EDITOR:

D. K. Smith FRAeS
Hon. Fellow of IFA

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The International Federation of Airworthiness
IFA Secretariat
14 Railway Approach
East Grinstead
West Sussex RH19 1BP
UNITED KINGDOM

Tel: +44 (0) 1342 301788
Fax: +44 (0) 1342 317808
E-mail: sec@ifairworthy.org
Web: www.ifairworthy.org

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IFA News is published free of charge to members and to other interested parties to keep them informed of the activities of the Federation and to disseminate worldwide news from aerospace industry.

Except where stated none of the articles or other items in this newsletter are to be taken as expressing the opinion of the Federation.

IFA News is published once annually in March.

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Shuttle Columbia Inquiry Conculdes:
Continued from page 14.

On the other hand, if NASA had programs analogous to the FAA's service difficulty reporting (SDR) program, its air transport oversight system (ATOS), or its continuing analysis and surveillance system (CASS), the circumstances behind the precursor incidents might have been caught and fixed before continuing uncorrected to culminate in two losses of Shuttle and crew.

Above all, in the aftermath of an accident, the potential for a repeat is perhaps best minimized when both sides of a problem are addressed – cause and effect. In the aftermath of the 1996 fuel tank explosion that destroyed TWA Flight 800, a major hunt for ignition sources was launched (cause). More belatedly, it was recognized that inerting was necessary to nullify the vapors for full protection against explosions (effect).

The overarching theme of cause and effect emerges from the Shuttle investigation. Culture contributed to a dilution of proactive safety (cause #1). Foam shedding was tolerated, with resulting damage to the Shuttle's "flight critical" thermal protective system (cause #2, among others). Columbia's loss with all hands was the effect.

The manner in which the investigation was conducted met the test of independence in the eyes of NASA's IG. Others may take a different view, as the parallel case for an aviation accident would have the investigators working on the FAA payroll.

The full report giving issues and their relevance to commercial aviation can be accessed at http://www.caib.us/news/report/default.html .

This article is taken fromAir Safety Week Vol. 17 No 34 dated September 8th 2003 by courtsey of PBI Media.

FORTHCOMING EVENTS

MAR 15-17 16th Annual European Aviation Safety Seminar 2004. Presented by FSF and European Regionional Airline Association at the Intercontinental Hotel Princesa Sofia, Barcelona, Spain. Access www.flightsafety.org and www.eraa.org for more information

MAY 24-27 4th Gen Palexpo Ebace 2004. Adjacent to Geneva Airport. The only major European event to focus solely on business aviation. Contact info@ebace.com

JUNE 7-11 Annual US/Europe International Aviation Safety Conference, at Hyatt Regency Penn's Landing, Philadelphia, USA

JULY19-25 Farnborough Air Show Trade days Monday 19th –Friday 23rd 09.30-18.00 Public days Saturday 24th & Sunday 25th Flying Displays 14.00-1700 on Trade Days and 12.00-17.00 on Public days. Contact SBAC: www.sbac.co.uk

SEPT28-OCT 8 35th Session of the Assembly will be held at ICAO Headquarters in Montreal

OCT 12-14 NBAA 57th Annual Convention, La Vegas NV Contact NBAA Suite 400, 1200 18th St N.W. Washington DC. USA Contact E-mail: convention@ nbaa.org

NOV 15-18 IFA/FSF/IATA 57th IASS 2004 at the Pudong Shangri – La Hotel, Shanghai, China Theme: 'Sharing Knowledge to Improve Safety'

FAA – Flight Standards Information Bulletin for Airworthiness (FSAW-03-10)

Title: Fuselage Skin 'Scribe Mark' damage on B737 aircraft (EFF date 11-20-03)

This Bulletin concerns possible 'scribe marks' scratches on the fuselage at structural joints across the skin of Boeing 737 aircraft. Such scratches, if not repaired will result in fatigue cracks that could cause rapid decompression and subsequent hull loss.

Six older B737-200 aircraft were found to have damage at a significant portion of the joints along the fuselage, including critical lap joints.

The cause appears to be an incorrect exterior painting procedure. Some cracks were found and one aircraft was retired at 22,000 cycles. The action recommended is to accomplish additional surveillance of maintenance practices during the preparation of aircraft for painting. Particular attention should be given to standard practices and training concerning damage caused by sharp instruments. Adherence to standard practices for stripping of paint, cleaning sealents and general care of fuselage pressure boundaries should be emphasized.

Enquiries or comments regarding this bulletin should be made to Russell (Rusty) Jones AFS-309 at (+1 202 267 7228). Issued by David E Cann, Manager Aircraft Maintenance Division.

IFA Comment: This type of damage is possible on any aircraft type pressure hull skins and is therefore a practice which should be reviewed by all companies involved with preparation of aircraft for painting.

Contents

Foreward

2003 is claimed to have been one of the safest years on record for commercial air transport operations. Technologically driven safety initiatives appear to be making their impact after a considerable amount of international effort by industry professionals. The industry still needs to place increased effort into collecting and analyzing data.

Human Error situations, throughout all sectors of the industry, remain the major threat. There is no let up as far as maintenance errors are concerned, but it is difficult to find any detailed analysis of recorded errors, although they are suspected to be increasing.

Further improvements are reliant on industry understanding of how to beat this trend with the application of sound practices and increased training. Creating a Learning Environment with an Open Reporting system is essential in achieving this objective.

This volume includes classic examples of events which show up some basic failings, including fundamental post maintenance checks.

Developments in the new European Aviation Safety Agency (EASA) are also included. We will attempt to keep our members updated via our News Extras throughout the year.

John Saull
Executive Director

100 Year Old Technology on Show

This flyable full scale replica of the Wright Flyer was on show at the Aerospace Congress and Exhibition in Montreal. John Saull and Maurice Hare are seen inspecting the propellers which were being made on site. There was also a simulator where the flying characteristics could be experienced.

The complexity of this aircraft is testament to the large amount of detailed research carried out by Orville and Wilber Wright.

IFA NEWS

IFA WELCOMES NEW PRESIDENT

MR AL-ZABIN
Chairman/Managing Director
Kuwait Airways

The IFA has pleasure in announcing that they have appointed Engineer Ahmad Faisal Al-Zabin as their new President. Engineer Ahmad Faisal Al-Zabin became IFA's thirteenth President on 11th November 2003 at the AGM in Washington, DC, when he took over from Dr. John Lauber.

Engineer Al Zabin currently holds the position of Chairman & Managing Director of Kuwait Airways Corporation. He is married and has two children. He is a graduate in Aeronautical Engineering and holds A&C Licenses & Campus Licenses from Air Service Training, Scotland, UK.

He joined KAC as an engineer in December 1969, became the Engineering Director in 1979, Director General in 1981 and was appointed to his current post in 1999.

During the Iraqi Invasion, Engineer Ahmad Faisal Al-Zabin ensured the safety of both staff and aircraft. This included the preparation of contingency plans for rescue operation and evacuations and the establishment of an alternate base for Kuwait Airways. After liberation, he headed the workforce for re-building the operation of Kuwait Airways and of the airport

His involvement in the global aviation industry includes participation with the Gulf Corporation Council (GCC) to improve airlines and Human Factors, plus membership of the Arab Air Carriers Organization (AACO)

In his role as Chairman/Managing Director of Kuwait Airways, Engineer Al Zabin is responsible for compliance with all Airworthiness Requirements and hence, the safety of the fleet.

Annual General Meeting

IFA held its AGM on Tuesday 11th November 2003 at the J W Marriott Hotel, Washington. The meeting chaired by Mr Barry Green was well attended.

A copy of the full report has been distritued to members. Copies are available from the IFA Secretariat.

IFA Committee Dates 2004

Executive Commitee - Thursday 8th April, CAA Gatwick, UK
Monday 15th November, Shanghai, China

Technical Committee - Wednesday 7th April, CAA Gatwick, UK
Sunday 14th November, Shanghai, China

AGM - Tuesday 16th November, Shanghai, China

Scholarship Comm - Monday 15th November, Shanghai, China

Safety Awards Comm - September, venue to be decided

INPUT TO WEBSITE:

Our Website continues to be a most useful tool for the dissemination of information, especially in these financially difficult times. With it, we can distribute to our entire membership and indeed to anyone else in the aviation community who seeks information.

Members are once again invited to make the most of this facility – if you have any safety related data or information, which you would like to share with others, why not send it digitally to Linda at the Secretariat for consideration as IFA website material.

website:

www.ifairworthy.org

Secretarial e-mail:

sec@ifairworthy.org

Tony Hines, chief executive, U.K. Aviation Training Association, presented "Proving the Competence of the Aircraft Maintenance Engineer." Hines said that although the competence of aircraft maintenance technicians and mechanics traditionally has been inferred from their training and lengths of post-training experience, related standards often have not specified precisely what a trainee must know or do. As a solution, the United Kingdom has published generic engineering competence standards, which can be adapted to meet the needs of different industry sectors. The U.K. Aviation Training Association has used these to produce comprehensive performance standards for the profession.

SESSION 5 HUMAN FACTORS/SAFETY CULTURE.

Session Chairman: John W Saull, Executive Director IFA

Hazel Courteney, head of research, and Terry Newman, senior test pilot, U.K. Civil Aviation Authority, presented "Taming Human Error With a Systems Approach." Courteney and Newman said that although about 85 percent of aviation accidents include an element of human error in the causal chain, little effort has been directed in human factors research to "meta human factors" - the relationships among individual working domains of aviation, such as aircraft design and air traffic management. If any mismatch occurs so that domains are not perfectly compatible, human operators must compensate because they are the only flexible, adaptable part of the overall system that can make adjustments in the field. If domains diverge too far, however, then this "human glue" binding them may come under strain and possibly fail. The typical example is a flight crew being put in a position in which, because of commercial pressure, traffic density, airspace constraints and approach procedures, air traffic controllers expect the crew to operate at the limit of aircraft performance capability via instructions to decelerate rapidly and to descend simultaneously, a challenging energy-management task. The JAA Interim Policy on Human Factors for Certification of Flight Decks (INT/POL/25/14, adopted June 2001) is an example of recent efforts to address such issues through manufacturer compatibility with air traffic management systems and by identifying training requirements

Randy N. Ramdass, director, aircraft maintenance, George Bush Houston (Texas, U.S.) Intercontinental Airport (IAH), Continental Airlines, presented "Managing Safely: Creating and Sustaining a Positive Safety Culture." Ramdass said safety in the workplace currently is viewed by the company as a significant component of productivity and cost reduction. Prior to the current safety practices at Continental's IAH maintenance facility, safety was managed differently and workers were not an integral part of the safety process, except for occasional assignment to safety committees or performing routine statutory inspections, he said. Management did not enforce safety-related policies such as hearing protection, eye protection or lockout/tagout procedures in the same manner as enforcing policies related to punctuality and insubordination, he said. A five-year effort to improve workplace safety enabled the company to demonstrate its long-term commitment to an inclusive safety process and to change employees' perceptions and safety-related behaviours.

Closing Address

The closing address was given by Dr John Lauber, IFA Immediate Past President in lieu of Mr Admad Faisal Al Zabin, Chairman & M.D Kuwait Airways, IFA President 2003-2005 who was unable to attend.

Dr Lauber stressed the value of the technical papers presented and thanked the speakers for their contributions. There was certainly some important messages to take home.

The presentations have been published in proceedings of the meetings, available in print and on compact disc (CD). FSF members receive one copy of the proceedings on CD at no cost. Place proceedings orders with Ahlam Wahdan, FSF membership services coordinator +1 (7030 739 6700, extension 102). Prices for the CD edition are US$29 (FSF members)/$79 (non members): for the print edition, $95 (members)/$165 (non-members). The CD edition includes a built-in search engine and a built-in installation program for Microsoft Windows operating systems and Apple Mcintosh operating systems

Don Bateman, chief engineer, Flight Safety Systems, Honeywell, presented "How to Terrain-proof the World's Civil Aircraft Fleet - Revisiting an Old Problem." Risk of CFIT accidents for large commercial jets operated in North America, Western Europe and other developed countries currently is about 100 times less than in 1974, but for many operators in Africa, Asia and South America, the risk remains at 1974 levels. The CFIT risk for regional turbine aircraft with 10 passenger seats or more was reduced by about 30 times in the United States after ground-proximity warning systems (GPWS) were installed beginning in 1993, but CFIT accident risk for U.S. air taxi and feeder cargo aircraft (unequipped with GPWS) remains about 75 times greater than current regional turbine operations. Providing CFIT training to regional pilots is important, and terrain awareness and warning systems (TAWS) have helped to overcome earlier weaknesses of GPWS: absence of terrain warning while configured to land, inadequate warning time before flight into precipitous terrain and absence of visual awareness of significant terrain. TAWS is the term used by JAA and FAA to describe equipment meeting International Civil Aviation Organization (ICAO) standards and recommendations for GPWS equipment that provides predictive terrain-hazard warnings; *enhanced GPWS* and *ground collision avoidance system* are other terms used to describe TAWS equipment. U.S. commuter aircraft and on-demand aircraft are required to be fitted with TAWS by March 2005. All operators must keep the database included in TAWS equipment current with the latest free World Geodetic System 1984 (WGS-84) terrain/obstacle/runway data. WGS-84 is a standard for defining the location of a runway (latitude/longitude) and its elevation (relative to mean sea level) based on its geodetic model. Instrument approach-design procedures used by the United States and by other countries also must be compatible with ICAO design procedures for terrain clearance during circling and manoeuvring, and older local coordinates must be converted to WGS-84 coordinates. Training also is important because if a pilot uses the global positioning system (GPS) as a navigation aid to conduct an instrument approach that is not approved for GPS, an accident could occur, he said. In 2003, all operators should be using GPS for TAWS - independent from the navigation-data source of the flight management system - which may contain navigation database flaws, map shifts and differences compared with surveyed WGS-84 coordinates. Operators also should enable the peaks function of their TAWS equipment to further reduce risk, he said.

Robert M. MacIntosh, chief advisor, international safety affairs, U.S. National Transportation Safety Board (NTSB), presented "Flight Recorders - Successes, Failures and How to Improve: Observations from the U.S. National Transportation Safety Board." MacIntosh said that accident investigators depend on flight recorders and cannot make the most effective use of them if the readout is delayed or they have to cope with anomalous readings or missing data. He said that the cause of one major airline accident was determined solely with information from the flight recorders; safety recommendations were issued and corrective actions were taken without the need for undersea wreckage recovery. Crews can help preserve cockpit voice recorder (CVR) data by using the press-to-test function on the first flight each day and by manually stopping the CVR after an incident or accident. Operators also must ensure that the tape or other recording medium remains in serviceable condition. Although digital flight data recorders are designed to withstand physical forces during an accident, investigators sometimes find that data-recording processes are not robust or accurate because of human errors in setting up measurements of flight parameters or a flight data acquisition unit did not function properly. NTSB recommends attention to adequate scheduled maintenance and pre-flight inspection of recorders, preventing anomalies introduced during retrofits and overhauls of a system, and verifying that aircraft sensors or transducers have not failed prematurely because of contamination or wear.

SESSION 4 AIRWORTHINESS/ENGINEERING

Session Chairman: Kelvin Kellaway, Vice Chairman, IFA Executive Council and Exececutive Comm. Chairman, SIFCO Turbine Group

Damian Horrigan, Ph.D., design services manager, Air New Zealand Engineering Services, presented "Managing Design Changes Safely in an Operations, Maintenance and Overhaul Environment." Horrigan said that historical trends in safety regulation have influenced changes in the management and approval of design changes that affect the aircraft maintenance, repair and overhaul environment. He said that continually adding to design standards and creating increasingly narrow definitions of competency of people who certify aircraft to these design standards, however, can lead to new safety problems, some of which take considerable time to appear. Aircraft increasingly are operated beyond their original design service goals, requiring changes to design standards, changes to maintenance programs, interactions between various parts of an organization and better understanding of problems. Review of previous design changes therefore becomes mandatory to maintain safe operation because accidents have been directly attributed to deficient original design or type design changes, he said.

Juan Carlo Mileib Ramires, continued airworthiness engineer, Embraer (Empresa Brasileira de Aeronautica), presented "Advantages of the Safety Assessment Continuous Monitoring." Ramires said the mean time between failures (MTBF) of aircraft components - as used in the safety-assessment fault-tree analysis (FTA) calculation under FAA/JAA standards for a new aircraft design certification - is based on predictions, laboratory tests, expertise of the manufacturer or field-data reliability of the component in similar applications. Embraer experience has shown, however, that when an aircraft component is subjected to some environments, its MTBF may be different from the MTBF previously adopted. This difference could affect significantly the original FTA calculation, making the failure less probable or more probable than expected. When the FTA can be updated with actual MTBF data, especially if a more conservative MTBF was adopted during the design phase, direct advantages are possible - such as monitoring the approved level of safety or maintenance-interval extensions, he said.

EXPANDING MEMBERSHIP ENHANCES IFA's KNOWLEDGE BASE

IFA's membership continues to expand and during 2003 we were pleased to welcome five new members. Oman Air, SR Technics, Shell Aircraft Ltd, Paladin Aerospace and CAST - China.

Mr Joseph Stroll, Executive VP, Engineering & Quality of SR Technics the Swiss based engineering firm receiving their IFA certificate.

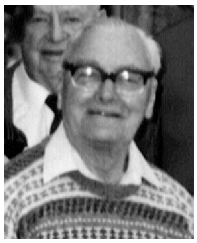
Mr Brian Humphries, Managing Director and Mr Eric Clark Director - Air Safety and Global Products of Shell Aircraft Limited receive their IFA Membership Certificate from Mr John Saull, IFA Executive Director

Mr Zhou Kaixan receiving CAAC/CAST's IFA Membership Certificate at the Washington Conference.

THANKS TO RETIRING PRESIDENT

The Officers and Council of IFA would like to take this opportunity to record their thanks to our retiring chairman, Dr John Lauber, for all his help and support during the past two years. Despite his extremely busy role as Airbus's VP – Technical & Safety for North America, John was ready and willing to spare us the time to fulfil his duties as our President. We thank him and wish him well in all of his future endeavours.

OBITUARY



Mr W H Keen, Founder Member of IFA

We regret to have to report that another of our colleagues, Wally Keen as he was affectionally known, a founder member of IFA, from New Zealand, passed away in September last at 84.

Wally was a very proud and capable Licensed Aircraft Maintenance Engineer who felt very strongly about supporting airworthiness and the LAME, particularly avionics. Wally was a Senior Inspector with Air New Zealand and its predecessor, TEAL. He was very active in SLAET (NZ) affairs, serving for many years on the Auckland Branch Committee. He succeeded the late Len Gore as SLAET (NZ) National Secretary and Council Member and continued in that role until the late 1970s.

In the late 1970s SLAET-UK, who had already spent a great deal of time and resources in getting IFATE (the predecessor of IFA) off the ground stated that it could no longer carry the major administration responsibility of IFATE and proposed that consideration be given to disbanding the organisation. An emergency meeting was held at the RAF Club in London, on 24th March 1975

Wally travelled to London to attend the meeting together with Barry Geddes, when he was SLAET (NZ) National President; they came with a message from the IFATE Patron, the late Sir Geoffrey Roberts that IFATE must continue to survive. The outcome of this meeting was to rejuvenate and develop IFATE into an international airworthiness organisation…and so IFA was born.

Concorde Operations Statistics – A remarkable achievement

Concorde was retired from commercial service by Air France and British Airways in June and October 2003, respectively. It was in airline service from 1976 to 2003.

Twenty flying aircraft were built between 1966 and 1979 spread equally between the UK and France, constructed in Bristol and Toulouse.

There were 6 development aircraft – 2 Prototypes, 2 Pre-production and 2 initial Production, which never saw commercial service. Both operators had a fleet of 7 aircraft.

Development Aircraft (1968 – 1976)
Total Flying Hours: 5,100 Total Landings: 2,500 Supersonic Cycles: 1,500

British Airways Fleet
Total Flying Hours: 149,000 Total Landings: 52,100 Supersonic Cycles: 45,000

Air France Fleet
Total Flying Hours: 90,100 Total Landings: 32,100 Supersonic Cycles: 26,900

Concorde was the first commercial aircraft to be fitted with Fly-by-Wire flight control systems (with manual back up), Digital variable geometry Air Intake control systems, Full authority electronic engine controls, An aircraft fuel transfer CG system and Reheated engines (giving 20% thrust augmentation for take off and transonic acceleration to M=1.7)

Maximum Mach No achieved: 2.235 (during development trials)

Maximum Altitude achieved: 68,000 ft (12.88 miles – during development trials)

Fastest commercial 'Round the World' flight (Air France): Eastbound New York – New York 31 hrs 27 mins 49 secs – August 15-16 1995

Fastest Atlantic Crossing: (British Airways) New York – London: 2 hours 52 mins 59 secs – February 1996

The surviving airline service aircraft are placed at, or are scheduled for museums in: UK (London Airport, Bristol, Manchester, Edinburgh), USA (Washington, New York, Seattle),BARBADOS, FRANCE (Toulouse, Paris , Le Bourget), GERMANY (Sinsheim).

NOTE: Website www.concordesst.com.fleet.html gives detailed information on the whole Concorde story – many thanks on behalf of IFA.

A Summary of the Papers Presented

More than 500 aviation safety professionals representing organisations in more than 50 countries attended the meeting that included presentations by specialists from industry, government and academia. The following are a selection of the papers presented

SESSION 1 –GLOBAL UPDATE

Session Chairman: Captain Edward Davidson, Director of Safety, IATA

James M. Burin, FSF director of technical programs, presented "Aviation Safety 2003: The Year in Review." Burin said that 11 hull-loss accidents occurred from January 2003 through Nov. 1, 2003, among large turbojet airplanes (greater than 60,000 pounds [27,000 kilograms] maximum takeoff weight [MTOW]). A hull loss is damage to a commercial airplane that is substantial and beyond economic repair; or an airplane that remains missing after search for wreckage has been terminated; or an airplane that is substantially damaged and inaccessible. Ten hull-loss accidents involved turbojets of less than 60,000 pounds MTOW in commercial operations or corporate operations. Turboprop airplanes with more than 14 seats or MTOW greater than 8,300 pounds (3,800 kilograms) were involved in 24 hull-loss accidents in this time period; no fatalities occurred in 11 of these accidents. Controlled flight into terrain (CFIT), approach-and-landing accidents (ALAs) and loss-of-control accidents continued to claim the majority of aircraft and account for the majority of fatalities, he said. CFIT occurs when an airworthy aircraft, under the control of the flight crew, is flown unintentionally into terrain, obstacles or water, usually with no prior awareness by the crew. This type of accident can occur during most phases of flight, but CFIT is more common during the approach-and-landing phase, which begins when an airworthy aircraft under the control of the flight crew descends below 5,000 feet above ground level (AGL) with the intention to conduct an approach and ends when the landing is complete or the flight crew flies the aircraft above 5,000 feet AGL en route to another airport.

Klaus Koplin, chief executive, JAA, presented "The JAA Safety Strategy Initiative [JSSI]." Koplin said that since 1998, JSSI efforts have been directed toward achieving further reduction in the annual number of accidents and the annual number of fatalities irrespective of the level of air traffic for large airplanes operated in commercial air transportation. The output of the JSSI will comprise a focused safety agenda, research, training kits, advisory circulars and changes to civil aviation requirements based on partnership, cooperation and public perception. JSSI has incorporated the analytical work of CAST based on past accidents and incidents, and also follows a predictive approach to envision safety issues through analysis, by the Future Aviation Safety Team (FAST), of changes affecting the aviation system - including those involving aircraft, operations and air navigation services.

Jay J. Pardee, manager, Engine and Propeller Directorate, U.S. Federal Aviation Administration (FAA), presented "Commercial Aviation Safety Team (CAST) Enhancements to Aviation Safety." Pardee presented information about measuring results from the safety-improvement process used by CAST. The strategic safety plan contains 46 safety enhancements, of which 22 have been completed, with the potential for a 73 percent reduction in the fatality risk in U.S. air transport by 2007, and also producing an approximately US$620 million cost avoidance (savings) every year for the industry. Accidents cost $76 for every flight, and $56 per flight will be saved by implementing all the safety enhancements and using current reporting systems to identify precursors of accidents, changing risks and emerging risks, he said. CAST also has formed a joint safety analysis team to investigate and develop interventions in the areas of icing (particularly ground de-icing), maintenance error, midair collisions and cargo handling/loading. Current U.S. enhancements also can be applied to the global aviation system, and CAST will incorporate results from the European Joint Aviation Authorities' (JAA) Future Aviation Safety Team (FAST) analysis into its plan.

SESSION 3: TECHNOLOGY/ENVIRONMENT

Session Chairman: James Terpstra, Senior Corporate Manager, Flight Information Technology and Aviation Affairs, Jeppesen

Capt. David Massey-Greene (retired), operational concept analyst, and Amy Johnson, crew information services marketing director, The Boeing Co., presented "Electronic Flight Bag." Massey-Greene and Johnson said that electronic flight bag (EFB) technology - open-architecture, information-management devices that aid pilots and airlines in conducting flights more efficiently, economically and safely - have evolved beyond digital display of paper documents to include aircraft maintenance monitoring, performance calculations, electronic messaging, cabin video surveillance and real-time weather. EFBs are being used to reduce costs of data management and distribution, potentially reduce training costs, reduce risk of runway incursions and avoid medical costs associated with pilot injuries from carrying heavy flight bags filled with paper. FAA recognizes three types of EFBs: portable EFBs, semi-portable EFBs and installed EFB avionics. In fall 2003, an installed EFB in a Boeing 777 provided airport surface moving maps and flight-deck-door video surveillance for the first time, in addition to terminal charts, electronic documents and performance data. A wider effort is underway to integrate these devices into networks that collaboratively connect pilots, cabin crews, maintenance personnel and airline operations personnel.

THE 56TH ANNUAL INTERNATIONAL AIR SAFETY SEMINAR
Washington DC November 10-13 2003

THEME: 100 YEARS AFTER KITTY HAWK....THE CHALLENGE CONTINUES

Aviation professionals shared their thoughts on pursuing the most effective methods to improve international aviation safety during the joint meeting of the Flight Safety Foundation (FSF) 56th annual International Air Safety Seminar (IASS), the International Federation of Airworthiness 33rd International Conference and the International Air Transport Association (IATA)

Dr John Lauber, President of the International Federation of Airworthiness presented the IFA Introductory Speech at Opening Ceremonies.

Dr Lauber welcomed such a large number of professional delegates attending this 12th Joint IFA/FSF/IATA Safety Seminar which confirms that industry continues to view safety as its highest priority despite the difficult times in which we find ourselves. It demonstrates our determination to an integrated approach to airworthiness issues. Safety is the sum of its individual professions.

He also explained in some detail the international role of IFA in driving forward its work with international committes and its own initiatives which are making a significant contribution to worldwide safety standards.

He specifically mentioned the strength of these International Safety Seminars which brings together safety experts from all aspects of commerical aviation.

Aviation Safety, Security Can Be Complementary Trends, NTSB Chairman Tells International Aviation Safety Meeting

Chairman Ellen G. Engleman says dual focus is part of the "new reality" that resulted from the 2001 terrorist attacks in the United States.

The aviation industry should not neglect safety concerns to focus on security, U.S. National Transportation Safety Board (NTSB) Chairman Ellen G. Engleman said Tuesday during the joint meeting of the Flight Safety Foundation (FSF) 56th annual International Air Safety Seminar, the International Federation of Airworthiness (IFA) 33rd International Conference and the International Air Transport Association.

"It cannot be a question of safety or security; it must be safety and security," Engleman said in the keynote address to more than 450 aviation safety professionals from 52 countries. The Sept. 11, 2001, terrorist attacks in the United States presented the aviation industry with "a new challenge that none of us had anticipated," she said. "I see it as an adjustment to a new reality."

Despite the need to address security concerns, no one should forget that "we still have lost more people in safety-related accidents than we have in security accidents," Engleman said. She said that, in some instances, new security requirements - such as those regulating the transportation of hazardous materials - also have resulted in safety improvements.

Also, Engleman said that the NTSB Academy opened this year, and she described it as an "academic sanctuary" for aviation safety research. The facility, located in Ashburn, Virginia, houses NTSB investigation training programs and safety training programs, and provides a setting for safety conferences and related meeting

IFA SCHOLARSHIPS & AWARDS

WHITTLE SAFETY AWARD

IFA annually grant's its prestigious Whittle Safety Award, after review by its selection Board of entrants from across the Aerospace global community. The award honours the work of Sir Frank Whittle, father of the jet engine and comprises a medal and citation. IFA wishes to honour the global aerospace community's most outstanding achievements in the field of air safety. The Federation's award is to provide recognition on an international scale.

The 2003 Whittle award has been presented to

Mr Michael Spencer

Technical & Quality Director

Rolls Royce Plc

The citation reads:

'In recognition of his personal contributiion to the safe design and in-service managment of civil aero engines over the last 25 years'.

Dr Ron Yates and Dr John Lauber with Mike Spencer in front of the original Wright Flyer at the Smithsonian Museum, Washington (picture: FSF)

Mike Spencer joined Rolls-Royce as a Graduate Apprentice in 1968 and then worked on the RB 211-22B engine for the L1011. In 1980 he assumed responsibility for Development and Certification of the RB211-535 engines for the Boeing 757. He later became Rolls-Royce Chief Engineer for the V2500 engine on the A320 and then for the Trent 700 on the A330, with accountability for maintaining the integrity and safety of the engines. In 1985 he became Technical and Quality Director of Rolls-Royce Plc and the custodian of the Rolls-Royce Safety process. He was the independent propulsion Specialist on the UK Civil Aviation Authority Airworthiness Requirements Board from 1995 to 2003. He has always demanded the highest safety standards and encouraged the adoption of new regulations where justified, to enhance aircraft safety eg. the new "large flocking bird" rule.

On receiving the award, Mike Spencer said:

"I am very honoured to receive the Sir Frank Whittle Safety Award. Many experienced Engineers have contributed to the Safety Process in Rolls-Royce, and also to the industry participation in the harmonization and development of improved engine regulations in JAR-E and FAR 33. I am very pleased to accept this award on behalf of the total Rolls-Royce Engineering team."

Call for 2004 IFA Nominations

WHITTLE SAFETY AWARD

It can be a single outstanding contribution or achievement, a major technical innovation, long and valued service or for work that will further advance the safety of aircraft. This award gives international recognition.

For more information, contact Dr Ron Yates, Safety Award Committee

By e-mail: ryates@comcen.com.au or by fax +61 2 9427 5010

Submit your nomination(s) by fax or e-mail by the first of July 2004

Fax: +44 1342 317808 e-mail: sec@ifairworthy.org

AEROSPACE CONGRESS & EXHIBITION MONTREAL SEPT 2003

IFA attended this bi-annual Aerospace North America/Society of Automotive Engineers(SAE) event for the second time. The first time was during the September 11th atrocities. Again, it provided a good exposure and considerable interest was shown at the IFA Stand on the safety initiatives being carried out.

An IFA technical session titled 'Continuing Airworthiness Technical Issues' was given at the SAE Advances in Aviation Safety Conference. Four papers were presented by IFA committee members and Canadian IFA Member representatives:

Speaker Team (Left to Right) - Frederick Wright, John Goglia, John Saull, Frank Fickeisen, Keith Barnett.

'Events Analysis, Human Factors and their application to Safety Management' – John Saull, IFA Executive Director

'Simple Ways to Measure Fleet Health' – Keith Barnett, Bombardier Aerospace, Chief Airworthiness Engineer

'Airworthiness Decision Process' – Frank Fickeisen, IFA Technical Committee and Boeing Consultant

'Continuing Airworthiness' – A TC Civil Aviation Perspective' – Frederick Wright, Transport Canada – Prairie and Northern Region, Regional Manager Aircraft Certification.

John Goglia, NTSB Member kindly chaired the session.

These papers were well received by a sizeable audience, for a specialist technical session.

NOTE: Copies of these papers can be obtained via the IFA Secretariat

EVERYDAY VIDEO

IFA's very own training video, entitled "Everyday", continues to be very popular throughout the Industry. It is an ideal tool with which to introduce the concept of error management. If you have not already used it, maybe you should take advantage of the very generous 50% discount offered to IFA members for the purchase of this excellent training tool. It is available in both PAL & NTSC formats and features Professor James Reason explaining his concepts of "layered defences" and "blame culture".

It is available from the Secretariat at the following price per copy:

IFA Members	£60.00 including UK VAT or US$96.00
Non-members	£120.00 including UK VAT or US$190.00

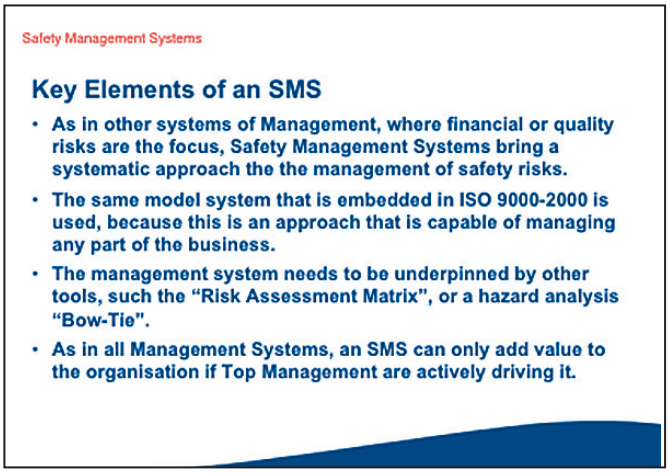
(Please specify PAL or NTSC format when ordering)

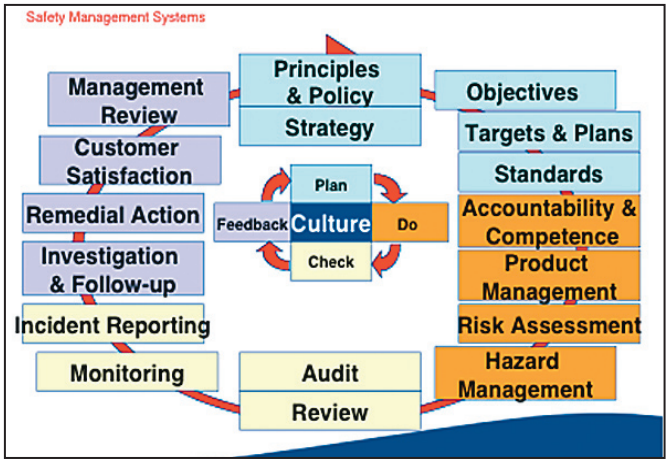
IFA WORKSHOP GOES FROM STRENGTH TO STRENGTH

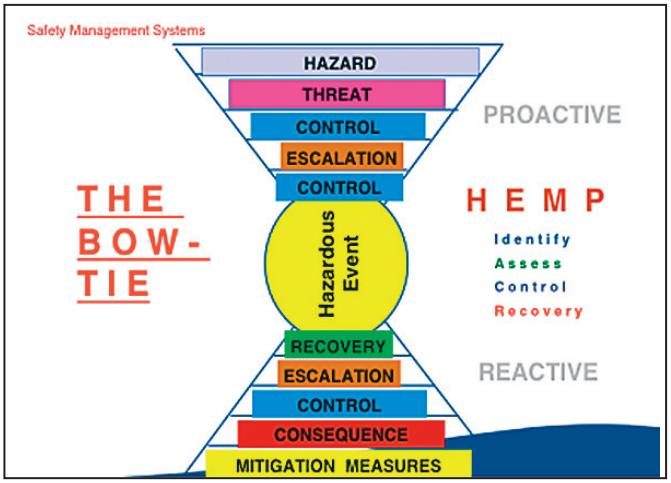
As part of the IASS Washington Conference in November 2003, IFA again presented it's very successful Safety Management System Workshop. With more delegates than ever before from across the world as well as across the industry, it proved to be a worthwhile session promoting discussion and understanding of this important subject.

Cliff Edwards, Quality & Safety Development Manager of Shell Aircraft Ltd produced a presentation covering all aspects of Safety Management systems, stressing the need for the absolute commitment of top level managment to achieve succesful implentation. The workshop was free of charge and all delegates received a full copy of the presentation along with the very useful CAP 712 document produced by the UK CAA.

Extracts of Cliff's presentation are shown below, highlighting the Key Elements of an SMS and showing some of the working tools which can aid the processes involved.







FUTURE IFA WORKSHOPS

Due to the success and demand, IFA intend to run the Safety Management System Workshop at the 2004 IASS conference in Shanghai - November 15-18, 2004

Along side this they are planning to also run a Workshop following up on the published White Paper entitled - 'Continuing Airworthiness - The Basic Story'. Mr Frank Fickeisen, Consultant - Boeing Commerical Airplane Group will present a chart detailing the inter-relationship between various safety groups and panels in the aviation safety world. It will be a very useful cross-reference document in this field.

Full course details will be published with the Conference Agendas in June 2004. Further details will be available from the IFA Secretariat - Fax: +44 1342 317808 e-mail: sec@ifairworthy.org

A Complacent Safety Culture Can Kill, Investigation Concludes

Shuttle Columbia inquiry offers sobering grist for aviation safety at large

The investigation into the Shuttle Columbia tragedy may have dealt with a space ship, but the findings in the final report of the February 1, 2002, disintegration during re-entry provide relevant insights and even object lessons for the aviation industry.

The accident was the result of a willingness to tolerate incidents the Shuttle was not designed to experience – notably damage to the foam insulation tiles covering most of the Shuttle and to the reinforced carbon-carbon (RCC) panels comprising the leading edges that protected the aluminum wings from the searing heat of re-entry. During the history of Shuttle launches, both tiles and RCC panels were struck repeatedly by foam insulation applied to the external fuel tank, and shed during launch due to some combination of pre-existing moisture penetration, vibration, aerodynamic loading – the cause is not yet understood fully.

What lesson does the Columbia's tragedy have for aviation safety? This thought occurs: the approach taken for the Shuttle is akin to designing airliners on the assumption that neither structure nor engines would ever experience the impact of bird strikes. Yet bird strikes have inflicted serious damage and have occasionally brought down even large transport-category aircraft.

The adage that the absence of accidents is not proof that the operation is safe applies to the history of the Space Shuttle, although with two fatal accidents in 113 flights the absence of accidents was punctuated by fatal accidents an average of every 62.5 flights – a rate that would be wholly unacceptable for even a single hour's worth of earth-bound flights.

What emerges from the Columbia Accident Investigation Board's (CAIB) final report is a pattern of complacency. The board, headed by retired Admiral Harold Gehman, charged that the prevailing culture at the National Aeronautics and Space Administration (NASA) was complicit. But cultures are comprised of people, and in congressional hearings last week, some legislators groused that more heads at NASA should have rolled.

The complacency is illustrated in the little things, both in the air and on the ground, which may not be so little in terms of consequences. Three of the doomed astronauts were not wearing the protective gloves for their pressure suits and one was not wearing a helmet. To be sure, had they been wearing the full suit, they would not have survived the forces of blunt trauma and hypoxia that killed them, but had the stricken vehicle survived to 40,000 feet, where they would have been low enough to bail out, the astronauts would have needed the protection of the full suit. On the ground, mission managers were not holding daily status meetings, as required by policy. Five meetings were held over the course of the 16-day mission.

In this case, the absence of accidents since the 1986 loss of Shuttle Challenger did not mean the operation was being safely managed.

A few large themes emerge. For one thing, the temptation to substitute analysis for testing should be resisted – particularly when evaluating a threat to safety and survival (the growing pressure to substitute computer simulations for actual emergency evacuation trials comes to mind as an example for aircraft). In NASA's case, a computer model called Crater used to assess the damage caused by small pieces of foam – averaging 1-by-3 inches in size – coming off the external tank and striking the Orbiter was stretched to assess strikes on the Shuttle from pieces of foam about the size of a small beer cooler – 400 times bigger.

When a block of foam this size was hurled at an RCC panel, the impact of the so-called "lightweight" foam blew a large hole in the composite panel's face – enough to completely compromise its protective insulating function – and in fact opened a pathway for the superhot plasma of re-entry to blowtorch its way into the wing's innards.

The plain inference in the report is that one or more untoward precursor events should precipitate some energized testing. By this standard, the Federal Aviation Administration (FAA) falls short dismally and regularly – as evidenced by the failure to test metalized Mylar thermal acoustic blanketing even after warnings were received of its flammability from the Civil Aviation Administration of China (CAAC). It took the 1998 crash of a Swissair MD-11 to stimulate the FAA to undertake testing to produce a more demanding flammability test for insulation blankets.

The CAIB report laments the absence of data-driven safety, a fundamental article of faith in the FAA: "The Space Shuttle Program has a wealth of data tucked away in multiple databases without a convenient way to integrate and use the data for management, engineering or safety decisions." Substitute FAA for Space Shuttle Program and this sentence has a familiar ring.

Perhaps one solution is legislation compelling regulators to maintain integrated databases in a usable fashion, and have them undergo an inspector general (IG) audit periodically. Accidents are not always preceded by a wake-up call, but frequently this is the case.

Continued on page 20

AIRWORTHINESS AND SAFETY NEWS

Faulty Wire Installation Cited in A320 Control Problem

The airplane began banking left during takeoff from Frankfurt, Germany, and the captain was unable to correct the bank with normal use of controls The German Federal Bureau of Aircraft Accidents Investigation said that two pairs of wires on a flight control computer were reversed during maintenance.

FSF Editorial Staff - Aviation Mechanics Bulletin Vol 51 No 6 Nov-Dec 2003

About 1100 local time March 21, 2001, immediately after liftoff from a runway at Frankfurt (Germany) Airport for a flight to Paris, France, an Airbus A320-200 banked slightly left. When the captain (the pilot flying) tried to correct the bank angle using the left sidestick, the bank angle increased to about 22 degrees.

The captain transferred control to the first officer, who pressed the "take-over push button," returned the airplane to a normal flight attitude and flew the airplane to Flight Level 120 (approximately 12,000 feet), where the two pilots analyzed the flight-control anomaly.

"With an input on the left sidestick, the airplane — after a short shaking and a brief bank angle corresponding to the input — suddenly reacted [in a] contrary [manner]," the German Federal Bureau of Aircraft Accidents Investigation (FBU) said in an incident report translated from German into English. "The right-hand sidestick functioned normally."

The airplane was not damaged in the incident, and none of the 121 people in the airplane was injured.

After the incident, the first officer flew the airplane back to Frankfurt, where maintenance personnel conducted a flight control check and observed that "the symbols of the ailerons on the ECAM [electronic centralized aircraft monitor] first — and for a very short moment — moved into the corresponding direction, as if everything [was] all right, before the ailerons moved into the opposite direction."

The FBU said, in its final report, that the incident occurred for the following reasons:

- "During repair work on the plug of the elevator/aileron computer (ELAC; part of the A320 fly-by-wire control system) no. 1, two pairs of wires had been [reversed];
- "The error remained undetected; [and,]
- "The error was not recognized by the flight crew during the flight control check."

FBU said that the following factors contributed to the incident:

- "Unclear and difficult-to-handle documentation, so that [an incorrect] wiring diagram was used;
- "Diversion from the manufacturer's data by maintenance support [personnel];
- the supervising authority; [and,]
- "Deficiencies in the 'After-start Checklist' for the conduct of the 'Flight Control Check.'"

Flight Was the First After Maintenance

On the day of the incident, the crew flew two flights in another aircraft before a scheduled aircraft change at Frankfurt. The incident airplane had been undergoing maintenance for two days, and entries in the technical logbook indicated that all prior reported anomalies had been resolved and that the airplane had been released to service in accordance with regulations.

The crew arrived at the airplane about 50 minutes before departure to complete preparations for the flight. After starting the engines and before taxiing the airplane to the departure runway, they conducted the "After-start Checklist," including the flight control check, and found no anomalies. They observed no anomalies during taxi or the takeoff run, but as the captain rotated the airplane for takeoff, he observed the increasing left bank angle.

The A320-200, manufactured in 1990, is a fly-by-wire aircraft, in which seven computers are used for primary control of the airplane's flight controls. The computers include two ELACs for elevator and aileron control; the ELACs also control three spoiler/elevator computers (SECs), which control the spoilers and are available as backups for elevator and stabilizer control. In addition, two flight augmentation computers (FACs) stabilize the airplane's flight attitude.

Two sidesticks — one for the captain and one for the first officer — allow for manual control inputs; the sidesticks are not linked mechanically with each other. When one of the pilots moves a sidestick, the movement is translated into electrical signals that are transmitted to the corresponding computers. For one pilot to take control, he or she must depress the take-over push button on the sidestick and continue to press the button for more than 30 seconds.

Operator Had Not Monitored Maintenance Organization

Because the operator did not have a maintenance organization, all maintenance — including this repair work — was performed by an outside maintenance organization under contract with the operator. Joint Aviation Requirements–Operations (JAR–OPS) 1.900 requires operators to monitor contracted maintenance

work to ensure that the work is performed properly and in compliance with approved procedures. For this purpose, an audit plan must be submitted annually to the Luftfahrt-Bundesamt (LBA), the German civil aviation authority.

"The operator had not audited the maintenance organization, and thus the quality system of the operator was not in a position to recognize systematic faults with the procedural organization in time," the report said.

The report said that the LBA had said several times — most recently in the context of its extension of the operator's air operator certificate — that the operator lacked sufficient personnel to perform the required monitoring activity.

The contracted maintenance organization [which was not identified by the report] was granted JAR-145 approval by the LBA in 1992. (JAR-145 approval requires maintenance organizations to comply with the regulations of JAR-145 and to accomplish procedures in accordance with a plan approved by LBA.)

The report said that the LBA also lacked sufficient personnel to perform adequate oversight of the maintenance organization. Oversight of the operator's contracted maintenance organization was conducted by one LBA technical inspector until one month before the incident, when an additional inspector was assigned to help oversee the organization.

"It does not seem to make sense that such a large organization … falls within the purview of only one technical inspector of the LBA, who is also responsible for several other organizations," the report said. "For reasons of capacity, the technical inspectors are not in a position to check the organizations more thoroughly. Especially in the organization concerned, plenty of internal provisions had been compiled in the course of the years, the contents of which were not sufficiently known to the technical inspectors. Up to February 2001, only one technical inspector of the LBA was responsible for the operator, as well as the maintenance organization; now this task is shared by two LBA staff members, which, however, still seems to be insufficient."

ELAC Replaced Three Days Before Incident

On March 17, 2001, three days before the incident, the no. 2 ELAC was replaced after it failed in Hamburg, Germany. In subsequent tests, the unit functioned properly.

On March 18, 2001, an error message involving the no. 2 ELAC appeared while the airplane was being taxied at Frankfurt. The report said that "by briefly pulling the circuit breakers of the ELAC no. 2, the crew made a 'RESET,' after which no further error message appeared."

Later that day, however, after the engines were started at the airport in Moscow, Russia, another no. 2 ELAC error message appeared.

"The airplane was parked again and [the engines were] shut down," the report said. "As a corrective action, ELAC no. 1 and ELAC no. 2 were interchanged. The defect, however, persisted on position 2. Therefore, the corresponding circuit breakers were pulled pursuant to the operational maintenance procedure (OMP) and in accordance with the minimum equipment list (MEL), so that the defect was now on position 1. The return flight [to Frankfurt] was conducted in accordance with the MEL with a functioning ELAC no. 2."

The defect was entered in the technical logbook, and the airplane was delivered to maintenance personnel at Frankfurt Airport on March 18.

During their inspection, maintenance personnel found a bent connection pin (pin 6K) in a plug segment (segment AE) of the socket for the no. 1 ELAC.

"The attempt to replace the connection pin without replacing the whole plug segment was not successful," the report said. "A safety spring of the connector pin had come out and could not be inserted again. Therefore, it was decided to replace the plug segment AE, but there was a problem: [There] was no suitable spare plug segment for this series of airplane [in] stock. Consequently, it was decided to replace all four plug segments — AA, AB, AD and AE. This meant that in a most confined space, approximately 420 connector pins had to be reconnected."

The report said that the process of reconnecting 420 connector pins involved "a high risk of errors" and that manufacturer's instructions required that each wire be measured. When maintenance personnel asked the Maintenance Support Department whether they should measure each wire, however, they were told that there was no reason to measure the wires because "the functional test to be performed after completion of the work would reveal wiring errors." At the time, the organization's Standard Practices Manual erroneously said that such decisions should be made at the discretion of the Maintenance Support Department, the report said.

The airplane was taken out of service, and the repairs were begun "without having a maintenance job order, which would have been required according to … procedural regulations," the report said. "The maintenance job order was established on [March 20, 2001], after the [repair work] had already started, indicating a certain carelessness in the realization of the prescribed working procedures."

The report said that maintenance personnel used the "one-to-one" method of replacing the wires so that "the wires were disconnected one after the other from the old plug and immediately connected to the new one." The work was performed by qualified aircraft electronics technicians on the morning shift and on the late shift on March 19. For reference, the electronics technicians used Aircraft Wiring List (AWL) 91-20-33 and the Aircraft Wiring Manual (AWM) 27-92-19.

"The staff members were not sure which page of the Aircraft Wiring Manual was the effective one, as there were two pages which could be applicable for the airplane concerned and which could only be assigned on the basis of the accomplished service bulletins [SBs]," the report said. As a result, they used the wrong page, the report said.

Another complicating factor concerned the wiring between the sidestick plug and the ELAC.

"All pairs of wires consist of a red [wire] and a blue wire which are twisted round each other," the report said. "The twisted pairs are always assigned in an alphanumerical sequence of the plug segment coordinates in the order red/blue, except for the twisted pairs 0603 and 0597, which were — opposite to the normal arrangement — assigned to the pins 3C/3D and 15J/15K in the sequence blue/red."

EASA Organisational Chart (January 2004)

Published 'EASA' Regulations/Directives

The following EC Regulation and Directive have been issued by the Executive Director of EASA:

- **June 13th 2003 – Directive 2003/42/EC – on occurrence reporting in civil aviation**
  NOTE: a reporting system programme CD has been produced.

- **Decision No. 2003/19/RM - 28th November 2003 - on acceptable means of compliance and guidance material to Commission Regulation (EC) No 2042/2003 of November 20th 2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks.**
  NOTE: this concerns JAR 145 (Approved Maintenance Organisations, JAR 66 (Personnel Licensing) and JAR 147 (Training Organisations).

- **Decision No. 2004/01/RM - 9th January 2004 - on the acceptance of design changes and repairs to products designed in the United States of America.**

  Decision text extract

  Wheras:

  (1) Several Member States have concluded bilateral agreements with the United States of America covering the reciprocal acceptance of certification findings, in particular the approval of changes and repairs to products designed in the United States of America.

  (2) The Basic Regulation requires the Agency to issue certificates and to approve changes and repairs thereto, to products subject to that Regulation in accordance with its Article 4 and recognises the possibility for the Agency to rely on foreign States of design regulatory systems to make its decisions.

For full text of these notifications see website www.easa.eu.int

EU Tightens Safety Standards on Foreign Airlines

EU Governments and the European Parliament backed a bill tightening safety standards on foreign airlines, and the European Commission agreed to publish a blacklist of unsafe airlines on its official web site. The moves followed the January 3 crash of Egypt-registered Flash Airlines in the Red Sea that killed 148 people, mostly French tourists, and subsequent revelations that Flash had been banned from Swiss airspace in 2002 due to safety concerns. Under the new law, EU countries will be authorized to carry out spot checks and ground aircraft found to be violating safety rules. Checks will include flight crew licenses, aircraft condition and the presence of mandatory onboard safety equipment, such as life jackets and fire extinguishers. Until now, the country in which the airline is registered has been responsible for carrying out checks. The legislation will cover an enlarged EU of 25 members, as well as non-EU countries Switzerland and Norway, which have transport agreements with the bloc. The Commission also will publish an annual report on airline safety, which currently is confidential and held by the Joint Aviation Authority. IATA criticized the new law, saying all airlines should be subject to comprehensive safety assessments by independent auditiors; all IATA members will have gone through such a process by January 2006.

Article courstsey of Baker and Hostetler LLP Counserllors at Law - Washington Aviation Summary, Feb 2004 Edition

REGULATORY NEWS

DOT Releases Five-Year Strategic Plan

The U.S. Department of Transportation (DOT) released its 2003-2008 Strategic Plan, which aims to reduce fatal commercial accidents to 0.01 per 100,000 departures by 2008, reduce operational errors and runway incursions, and increase airport competition and service to small communities. A new objective, global connectivity, "highlights the importance of using transportation systems to move goods and people around the world, providing Americans improved access to the global economy." The plan sets cost and performance management goals for the Federal Aviation Administration (FAA), and calls for FAA to adjust its Operational Evolution Plan to address the ability of airlines to pay for new technologies, and to balance its use of airport improvement program grants and passenger facility charges to ensure adequate capacity and security. FAA also will develop a new "human capital strategy" to cope with an expected increase in air traffic controller retirements and associated training needs.

Airlines Call For End to "Regulatory Overreach

Heads of nine airline associations issued a call for a more equitable approach by regulators and governments to the industry and greater oversight of monopoly service providers, following a November meeting in Brussels. The Chairman of the meeting, Association of Asia Pacific Airlines (AAPA) Director General Richard Stirland, said "A growing array of regulations threaten the viability of even the most efficient carriers. These regulations all have a cost attached to them, sometimes severe, they are often of dubious benefit to the travelling public, and worst of all, they apply uniquely to aviation, not other modes of transport." There is a lack of consultation with industry prior to directives being issued, said Stirland, "a lack of cost/benefit analysis (and) a lack of transparency in the regulatory process." As for airport and air traffic control costs, said Stirland, "Where those entities have been privatized, profit margins irrespective of market reality are virtually guaranteed; where they are government agencies, gross inefficiencies are masked by high charges and regular increases." Stirland said the group plans increased cooperation to inform the public of the price paid "for regulatory overreach," to demand that governments end "unequal treatment of air transport vis-à-vis other industries," and to insist on "independent regulation of monopolies which provide essential services to the industry."

The above articles are courtsey of Baker and Hostetler LLP Counsellors at Law, Washington Aviation Summary

EASA - European Aviation Safety Agency

Activities of the EASA are getting under way to make the transition from the JAA to the EASA for aviation safety regulation and oversight in Europe. The EASA executive director, Mr Patrick Goudou, started on 1 September, and the Agency was formally active on 28 September 2003. Three of the first four divisional directors were appointed before the end of 2003, and the fourth will be selected in the next few months. There is a 42 month transition period for the Agency to hire all the necessary staff, set up its own internal procedures and ensure that it has the appropriate 'competence' to deal with all relevant aviation safety matters in Europe.

The Agency expects to have 95 staff in place by the end of 2004. Vacancy notices have been posted on the EASA web site, and selection of new staff members is ongoing. A significant number of people are expected to come from the present JAA, and from the other European National Aviation Authorities (NAAs).

Meanwhile the day to day work of an aviation authority is continuing with the contracted assistance of the JAA and the European NAAs. The people involved have all been dealing with the JAA certification and regulatory activities in recent years, and so the appropriate continuity of expertise should be maintained.

The JAA itself is expected to continue in existence as the link with the EASA, for all the present JAA member countries not members of the EU. The EU has 15 members with 10 accession countries due to join this year, while the JAA has 26 full member countries and 11 candidate countries.

IFA members can keep up to date with the evolution of the EASA, and with the promulgation of Implementation Regulations and Certification Specifications, on the EASA web site www.easa.eu.int and on the JAA web site www.jaa.nl. On the JAA web site go to the 'Transition from JAA to EASA' section on the left side index. The EASA web site has a useful 'FAQ' section, and the present EASA organisational chart. Another source of practical information is the FAA web site section on 'EASA Frequently Asked Questions' at www.faa.gov/certification/aircraft/EASA_faq.stm , which covers the needs of the US industry for European certification of their products, and other general aspects.

A good article entitled 'Harmony Rules', in the 27 January – 2 February 2004 issue of 'Flight International', gives the history and present status of the evolution of the EASA.

Andrew McClymont – January 2004

uniform wiring system with uniform colors for all fly-by-wire airplanes. The incident airplane was among the aircraft in a "transition series" in which an interchange of wire colors was acceptable for a specified time period.)

Post-repair Checks Were Insufficient

After the wiring work was completed during the night shift that ended early on March 20, maintenance personnel conducted a functional check. During that check, an error message appeared that involved the no. 1 ELAC. (The error message did not relate to the reported anomaly.) Maintenance personnel identified and corrected a faulty connection of the bridge on the AA plug segment.

A functional check and a control system check were conducted simultaneously by two airplane electronics technicians. The report said that the functional check and the control system check should have been conducted separately.

"The person who had conducted the double inspection and thus was the last to have the chance to find the interchanged connection had not been informed sufficiently about the previous work flow," the report said. "Presumably, it was not known to him that the staff members of the late shift had by direction of the Maintenance Support [Department] not measured the reconnected wires, as actually required."

In addition, the functional check and the control system check were not complete and did not include a visual check of the control surfaces of the airplane.

"The functional check was conducted on the right-hand sidestick only, although the wiring on the left side was affected as well," the report said. "The check was carried out using the Aircraft Maintenance Manual (AMM). The following instruction had to be adhered to: 'Push the FLT CTL ELAC 1 (2) pushbutton switch. Move the sidestick around in its two axes from stop to stop.'"

The report said that when investigators asked why the checks were conducted using the right-hand sidestick, the answer was that the selection of the sidestick "did not matter. … As both ELACs were connected to each other, possible faults of the one or the other ELAC would surely be indicated."

The report said that this answer indicated that the technicians lacked knowledge of the system.

The report said, however, that the manufacturer's instructions were ambiguous about which sidestick should be used in the checks — or whether both should be used.

After additional related checks were conducted, the airplane was released to service.

The report said that several additional errors occurred during checks of the airplane.

"Presumably, the aircraft mechanics … who carried out the checks underestimated the significance of the previous action," the report said. "There is no other explanation for the fact that the cross-checking staff member had conducted the required cross-check using the working documents which [were] aboard the aircraft and [which] had already been used by the staff member having conducted the first check, although according to the regulations, he would have had to use his own impartial documents. Obviously, the importance of the cross-check to this repair had not been realized. In this case, … the independence of the cross-check was the crucial factor."

The flight crew also failed, during their preflight check of the airplane, to observe the anomaly.

"The fact that the malfunction had not been recognized during the flight control check by the crew is due to the fact that the ailerons had only been checked for full deflection, as described in the checklist, but not for the correct direction of deflection," the report said.

The report said that maintenance personnel also erred in incorrectly copying the reference number for the report of the anomaly into the ground logbook and that although the error "was not directly related to the cause of the confusion of the pairs of wires, it indicates that the quality system did not work optimally."

In-flight Incident Led to Changes by Operator, Maintenance Organization

Based on its investigation of the incident, the BFU recommended that the LBA and the operator amend the procedures and checklists for fly-by-wire airplanes "in such a way that during the flight control check, attention is [given] to the correct direction of movement of the ailerons and roll spoilers as recommended by the manufacturer."

The maintenance organization ordered several actions intended to prevent a recurrence of the problem, including the following:

• Instructions were issued to require that functional checks and control system checks on fly-by-wire aircraft be performed using both sidesticks; the Standard Practices Manual and job cards were amended to include that requirement. (The report said that Airbus was requested to "correspondingly amend unclear wordings in the Aircraft Maintenance Manual.");

• Quality assurance procedures and rules for documenting maintenance actions were reviewed and modified, and continuing training was intensified for employees of the maintenance organization;

• Actions were taken to increase the familiarization of new employees with operational procedures and to document the familiarization process; and,

• An anonymous reporting system was established to permit employees of the maintenance organization to "complain about [un]acceptable requirements or technical [conditions] and other conditions without taking a risk of personal disadvantages."

The report said that the maintenance organization's long-term objective was to achieve "a positive change in the attitude to work and working ethics intended to lead to an improved working culture."

Extracts from the UK-CAA SRG Occurence Digest

A320 Incorrect tyre assembly fitted to the No.3 wheel axle.

The aircraft arrived back in the UK after its first revenue flight following hangar maintenance. During the walk round check it was noticed that the wrong tyre assembly was fitted to the nr3 wheel axle. Investigation revealed that the wheel rim part number was correct for the aircraft type and effectivity but a Dunlop cross-ply type tyre was fitted instead of the usual Michelin radial tyre. The profile identification of the Michelin tyre is 46x17 whilst that of the Dunlop tyre is 49x17. The reporter confirms that there was also a fairly visible difference in the diameter of the two wheel assemblies. The subject wheel had been fitted to the aircraft as part of the hangar maintenance check that had been carried out prior to the incident. The wheel had been booked into stores on 16 January as a replacement for another on loan . During the hangar check the paperwork had been cross checked to ensure that the correct part number was being installed, however the part number does not change with regards to the type of tyre fitted to the rim (Airbus specify two types of tyre for this aircraft one slightly larger than the other, and the customer chooses the tyre size as part of the delivery specification). To prevent reoccurrence, the operator has amended the Goods in Receipt procedure to ensure that only wheels with the correct tyre fitted (Michelin 46-17 as opposed to Dunlop 49-17) are permitted into the stores. The contracted maintenance provider has also issued a Safety Publication Notice to highlight this potential problem. See also 200301946. CAA Closure: The hazard is adequately controlled by the actions stated above

Type:B757 Brake unit wear indicator pins incorrectly installed. Appropriate action taken.

While changing the No.7 brake unit, on inspection of the new brake unit to be fitted, it was noticed that neither the forward nor the aft wear pins were connected to the brake thrust plate. Neither restraint pins were fitted and the wear pins were just placed through the rubber grommet on the wear indicator datum plate. Investigation carried out by the brake unit repair facility organisation. The records showed that the clips were issued to the affected brake unit. A review of the clip assembly instructions show that in a case of the pins being incorrectly installed with the ends not being bent out, it is highly likely that the clip would be retained by the clip end. Therefore, it was concluded that at the time of the final assembly the mechanic inadvertently failed to fit the clips, and the final inspector failed to detect this omission. Specific to this incident additional training has been provided to all the brake and applicable inspection staff. CAA Closure: The hazard is adequately controlled by the actions stated above.

Type: BAE146 Aileron out of trim caution. Autopilot disconnected due to aileron control restriction. Precautionary descent. Aircraft

After rain, prior to departure and initial climb in icing conditions, further climb in VMC was accompanied by an 'AIL OUT OF TRIM' caution during turns. At FL270, the condition was still present and the AP was disconnected. Because the aircraft Commander assessed that the control column movement for aileron movement was stiff, a descent was made and an enroute diversion initiated. At FL100, the control response was found to be normal and a climb to FL180 was made with a diversion back to the departure airport. Review with ATSU has disclosed that no emergency was declared, the diversion being requested for operational reasons. Engineering subsequently found de-icing residue beneath panel 533B between center and inner hinge of the LH aileron. De-ice residue removed, Aileron cables were checked and trim actuators lubricated. AP roll servo P/N 11 ORAA-2 was replaced and aircraft released to service following a satisfactory flight handling check. Flight Operations Review intends no general safety response action. Engineering Review concluded the possibility of ice contamination could not be discounted and noted an all fleets review of inspection requirements following application of Type II and type IV de-ice fluids underway. Note 99/03/146, a similar event on this aircraft forty-four days later. For general actions arising / review, see 126/03/146 (MOR 200302614). See also 200302368. CAA Closure: The hazard is adequately controlled by the actions stated above

Type: A300 No.6 mainwheel tie bolt failure - tyre deflated during taxi in.

After landing following a medical diversion, No.6 tyre low pressure indication was displayed on ECAM and tyre pressure gradually reduced to zero. Following shutdown, wheel inspection found nr6 tyre deflated with 3 tie bolts missing and a further 2 tie bolts only finger tight. R/W and taxiway inspected for parts - none found. No.6 mainwheel assembly (p/n C20211170) and brake unit replaced. No.5 mainwheel also replaced. Component manufacturer (Messier Bugatti) procedures revised. Technical Notice 407 issued to include particular attention to the mainwheel tie bolts during daily inspection and a weekly physical check of each mainwheel to ensure that tie bolts cannot be rotated by hand. The manufacturers initial investigation into a previous occurrence confirmed that the tie bolts are subjected to cyclic fatigue as a result of under torqueing, the fatigue then accelerates at a rapid rate until failure occurs under the bolt head. The reporter states that the combination of this and the poor nut breakaway torque figures obtained during this wheel strip down could also translate to these stiff nuts loosening during service thereby causing an under torque condition. Thereby a decision was made to replace all the main wheel tie bolts and stiff nuts at the next shop visit of each wheel.

Type: A320 LH and RH overwing exit slides disarmed. Aircraft returned to stand. Maintenance error.

During taxi out, no 'Slide Armed' indication was displayed on ECAM from the LH and RH overwing exits. Subsequent inspection revealed that all 4 overwing exits were in the disarmed position. Exits re-armed and system checked satisfactorily. The reporter confirms that the aircraft had recently been ferried empty after hangar maintenance at another base. The Contracted Maintenance Organisation involved has carried out a MEDA investigation on this incident the conclusions of which were that the personnel involved in the actual rearming of the overwing slides did not follow the Aircraft Maintenance Manual and failed to carry out all the steps required to arm the system. The two technicians who carried out the initial and duplicate inspections also failed to identify the omission. The CMO has retrained the individuals involved and has highlighted the incident in the company's maintenance safety news sheet to prevent reoccurrence. The investigation failed to highlight how the crew operating the ferry flight from MAN failed to notice the ECAM indication on the ferry sector to LGW. See also 200302017. CAA Closure: The hazard is acceptable provided the frequency remains low.

Type: B737 Incorrect adjustment of elevator tabs due to ambiguity of the instructions in the Aircraft Maintenance Manual (AMM).

During flight test following embodiment of SB 737-55A1080, a 10 deg nose-up pitch deviation resulted from the elevator power off test stated in AMM 27-31-00. Hydraulic power was immediately re-selected to maintain control of the aircraft. Subsequent inspection of the elevator tabs revealed that the adjustment had not been set to the dimensions required in the AMM, but has been adjusted to a setting opposite of that required. The tab settings were re-adjusted and further flight tests satisfactorily, carried out. A review of the AMM by the reporter established that potential for misinterpretation and confusion exists with regard to tab adjustment due to conflict between the written instructions and the diagram shown in figure 509. The aircraft manufacture rand aircraft operator were both advised. Additional procedures instituted by the reporter to require the initial readings and settings to be recorded prior to disassembly of any flight control or critical system for adjustments. Safety and Quality Briefing! Note BAS/SQBN/2003/01 issued to all production personnel. A review of AMM 27-31-00 by the maintenance organisation established that potential for misinterpretation existed due to a conflict between the written instructions and the diagram given in 27-31-00 fig 509. The engineer involved in the incident believed that the required dimension had been achieved during final adjustments as required by the AMM. In the short term, action taken to prevent a recurrence included informing the aircraft manufacturer of the incident, revised procedures for the recording of flight control system adjustments and the circulation of Safety & Quality Briefing note to all staff to highlight the occurrence. As a final closure of this occurrence the maintenance organisation have advised that the diagram detailed in Boeing 737 AMM 27-31-00, figure 509, revision Jun 10/03, has been extensively revised to unambiguously detail the adjustment of the elevator tabs. CAA Closure: Hazard adequately controlled by the actions stated above.

Type:B767 RH Engine Driven Pump (EDP) failure due to overheating. Case drain hose check valve incorrectly installed/ seized.

EICAS message "R ENG HYD PRESS" was displayed during taxi, therefore the RH EDP was switched off and the aircraft returned to stand. Subsequent investigation revealed that the RH EDP had failed and the RH hydraulic system was contaminated. A filter inspection showed that the case drain filter element and bowl were dry. The case drain hose check valve (p/n 0121520900-13A) was then found to be installed incorrectly, resulting in the pump operating without a coolant flow. During removal the valve was also found to be seized internally. The reporter confirms that this is the third failure in this position within 15 days and that the previous failure had also been due to overheating. Total aircraft/component hours/cycles 14348/2684. Manufacturer advised. The first pump failure was deemed to be "genuine", and it is likely that the case drain check valve was fitted incorrectly during this replacement. This caused the second failure and as the AMM procedure for pump replacement does not involve disturbing the check valve, the third pump was fitted which also eventually failed. The maintenance error investigation could not identify how the maintenance error occurred, in spite of interviewing all personnel involved and it is anticipated that the publication of the Maintenance Error Report will bring the consequences of this error to all engineering personnel and preclude this happening again. CAA Closure: The Hazard is adequately controlled by existing requirements, procedures and documentation