whilst in flight unless considered essential for the safe continuation of the flight.

Response

The CAA accepts this Recommendation. The CAA will publish, at the next issue of the General Aviation Safety Information Leaflet (GASIL) in September 2007, an article highlighting the potential problems in resetting high power circuit breakers on light aircraft, using this occurrence as an example of the dangers of this practice. The CAA will also provide a copy of this GASIL article to the European Aviation Safety Agency.

CAA Action

An article on the subject was published in GASIL 3/2007 in September 2007.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-049

It is recommended that the European Aviation Safety Agency, in conjunction with Civil Aviation Authority, promulgate the information contained in FAA Special Airworthiness Information Bulletin CE-04-72, so that European operators of single engine Cessna aircraft, together with their maintenance organisations, can ensure that the aircraft electrical systems have the required level of over-voltage protection.

Response

The CAA accepts this Recommendation. The CAA will publish a Letter to Operators (LTO) highlighting the existence of Federal Aviation Administration Special Airworthiness Information Bulletin CE-04-72 and the related Cessna Service Bulletin SEB03-3 that recommends the installation of Cessna Service Kit SK210-170 which replaces the problematic voltage regulator and re-installs the over voltage sensor in accordance with the original manufacturer's configuration. The LTO was published in June 2008.

Status - Response Awaited - open

Slingsby T67M260	**Near Cambridge Airport, Bedfordshire**	**23 November 2006**	**Incident**

AAIB Bulletin: 11/2007
FACTOR: N/A

Synopsis

Whilst attempting to recover from a spin during an aerobatic training flight, the instructor was initially unable to move the rudder pedals from their fully pro-spin position. He managed to free the pedals by applying a high pedal force and was then able to recover from the spin. The restriction delayed recovery by an estimated two and a half turns. The restriction had probably been caused when one of the pedals contacted a fixed bracket, probably due to a relatively small lateral displacement of the rudder pedal mechanism, deformation of a bracket supporting the mechanism and/or displacement of the bracket because of cracking of the floor structure to which it was mounted.

Adequate checks aimed at ensuring sufficient clearance had not been specified, but detailed repetitive inspections mandated following the incident may be effective in detecting progressive deterioration of the mechanism. The inspection programme would not preclude the possibility of damage to the support bracket or its mountings, potentially allowing interference to free movement of the pedals, from remaining undetected until the subsequent inspection. Two Safety Recommendations have been made.

SAFETY RECOMMENDATION - 2007-077

The European Aviation Safety Authority should review the rudder pedal system of the Slingsby T67 aircraft. Consideration should be given to improving both the lateral stiffness and strength of the rudder bar support brackets and the integrity of the attachments for the brackets, in order to prevent possible interference with the free movement of the rudder pedals. Consideration should also be given to requiring means to limit the loads applied to the rudder system during towing.

Response

Review of the circumstances surrounding the incident to G-EFSM has led to a clearer understanding of the mechanism that has led Slingsby Advanced Composites Limited (SACL) to re-issue Service Bulletins 187 and 188.

The T67 aircraft was originally designed for ground movement by hand and vehicular tow bars - the latter drawing having been first issued in 1984. The design of the vehicular tow bar was originally designed to be 'weak' to the extent that it will break at a load below that which would damage the rudder system through back loading.

There is no evidence to suggest that a SACL tow bar has ever damaged a rudder system but it is accepted that the use of unapproved 'stiffer' tow bars has the potential to damage the rudder system if the towing angle is exceeded. SACL has amended and raised Service Bulletins 187 and 188 to issue 3 to clarify that ground handling of the T67 aircraft should only be accepted and appropriate equipment and have specified the part numbers of the approved equipment. SACL consider the issue of Service Bulletins 187 and 188 at issue 3, along with the MM AIL 01/2007, to be adequate in preventing further damage to the rudder system during vehicular towing of the aircraft.

SACL have been looking at the feasibility of re-designing the rudder system, or nosewheel steering system, in order to prevent overloading of the rudder system during vehicular towing of the aircraft whilst using any tow bar but have not agreed to implement such a modification.

The EASA has reviewed the SACL's actions which are found to be satisfactory.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-078

The European Aviation Safety Authority should require changes to the engine control cable bracket on relevant Slingsby T67 aircraft to increase its clearance from the No 3 rudder pedal, in order to prevent possible interference with the free movement of the rudder pedals.

Status - Response Awaited - open

Piper PA-38-112	Durham Tees Valley Airport	9 December 2006	Accident

AAIB Bulletin: 10/2007
FACTOR: F35/2007

Synopsis

Whilst taxiing following a firm landing, the left main landing gear detached from the aircraft. Examination showed that one of the three landing gear attachment bolts had unscrewed and fallen out and the remaining two bolts had pulled out as the gear detached from the aircraft.

SAFETY RECOMMENDATION - 2007-087

It is recommended that the Civil Aviation Authority reconcile the anomaly of the aircraft manufacturer's requirement to check the torque of the main landing gear attachment bolts on Piper PA-38 aircraft every 100 hours against the LAMS requirement to check the security of landing gear attachment bolts every 150 hours.

Response

The CAA does not accept this Recommendation.

The CAA has previously addressed this issue in that the approved maintenance schedule in place for this aircraft - CAA/LAMS/A/1999/A Section 3 Para 8 - requires owners/ operators to review and embody where appropriate, continued airworthiness recommendations made by the type design organisations.

Note: The CAA is replacing Light Aircraft Maintenance Schedule (LAMS) by LAMP (Light Aircraft Maintenance Programme) in the 4th quarter of 2007, which is applicable to all European Aviation Safety Agency (EASA) aircraft below 2730 kg. This further underlines the owner/operator responsibilities in the area of compliance with the type design organisation's continued airworthiness requirements by linking it to the part M.A.302 requirements for maintenance programmes.

CAA Action

No further action required. The LAMS amendments made in April 2005 already addressed the issue of taking manufacturer's or other continuing airworthiness recommendations into account when customising the LAMS Schedule to reflect the configuration, status and operation of a particular aircraft. The CAA has since issued the LAMP, CAP 766 – Light Aircraft Maintenance Programme - Aeroplanes and CAP 767 – Light Aircraft Maintenance Programme - Helicopters, which continues the concept of a generic schedule that is customised for the specific aircraft configuration but which directly references and reflects the relevant EASA requirements in Part M, M.A.302 (issued under Annex I to Regulation (EC) 2042/2003). The LAMP publications were first issued in October 2007 and Section 2 Paragraph 1, which is the owner/operator certification statement for the programme, was amended in January 2008 to emphasise that continuing airworthiness information issued by the airframe, engine and equipment type certificate holders or any relevant supplemental type certificate holder takes precedence over the generic requirements. The amendment also clearly emphasises that the programme is not complete until the customisation has been completed.

Status - Rejected

SAFETY RECOMMENDATION - 2007-088

It is recommended that the Federal Aviation Administration require that Piper Aircraft introduce a form of locking on the main landing gear attachment bolt, part number 401 511, fitted to PA-38 series aircraft.

Status - Response Awaited - open

Pitts S-2A	Leicester Airport	14 May 2007	Accident

AAIB Bulletin: 9/2007
FACTOR: F34/2007

Synopsis

Shortly after taking off from Leicester Airport, all thrust was lost from the propeller. A forced landing was made on to the disused section of the runway, where the aircraft sustained some damage. After coming to a halt the engine continued to run, but at idle speed. It was established that a failure had occurred in the propeller control unit, leading to a loss of controlling oil pressure to the propeller hub. This resulted in the propeller blades moving to the coarse pitch angle stops. The pilot was unaware of this characteristic of the propeller, as this had not been covered in his training. Also, no reference to this was in the aircraft's Flight Manual. One Safety Recommendation is made.

SAFETY RECOMMENDATION - 2007-054

It is recommended that the Civil Aviation Authority consider that information on the specific propeller behaviour following a propeller control unit failure, or other malfunctions, which result in a loss of control of the propeller blade angle on piston engine aerobatic aircraft, should be made readily available to all pilots of such aircraft on the UK register.

Response

The CAA accepts this Recommendation and has considered if the information on the specific propeller behaviour following a propeller control unit failure, or other malfunctions, which result in a loss of control of the propeller blade angle on piston engine aerobatic aircraft, should be made readily available to all pilots of such aircraft on the UK register.

It is common practice in aerobatic aircraft for the constant speed unit to default to high pitch in the event of a loss of oil pressure to reduce rpm and prevent engine overspeed. This is the opposite effect of a failure in the oil supply on most single piston engine aircraft with constant speed propellers where the constant speed unit defaults to the low pitch position.

The CAA intends to highlight the different default modes of constant speed propellers to the General Aviation community by an article in General Aviation Safety Information Leaflet (GASIL); this information will be included in the first GASIL in 2008.

CAA Action

An article entitled “Constant Speed Propellers” was published in GASIL 1/2008 on 7 April 2008. This article highlighted the behaviour of constant speed propellers of aerobatic and non-aerobatic in the event of a loss of the oil pressure used to control the propeller blade angle, and emphasised that pilots should ensure that they understand the propeller response in the event of controlling oil pressure loss, particularly when converting between aerobatic and non-aerobatic aircraft types.

Status - Accepted - closed

Pioneer 300	Oban Airport	9 June 2007	Accident

AAIB Bulletin: 2/2008
FACTOR: N/A

Synopsis

The landing gear seized in the partially extended position and during the subsequent landing, the nose gear collapsed allowing the propeller to make contact with the runway.

SAFETY RECOMMENDATION - 2007-113

It is recommended that the Civil Aviation Authority take appropriate action to increase awareness, in the various General Aviation communities, of the risks involved in resetting circuit breakers in flight.

Response

The CAA accepts this Recommendation. Following a previous AAIB recommendation for a similar circuit breaker related incident, the CAA published an article in the 2007-03 GASIL magazine to raise the GA community's awareness of the risks involved in resetting circuit breakers in flight. The CAA will publish revised guidance in GASIL concerning the resetting of circuit breakers in flight and also of the inadvisability of attempting multiple resets. This guidance will be published by June 2008. In addition, this incident and the earlier incident (AAIB Bulletin 7 of 2007) will be discussed during Safety Evenings in 2008 and the advice concerning the resetting of circuit breakers re-iterated.

Following a previous AAIB Recommendation for a similar circuit breaker related incident, the CAA published an article in the 2007-03 GASIL magazine to raise the GA community's awareness of the risks involved in resettling circuit breakers in flight. The CAA published revised guidance in GASIL (June 2008 edition) concerning the setting of circuit breakers in flight and also of the inadvisability of attempting multiple resets. In addition, this incident and the earlier incident (see Recommendation 2007-048 AAIB Bulletin 7 of 2007) are being dicussed during Safety Evenings in 2008 and the advice concerning the resetting of circuit breakers is being re-iterated.

Status - Accepted - closed

Tipsy Nipper T.66 Series 3	Between West Mersea and Tollesbury, Essex	13 August 2007	Accident

AAIB Bulletin: 3/2008
FACTOR: F7/2008

Synopsis

After intentionally entering a spin, the aircraft adopted a flat attitude, from which the pilot found it difficult to recover. After some 26 turns, he effected a recovery and made an emergency landing on to marshy ground; the aircraft came to rest inverted. Data gathered by a webcam and a laptop computer, fitted to the aircraft by the pilot in order to 'self critique' his aerobatic routines, allowed an analysis of the spin to be made.

SAFETY RECOMMENDATION - 2007-115

It is recommended that the Civil Aviation Authority, in conjunction with the Light Aircraft Association, should publish information relating to UK registered aircraft approved for spinning, with a view to ensuring that guidance is given on how a spin should be entered, so as to maximise the probability of the aircraft spinning in a predictable manner, one that is amenable to recovery using standard actions.

Response

The CAA accepts this Recommendation and will, in conjunction with the Light Aircraft Association, publish information relating to those UK registered aircraft approved for spinning, with a view to ensuring that guidance is given on using the correct spin entry and recovery techniques as published in the aircraft's flight manual, so as to maximise the probability of the aircraft spinning and recovering in a predictable manner. This information will be published in the General Aviation Safety Information Leaflet by September 2008.

Status - Accepted - closed

Microlights

Pegasus Quik	Eastchurch, Isle of Sheppey, Kent	21 August 2004	Accident

AAIB Bulletin: AAR 2/2005
FACTOR: F39/2005

Synopsis

The Pegasus Quik microlight, with an instructor and passenger on board, departed Rochester Airfield for a trial lesson. Thirty five minutes into the flight, as it was flying at 500 ft along the north coast of the Isle of Sheppey, it pitched up steeply to the near vertical and entered a series of tumbling manoeuvres. As the microlight tumbled the trike unit, containing the two occupants, separated from the wing and descended vertically to the ground. Neither the pilot nor his passenger survived the impact. The initiation of the pitching moment and subsequent entry into the tumbling sequence was brought about by the failure of the right upright upper fitting, which caused full nose-up trim to be suddenly applied.

Some time previously the microlight's uprights upper fittings had been modified to comply with Service Bulletin 116 requiring the fitting of additional rivets. The additional rivets were not only fitted incorrectly, and without reference to the Service Bulletin, but two of them did not match the specification of those rivets supplied by the manufacturer in the modification kit. Additionally, no duplicate independent inspection was carried out on the correct embodiment of the modification.

SAFETY RECOMMENDATION - 2005-090

It is recommended that Mainair Sports Ltd takes action to ensure that the limitation placard on the Pegasus Quik is protected, or relocated, so that the data remains clearly visible to the pilot.

Response

Manair Sports accepts the recommendation and have now protected the data plate on Pegasus Quick aircraft with scuff-resistant polyurethane tape.

Status - Accepted - closed

Pegasus Quantum 15-912	Clench Common Airfield, near Marlborough, Wiltshire	5 April 2006	Accident

AAIB Bulletin: 2/2007
FACTOR: F4/2007

Synopsis

After an uneventful flight and while on the approach to land, the wing pitched up and the aircraft turned to the right. It subsequently crashed into the roof of a barn close to the landing threshold of the airstrip. Ferrules had failed in four rigging cable assemblies causing structural failure of the aircraft. These four cable assemblies had been recently fitted. The cable assemblies were made locally; they were not approved by the manufacturer, nor were they approved by the BMAA.

SAFETY RECOMMENDATION - 2007-007

It is recommended that the BMAA update their Guide to Airworthiness to state clearly that only parts approved either by the manufacturer or in a BMAA approved modification, should be used for the replacement of all safety critical items.

Status - Response Awaited - open

Easy Raider	**Near Andreas Airfield, Isle of Man**	**27 April 2007**	**Accident**

AAIB Bulletin: 1/2008
FACTOR: N/A

Synopsis

The newly constructed aircraft was undertaking the second in a series of test flights for the issue of a Permit to Fly. After takeoff the aircraft's climb performance was inadequate to maintain sufficient terrain clearance with rising ground ahead and the pilot attempted to return to the airfield. During this manoeuvre the aircraft stalled at low level, impacting the ground seriously injuring the two occupants.

SAFETY RECOMMENDATION - 2007-125

It is recommended that the British Microlight Aircraft Association provide written advice on appropriate planning, risk assessment and conduct of test flights that specifically includes use of ballast during such flights.

Status - Response Awaited - open

Rotorcraft <> 2,250kg and 5,700kg MTWA

MD 900	**Walworth Road, London Borough of Southwark**	**4 June 2006**	**Accident**

AAIB Bulletin: 9/2007
FACTOR: F28/2007

Synopsis

The helicopter was attending a road traffic accident (RTA) in which a pedestrian had suffered potentially life-threatening injuries. While landing on a garage forecourt, close to the RTA, a metal sign became detached from the wall of the garage and was blown into the main rotor disc. The commander was able to make a controlled landing on the forecourt and no-one within or outside the helicopter was injured by the flying metal debris from the sign.

SAFETY RECOMMENDATION - 2007-057

It is recommended that the European Aviation Safety Agency perform a risk assessment of the policies and procedures in JAR-OPS 3 associated with Helicopter Emergency Medical Services (HEMS) operating into improvised confined areas.

Response

The philosophy of HEMS operations in JAR-OPS 3 aims at letting the operators performing a case-by-case risk assessment as it is almost impossible to envisage all possible cases, given this specific type of operations.

A risk assessment on those operations has been performed previously and led to guidance on criteria for unsurveyed sites.

Status - Rejected

SAFETY RECOMMENDATION - 2007-058

It is recommended that the Civil Aviation Authority ensure that a risk assessment is performed of the current agreed operating standards associated with Helicopter Emergency Medical Services (HEMS) operating into improvised confined areas.

Response

The CAA accepts this Recommendation and will ensure that all HEMS operators carry out new risk assessments to confirm that current policies and procedures address the potential risk to HEMS operations into improvised confined areas. These risk assessments will be audited by the CAA and the audits will be planned to be completed by 31 December 2007.

CAA Action

The CAA has ensured that all HEMS operators carried out new risk assessments to confirm that current policies and procedures addressed the potential risk to HEMS operations into improvised confined areas. These risk assessments were audited by the CAA and with the exception of one slightly more difficult assessment the audits were completed by 31 December 2007. The remaining assessment and audit was completed and signed off on 26 February 2008.

Status - Accepted - closed

Agusta A109A	2 nm west of Biggin Hill Airport, Kent	9 October 2006	Accident

AAIB Bulletin: 12/2007
FACTOR: N/A

Synopsis

During cruise flight, an engine exhaust duct separated from the helicopter and struck the tail rotor assembly, which also subsequently separated. After an initial yaw to the right, the pilot regained limited control. However, a further sudden yaw, probably associated with a structural failure of the upper vertical stabiliser, prompted an immediate autorotative descent, which culminated in a successful forced landing. The investigation established that a clamp attaching the exhaust duct to the engine had failed due to stress corrosion cracking, allowing the duct to subsequently become disconnected from the engine. Three Safety Recommendations are made.

SAFETY RECOMMENDATION - 2007-085

It is recommended that the European Aviation Safety Agency require all helicopter manufacturers for whom they have airworthiness responsibility, to review the design of engine exhaust duct attachment and retention systems, to ensure that no part of the ducting will be released from the helicopter in the event of a failure of the attachment.

Response

The EASA does not accept this Safety Recommendation. As far as Agusta A109 is concerned, Agusta have already issued SB 109-123, which was mandated through EASA AD 2007-0041; these introduce more stringent inspection requirements which aim at reducing the probability of clamp (and consequently duct) failure. As far as the Agusta AB206A and AB206B series are concerned, the Agusta issued SB 206-242, which was mandated by the EASA with AD 2007-0043.

In addition, as far as the BO105, periodic inspections (as established in ASB-BO105-60-107, 2000-11-23) requiring dye-penetrant testing of the removed clamp, have proven to be effective to address stress corrosion cracking failures, as none has been reported since the referred SB was issued.

The EASA believe that it is possible to detect cracks by non-destructive testing, if the clamp is removed. The (stress corrosion) cracking failures are addressed by those tests. Service experience (on the BO105) has supported this EASA opinion.

Status - Rejected

SAFETY RECOMMENDATION - 2007-114

It is recommended that the European Aviation Safety Agency require all helicopter manufacturers for whom they have airworthiness responsibility to institute similar Mormon clamp inspection regimes to those detailed in Agusta Service Bulletin Nos. 109-123 and 206-242, where they are used to secure exhaust duct components to the turbine engines of helicopters.

Response

The EASA does not accept this Safety Recommendation. As far as Agusta A109 is concerned, Agusta have already issued SB 109-123, which was mandated through EASA AD 2007-0041; these introduce more stringent inspection requirements which aim at reducing the probability of clamp (and consequently duct) failure. As far as the Agusta AB206A and AB206B series are concerned, the Agusta issued SB 206-242, which was mandated by the EASA with AD 2007-0043.

In addition, as far as the BO105, periodic inspections (as established in ASB-BO105-60-107, 2000-11-23) requiring dye-penetrant testing of the removed clamp, have proven to be effective to address stress corrosion cracking failures, as none has been reported since the referred SB was issued.

The EASA believe that it is possible to detect cracks by non-destructive testing, if the clamp is removed. The (stress corrosion) cracking failures are addressed by those tests. Service experience (on the BO105) has supported this EASA opinion.

Status - Accepted - closed

Rotorcraft = or < 2,250 MTWA

EC155 B1	**Norwich Airport, Norfolk**	**10 March 2007**	**Incident**

AAIB Bulletin: 11/2007
FACTOR: N/A

Synopsis

The aircraft was being refuelled on the ramp with the rotors running when a localised fire broke out in the area of the external connector for the electric hoist, on the upper right side of the fuselage. The fire went out as soon as electrical power was removed on shutting down the engines.

The investigation established that the fire was caused by the 28 volt DC electric hoist power supply shorting to the body of the hoist's fixed electrical connector and earthing through the carbon fibre composite fairing on which the connector is mounted. The short was probably caused by moisture ingress into the connector due to a damaged seal. A contributory factor was that the connector is always live whenever the electrical system is powered.

SAFETY RECOMMENDATION - 2007-072

It is recommended that Eurocopter modify the method of sealing the hoist connector '24 DELTA' on EC155 aircraft, to ensure that it is effective in preventing moisture ingress into the connector.

Response

On 01 June 2007, Eurocopter issued Emergency Alert Service Bulletin (ASB) 25A085, applicable to EC155B and B1 versions with serial number below 6763. This was made mandatory by EASA Emergency Airworthiness Directive (AD) n 2007-0159-E, which became effective on 06 June 2007.

This ASB requires that operators inspect the hoist fixed connector "24 DELTA" within seven days of receipt of the ASB and, if required, reposition the connector so that the power and ground contacts "W" and "X" are facing aft.

It also requires, if the hoist is not installed, that the power supply cable to the hoist fixed connector be disconnected at the electrical master box "2 ALPHA", until such time as a grounding strap has been installed to the body of the connector, in accordance with the instructions provided in the ASB. This is to provide a low resistance path to ground to ensure that the fuse will blow in the event of the power pin shorting to the connector body.

The grounding strap installation corresponds to serial modification MOD 0745C82.

Eurocopter has launched a modification project in order:

•To give up the current connector used on EC155

•To embody the well proven screwed connector used on Dauphin for many years with no known similar incident

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-073

It is recommended that Eurocopter determine the most appropriate orientation for mounting the EC155 hoist fixed connector to minimise its susceptibility to shorting from moisture ingress.

Response

On 01 June 2007, Eurocopter issued Emergency Alert Service Bulletin (ASB) 25A085, applicable to EC155B and B1 versions with serial number below 6763. This was made mandatory by EASA Emergency Airworthiness Directive (AD) n 2007-0159-E, which became effective on 06 June 2007.

This ASB requires that operators inspect the hoist fixed connector "24 DELTA" within seven days of receipt of the ASB and, if required, reposition the connector so that the power and ground contacts "W" and "X" are facing aft.

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Eurocopter has launched a modification project in order:

•To give up the current connector used on EC155

•To embody the well proven screwed connector used on Dauphin for many years with no known similar incident

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-074

It is recommended that Eurocopter provide a suitable means to flight crew to allow them to switch off the 28 volt DC power supply to the hoist connector '24 DELTA' on EC155 helicopters.

Response

Eurocopter agrees the principle of the Safety Recommendation 2007-074 (a suitable means allowing to switch off the 28 volt DC power supply to the hoist connector).

This recommendation has also been written in the internal TSR document (Technical Safety Report).

Status - Accepted - closed

AS355F1	**Near Lasham Airfield, Hampshire**	**19 July 2004**	**Incident**

AAIB Bulletin: 10/2005
FACTOR: F36/2005

Synopsis

The pilot had flown passengers from Lasham to the Farnborough Airshow and was returning to Lasham empty. Whilst approaching Lasham in the cruise at 1,500 ft amsl and 120 kt IAS, a thump was heard from an indeterminate source. On checking the engine instruments, the pilot noticed that the No 2 engine was indicating ground idle rpm. He shut down the engine and performed an uneventful single engine landing at Lasham. The pilot recalled that whilst on the ground at Farnborough he had felt an unusual high frequency vibration that he could not trace.

SAFETY RECOMMENDATION - 2005-081

It is recommended that Eurocopter review the design, or maintenance procedures adopted for the installation, of 'flector' couplings to ensure that the potential for fretting of the split-pin/nut/bolt assembly is eliminated.

Response

Service Letter 1816-63-06 dated 10th January 2007attached concerns a reminder to operators regarding the suspension pads to be inspected. A loss of stiffness of the pads can induce, at iso torque, an increase of MGB misalignment which induces higher stress in the coupling.

Status - Accepted - closed

Bell 206B Jetranger III	**Priors Park Wood, 5nm south of Taunton, Somerset**	**22 January 2005**	**Accident**

AAIB Bulletin: 1/2006
FACTOR: F8/2006

Synopsis

The pilot had planned to fly with some friends from Staverton Airport, near Gloucester, to a private landing site in the Torbay area but, due to deteriorating weather, landed at Topsham to the south of Exeter Airport. After a period of several hours, the weather had not improved so the pilot decided to return to Staverton. Although on the outbound trip he had routed south via the Bristol Channel and the M5 corridor, an area of low lying terrain, he elected to return to Staverton via Sidmouth, and communicated this to Exeter ATC, advising them that he would be flying at an altitude of 900 ft. As he approached Sidmouth, he then informed Exeter that he was going to go north towards Wellington and Taunton. This route would take the helicopter over the Blackdown Hills, which rise to a height of some 1,000 ft amsl. Witnesses in an area approximately 5 nm south of Taunton generally heard, but did not clearly see, a low flying helicopter and one heard a ‘bang’. A subsequent search and rescue effort failed to locate the helicopter, due to very poor weather conditions, and it was found by a dog walker the following morning. All four occupants had received fatal injuries in the accident. No pre-accident defects were found during the wreckage examination.

SAFETY RECOMMENDATION - 2005-101

The European Aviation Safety Agency should promote the safety benefits of fitting, as a minimum, cockpit voice recording equipment to all aircraft operated for the purpose of commercial air transport, regardless of weight or age.

Response

Today no suitable standard (TSO - Technical Standard Order or MOPS - Minimal Operational Performance Standards) exists for use in all helicopters therefore EASA will ask EUROCAE to take this task into account in developing such devices.

Status - Accepted - closed

RAF 2000 GTX-SE	**West of Simon's Stone, Colliford Lake, Bodmin Moor**	**1 June 2006**	**Accident**

AAIB Bulletin: 9/2007
FACTOR: F33/2007

Synopsis

The gyroplane was being flown from Watchford Farm in Devon to Bodmin Airfield in Cornwall by the pilot who was also the owner and builder. Approximately 2.8 nm north-east of Bodmin Airfield at a height of about 450 ft agl, a witness saw the main rotor blades stop. The gyroplane fell to the ground fatally injuring the pilot. The main rotor blades had contacted the vertical stabiliser, propeller and rudder.

During the course of this investigation a programme of test flying was conducted by the UK CAA, primarily as a result of an earlier accident. Undesirable handling characteristics of the RAF 2000 were identified. As a result the CAA has published Mandatory Permit Directive MPD 2006-013, restricting operation of the type.

The investigation has identified an undiagnosed medical problem, pre-impact mechanical interference of the control runs and undesirable handling characteristics of the gyroplane, but has not identified the precise cause of the accident. However, any combination of these factors could have caused the accident.

SAFETY RECOMMENDATION - 2007-052

It is recommended that the Civil Aviation Authority includes a statement in all Mandatory Permit Directives affecting aircraft operating under Permits-to-Fly to clearly advise owners if the work content requires a duplicate or independent inspection.

Response

As with Safety Recommendation 2005-085, the CAA partially accepts this Recommendation insofar as it relates to the need for a duplicate inspection. The PFA procedures include defined processes that include the need to carry out duplicate or independent inspections whenever the work involves primary structure or control systems.

In this case, the owner performed the modification actions apparently without reference to a PFA inspector or recording it in the aircraft's log book. This is notable, despite MPD 2006-03 stating:- “During embodiment of the modification and after completion, the work must be inspected at appropriate stages by a person approved either by the CAA or the PFA. Compliance with this MPD and appropriate inspections should be in accordance with normal PFA procedures and recorded in the aircraft log book.”

The CAA does not consider it appropriate to amend MPDs to simply identify duplicate/independent inspections.

Status - Partially Accepted - open

Others

Glider-K13	Booker, Wycombe Air Park	6 August 2004	Accident

AAIB Bulletin: 8/2005
FACTOR: F31/2005

Synopsis

The accident occurred during a 'trial lesson'. The glider was a tandem seat aircraft and the instructor gave a standard brief to his passenger, which included procedures for handing over control and when the student would be invited to take over control. The importance of the student staying away from the controls at other times was emphasised. The student had a camera with him which he placed on the floor between his feet.

The launch was conducted using a tug aircraft and the takeoff proceeded normally. Soon after the glider became airborne the instructor noticed that he was unable to move the control column forward. The student confirmed that he was not touching the controls. The glider continued to climb at an increasingly steep angle. As the tug pilot noticed the increasing force on the tow he released the tow.

The glider was seen to rise steeply to about 100 feet and enter a descending turn to the left. The instructor managed to level the wings and as the glider pitched up again it struck the ground, bounced and became airborne and then finally struck the ground in an almost vertical attitude left wing first. Both occupants were seriously injured.

SAFETY RECOMMENDATION - 2005-077

It is recommended that the British Gliding Association reinforce the message that there must be no loose articles in aircraft when they are being flown.

Response

The recommendation has been accepted by the board and actioned during 2006. The hazards associated with and control of loose objects has been reinforced in three key areas; airworthiness management, pilot and instructor training and briefing of crew.

Status - Accepted - closed

Slingsby Glider - Dart 15	Sutton Bank, near Thirsk, Yorkshire	30 August 2006	Accident

AAIB Bulletin: 3/2007
FACTOR: F17/2007

Synopsis

During a local flight from a hill-top gliding site, the glider descended in weak ridge lift until it was too low to land safely back at the airfield. However, the pilot appears to have made an attempt to do so and, whilst turning at low height and low speed, lost control of the glider. It crashed on the steep slope just below the ridge line, and the pilot sustained injuries from which he later died.

SAFETY RECOMMENDATION - 2007-001

The British Gliding Association should review the guidance it gives to its associated gliding clubs in respect of the briefing requirements for visiting pilots, with a view to ensuring that such pilots are adequately briefed on all aspects of site operations.

Status - Response Awaited - open

Paraglider	**White Rocks, near Portrush, County Antrim**	**7 September 2006**	**Accident**

AAIB Bulletin: 11/2007
FACTOR: N/A

Synopsis

After takeoff from a cliff-top soaring site the pilot did not find adequate lift either to remain level or to climb. He turned towards a nearby beach to land however, due to his rate of descent, he was unable to reach the beach and landed in the sea. He appeared uninjured from the landing and, remaining in his harness, attempted to gather his canopy and climb onto submerged rocks. Owing to the high tide and strength of the swell his efforts to gather the canopy were unsuccessful and, despite attempts by others to rescue him, he drowned before being reached by the local inshore lifeboat. The pilot was not wearing a lifejacket.

The investigation found the pilot had been properly trained, including training in emergency water landing procedures. His equipment was fully serviceable. It is believed he was not able to soar due to his chosen flight path after takeoff, which took him too far from the edge of the cliff and its associated band of lift.

SAFETY RECOMMENDATION - 2007-075

It is recommended that the British Hang Gliding and Paragliding Association (BHPA) highlights this accident to its members and reinforces the importance of using the appropriate safety equipment.

Response

Safety Recommendation 2007-075 was for the BHPA to highlight the accident to its members and reinforce the importance of using appropriate safety equipment.

The BHPA is constantly reminding members of safety issues through its monthly publication "Skywings" and through the Instructor and Club Coach safety bulletins.

2007-075 is considered implemented.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-076

It is recommended that the Ulster Hang Gliding and Paragliding Club, in co-operation with the Police Service of Northern Ireland, reviews the suitability of White Rocks as a paragliding site and advises its members accordingly.

Response

Regarding Recommendation 2007-076 the UHPC fully intends to implement the Recommendation with a timetable.

Status - Accepted - closed

Cameron N-90	**Wood Dalling, Norfolk**	**8 September 2006**	**Accident**

AAIB Bulletin: 8/2007
FACTOR: F27/2007

Synopsis

While landing the balloon in a relatively strong wind, the pilot was thrown from the basket. His leg became entangled in the balloon parachute ripline and as the balloon became airborne again, he was carried into the air, hanging below the basket. At approximately 30 feet agl, the line unravelled itself and the pilot fell to the ground. The balloon descended with the two passengers on board pulling on the ripline, and landed without further incident. One Safety Recommendation has been made.

SAFETY RECOMMENDATION - 2007-047

It is recommended that the CAA, in conjunction with the BBAC, encourage pilots on all private balloon flights, to wear suitable harnesses with the means to fasten themselves securely into the basket when required.

Response

The CAA accepts this Recommendation and has requested the British Balloon and Airship Club to recommend strongly to all their balloon pilot members that a pilot restraint safety harness is carried in all balloons and should be worn for takeoff and landing.

Status - Accepted - closed

ASW-19 **Scheibe SF27**	**Near Sutton Bank Airfield, Yorkshire**	**2 October 2006**	**Accident**

AAIB Bulletin: 1/2008
FACTOR:

Synopsis

Two gliders, a Scheibe SF27 and a Schleicher ASW-19B, were flying close to Sutton Bank, North Yorkshire, when they were in collision close to a bank of cloud. Both gliders lost portions of wing in the impact and were rendered incapable of flight. The pilot of the SF27 was able to escape from his aircraft and parachute to the ground: the pilot of the ASW-19 was not able to release his cockpit canopy and was killed. The engineering investigation indicated that both aircraft were serviceable until the moment of collision.

SAFETY RECOMMENDATION - 2006-127

The British Gliding Association should advise glider pilots to incorporate into their pre-flight checks, a check to ensure that no modifications have been made which would prevent the canopy being jettisoned in emergency.

Response

The BGA has accepted these recommendations. In addition, on a number of occasions the BGA has reminded pilots of the need to ensure that nothing interferes with the correct operation of canopy jettison systems. This has included technical documentation and an article in the BGA 's own 'Sailplane and Gliding' magazine.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2006-128

The British Gliding Association should remind its inspectors of the provisions of BGA Glider Maintenance Schedule Task 8, specifically with regard to ensuring that any canopy may be fully jettisoned without restriction.

Response

The BGA has accepted these recommendations. In addition, on a number of occasions the BGA has reminded pilots of the need to ensure that nothing interferes with the correct operation of canopy jettison systems. This has included technical documentation and an article in the BGA 's own 'Sailplane and Gliding' magazine.

Status - Accepted - closed

SAFETY RECOMMENDATION - 2007-096

It is recommended that the British Gliding Association should remind glider pilots of its operational regulation 6.12 and provide reference material for its clubs, instructors, and pilots, that identifies the risks associated with flying gliders close to cloud or in marginal visual flying conditions.

Status - Response Awaited - open

SAFETY RECOMMENDATION - 2007-097

It is recommended that the British Gliding Association should provide its clubs, instructors, and pilots, with guidance to achieve the most effective use of the BGA cloud flying frequency for collision avoidance purposes. This guidance should take account of local requirements to monitor other frequencies.

Status - Response Awaited - open

DG505 Glider	**North Hill Airfield, Broadhembury, Honiton, Devon**	**22 April 2007**	**Accident**

AAIB Bulletin: 2/2008
FACTOR: N/A

Synopsis

The accident occurred during a solo flight, the purpose of which was to convert an experienced glider pilot on to type. On approach, the glider was seen to enter a steep dive and strike the ground, seriously injuring the pilot. The dive was caused by the failure of a piece of electric cable being used to restrain the hinged rear cockpit headrest. This allowed the headrest to fall forward, restricting the rearward travel of the rear cockpit control column resulting in a loss of control. The electrical cable had been fitted as a replacement for the original nylon cord, installed by the manufacturer, which had become damaged. Two Safety Recommendations have been made.

SAFETY RECOMMENDATION - 2007-127

It is recommended that the Luftfahrt-Bundesamt and the EASA require DG-Flugzeubau GmbH to review the design of the hinged headrest introduced to the DG500 series glider by Glaser Dirks Flugzeubau GmbH Technical Note 348/5 to remove any possibility of a control restriction in the event that the headrest becomes unrestrained.

Response

Since March 1995 an optional headrest for rear cockpit can be retrofitted on DG500. This was published with the Technical Note 348/5. In 2001 DG-Flugzeugbau GmbH published a TN 348/15 which describes that the headrest must be fixed by two independent ropes to give a double safety. This TN is mandated by LBA Airworthiness Directive 2001/079, which is applicable in EASA member states.

The implementation of this Airworthiness Directive would have prevented this problem.

Response Category and Stautus: Disagreement, closed

Status - Rejected

SAFETY RECOMMENDATION - 2007-128

It is recommended that DG-Flugzeubau GmbH review their document publication procedures to ensure that safety related information is published in an independent document.

Response

Concerning the Safety Recommendations 2000-127, -128 I have discussed with the LBA and we both have the same opinion.

We feel that no further actions from DG or LBA are necessary.

In the section "Manufacturers follow-up actions" of your report all our arguments are listed. We feel that they are sufficient.

Status - Rejected

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2005-051	Boeing 777-222 Airbus A340-313	Runway 27L Holding Area Heathrow	14 Jul 2004	11
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GLOSSARY OF ABBREVIATIONS

aal	above airfield level
ACAS	Airborne Collision Avoidance System
ACARS	Automatic Communications And Reporting System
ADF	automatic direction finding equipment
AFIS(O)	Aerodrome Flight Information Service (Officer)
AFRS	Aerodrome Fire & Rescue Service
agl	above ground level
AIC	Aeronautical Information Circular
amsl	above mean sea level
AOM	aerodrome operating minima
APU	auxiliary power unit
ASI	airspeed indicator
ATC(C)(O)	Air Traffic Control (Centre)(Officer)
ATIS	Automatic Terminal Information System
BMAA	British Microlight Aircraft Association
BGA	British Gliding Association
BBAC	British Balloon and Airship Club
BHPA	British Hang Gliding & Paragliding Association
CAA	Civil Aviation Authority
CAVOK	Ceiling And Visibility OK (for VFR flight)
CAS	calibrated airspeed
CG	centre of gravity
cm	centimetres
cc	cubic centimetres
°C,F,M,T	Celsius, Fahrenheit, magnetic, true
DGAC	Direction Général à l'Aviation Civile
DME	distance measuring equipment
EAS	equivalent airspeed
EASA	European Aviation Safety Agency
EGPWS	Enhanced GPWS
EGT	exhaust gas temperature
EPR	Engine Pressure Ratio
ETA	estimated time of arrival
ETD	estimated time of departure
FAA	Federal Aviation Administration (USA)
FIR	flight information region
FL	flight level
ft	feet
ft/min	feet per minute
g	normal acceleration
GPS	Global Positioning System
GPWS	Ground Proximity Warning System
hrs	hours (clock time as in 12:00 hrs)
HP	high pressure
hPa	hectopascal (equivalent unit to mb)
IAS	indicated airspeed
IFR	Instrument Flight Rules
ILS	Instrument landing system
IMC	Instrument Meteorological Conditions
in	inch(es)
IP	intermediate pressure
IR	Instrument Rating
ISA	International Standard Atmosphere
kg	kilogram(s)
KCAS	knots calibrated airspeed
KIAS	knots indicated airspeed
km	kilometre(s)
kt	knot(s)
KTAS	knots true airspeed
LAA	Light Aircraft Association
lb	pound(s)
LP	low pressure
LDA	landing distance available
LPC	licence proficiency check
ltr	litre(s)
m	metres
mb	millibar(s)
MDA	Minimum Descent Altitude
METAR	a timed aerodrome meteorological report
min(s)	minutes
mm	millimetre(s)
mph	miles per hour
MTWA	maximum total weight authorised
N	Newtons
N_R	Main rotor rotation speed (rotorcraft)
N_g	Gas generator rotation speed (rotorcraft)
N_1	engine fan or LP compressor speed
NDB	non-directional radio beacon
nm	nautical mile(s)
NOTAM	Notice to Airman
OPC	Operator proficiency check
PAPI	Precision Approach Path Indicator
PF	Pilot flying
PIC	pilot in command
PNF	Pilot not flying
psi	pounds per square inch
QFE	pressure setting to indicate height above aerodrome
QNH	pressure setting to indicate elevation above mean sea level
RA	Resolution Advisory
rpm	revolutions per minute
RTF	radiotelephony
RVR	runway visual range
SAR	Search and rescue
SSR	secondary surveillance radar
TA	Traffic Alert
TAF	Terminal Aerodrome Forecast
TAS	true airspeed
TAWS	Terrain Awareness and Warning System
TCAS	Traffic Collision Avoidance System
TGT	turbine gas temperature
TODA	takeoff distance available
UHF	ultra high frequency
USG	US gallons
UTC	Co-ordinated Universal Time (GMT)
V_1	Takeoff decision speed
V_2	Takeoff safety speed
V_R	Rotation speed
V_{REF}	Reference airspeed (approach)
V_{NE}	never exceed airspeed
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VHF	very high frequency
VMC	Visual Meteorological Conditions
VOR	VHF omni-range