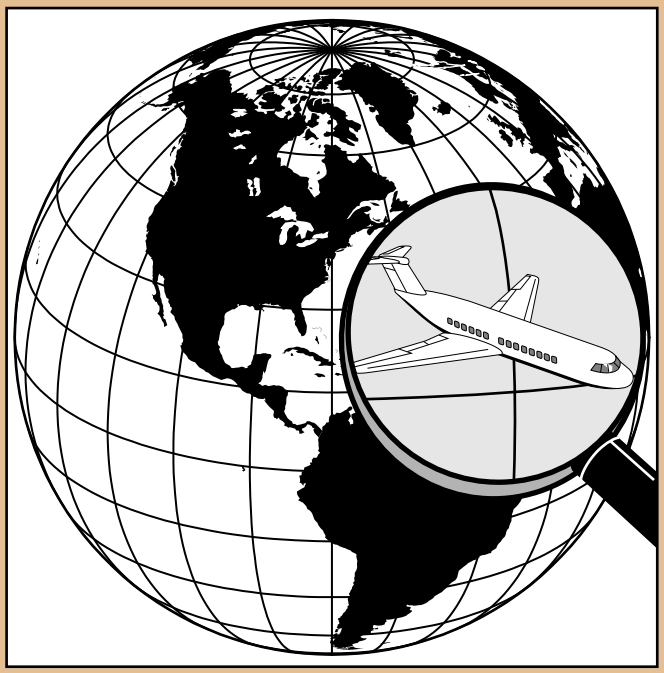
FLIGHT SAFETY FOUNDATION
Aviation Mechanics Bulletin
MARCH–APRIL 1996

U.S. FAA Assesses Non-U.S. Civil Aviation Authority Safety Oversight Capability



FLIGHT SAFETY FOUNDATION

Aviation Mechanics Bulletin

Dedicated to the aviation mechanic whose knowledge, craftsmanship and integrity form the core of air safety.

Robert A. Feeler, editorial coordinator

March–April 1996 **Vol. 44 No. 2**

Staff: Roger Rozelle, director of publications; Girard Steichen, assistant director of publications; Rick Darby, senior editor; Karen K. Ehrlich, production coordinator; and Kathryn Ramage, librarian, Jerry Lederer Aviation Safety Library.

Subscriptions: US$35 (U.S.-Canada-Mexico), US$40 Air Mail (all other countries), six issues yearly. • Include old and new addresses when requesting address change. • Flight Safety Foundation, 601 Madison Street, Suite 300, Alexandria, VA 22314 U.S. • Telephone: (703) 739-6700 • Fax: (703) 739-6708

U.S. FAA Assesses Non-U.S. Civil Aviation Authority Safety Oversight Capability

—

Bart J. Crotty
FSF Director of Aviation Safety Services

The U.S. Federal Aviation Administration (FAA) is responsible for the safety regulation of non-U.S. air carriers operating in the United States under U.S. Federal Aviation Regulations (FARs) Part 129, *Operations: Foreign Air Carriers and Foreign Operators of U.S. Registered Aircraft Engaged in Common Carriage*.

Until 1991, the FAA's primary role in connection with Part 129 had been to certificate non-U.S. air carriers, largely on an administrative basis, while relying to a considerable extent on the air carriers' national civil aviation authorities (NCAAs) to ensure the carriers' compliance with their country's International Civil Aviation Organization (ICAO) obligations. But a number of accidents and violations of the FARs, by non-U.S. carriers operating in the United States, convinced the FAA that a more fundamental and efficient method of scrutinizing Part 129 air carrier operations was needed.

Under the International Aviation Safety Assessment (IASA) program, the FAA is now thoroughly reassessing or assessing the capability of each non-U.S. air carrier's NCAA to properly oversee the safe operation of its international airlines, according to the country's obligations as a member of ICAO.

About 600 non-U.S. air carriers from more than 100 countries operate

scheduled and unscheduled, passenger and/or cargo flights to and from the United States. (The large number of carriers includes many air-taxi operators based in Mexico and Canada.) To obtain authorization for their U.S. operations, these carriers must first obtain approval by the U.S. Department of Transportation, on economic grounds. The U.S. Department of State has the option to object on political grounds. If there are no impediments from those departments, FAA certification under Part 129 follows.

Membership in ICAO carries the obligation to ensure that the member nation's international air carriers meet the requirements and standards of the ICAO Annexes and standards, particularly Annexes 1 (*Personnel Licensing*), 6 (*Operation of Aircraft*), 8 (*Airworthiness of Aircraft*), 13 (*Aircraft Accident and Incident Investigation*), 17 (*Security*) and 18 (*The Safe Transport of Dangerous Goods by Air*), and various ICAO guidance manuals, e.g., Doc-8335, *Procedures for Operations Certification and Inspection,* and Doc-9642, *Continuing Airworthiness*. But ICAO, with 184 member countries, has neither the mandate nor the resources to accomplish surveillance or enforcement of an ICAO-member country's safety oversight of that country's international airlines' operations.

The United States attempts to ensure that at least the non-U.S. airlines that fly within U.S. airspace observe ICAO standards, as well as applicable sections of the FARs Part 91, *General Operating and Flight Rules*. Part 129 specifies that non-U.S. air carriers operating within the United States must adhere to ICAO Annex 6 as well as other regulations contained in Part 129. An FAA Advisory Circular, 129-3, *Foreign Air Carrier Security*, amplifies the Part 129 requirement for non-U.S. carriers to maintain a security program to guard against explosive- or weapon-carrying passengers, and it also specifies procedures to counteract bomb and air piracy threats.

The FAA has no need to assess some countries' NCAAs, because the FAA is satisfied with those NCAAs after having worked with them on many joint programs and areas of mutual interest. The 18 full-member countries of the European Joint Aviation Authorities are likewise recognized by the FAA as complying with the requirements and standards of the ICAO Annexes.

Specially trained teams of FAA inspectors visit other NCAAs that oversee their countries' international airlines, including any Part 129-approved air carriers, as well as the relevant NCAAs when an initial Part 129 air-carrier approval is requested. (In both situations, such visits are agreed to and arranged by the U.S. government and that of the NCAA.) When making NCAA visits, the

FAA usually also surveys the appropriate international air carrier.

Before the FAA visit, the NCAA is requested to complete an FAA questionnaire describing how the NCAA's ICAO obligations are being met. An FAA team, comprising at least an airworthiness inspector and a flight operations inspector, visits the NCAA for three days to five days. For larger NCAAs, the field team includes an FAA legal counselor.

The assessment concentrates on ICAO Annexes 1, 6 and 8, and addresses the adequacy of the NCAA's:

- National aviation laws, establishing the NCAA and empowering it to create and enforce safety regulations, policies and procedures;
- Organizational structure and qualified safety inspector staffing;
- Safety regulations;
- Personnel licensing systems; and,
- Certification of air carriers, including written procedures and inspection forms, administration systems, technical data and manuals, training and capability of inspectors, monitoring and surveillance programs and airworthiness-defect reporting system.

Verifying that established written requirements and procedures for certification have been met, and verifying that continuing surveillance of its international air carriers is being accomplished, are the most important aspects of the assessment. Inspectors determine whether the NCAA's oversight functions as reported, as well as whether it meets the intent of the ICAO Annexes and Doc-8335. The records of the NCAA's past certifications and its continued surveillance of certificated air carriers are reviewed.

The FAA presents its findings to the NCAA and the U.S. embassy, informing them of any shortcomings found during the assessment. After the inspection team returns to the United States, a formal written report is transmitted to the NCAA through its country's U.S. embassy.

The FAA issues the official results from its Washington, D.C., headquarters by assigning the NCAA a category:

- **Category I.** Acceptable. The NCAA fully meets ICAO oversight requirements.
- **Category IA.** The NCAA meets the ICAO oversight requirements concerning flights to and from the U.S., but not the requirements for international flights of its certificated airlines to other countries.

- **Category II.** Conditional, meaning marginal. The FAA usually gives the NCAA 120 days to make specific improvements. FAA inspections of the NCAA's air carriers operating in the U.S. are increased. The FAA freezes the air carrier's scope of operations if it already holds a Part 129 approval, or withholds an initial Part 129 approval, until necessary improvements are made.

- **Category III.** Unacceptable, meaning that the NCAA does not meet most ICAO requirements. The FAA immediately withdraws current Part 129 approval or denies an initial application for Part 129 approval.

Allen Li, an official of the U.S. General Accounting Office, testifying to a U.S. Congressional subcommittee in October 1994, reported that the FAA had assessed 30 countries' NCAAs and had determined that 17 met international standards (Category I), had given conditional ratings (Category II) to four NCAAs and had found that nine NCAAs did not meet international standards (Category III). "In countries that did not meet the standards," Li said, "[the] FAA found such deficiencies as the following: no operations or airworthiness inspectors; no aviation regulations, handbooks or guidance; no technical expertise to carry out a surveillance program; and a lack of annual proficiency checks for pilots and crew."[1]

By early May 1996, approximately 80 percent of NCAAs overseeing the safety of international airlines with Part 129 operations had been assessed by the IASA program. The target is to reach 100 percent by the end of 1996. About half of the NCAAs have received a Category I rating, and the other half were either not in full compliance (Category II), or very far from compliance (Category III). Seven NCAAs have been downgraded from Category I to Category II as a result of reassessments since 1994. Table 1 (page 5) shows the status of some NCAAs assessed by the FAA.

The FAA has just completed its first joint assessment of an NCAA, with Russia. (The results have not yet been announced.) Another joint assessment, with the People's Republic of China, is scheduled to begin in July. Under such agreements, personnel from the other country participate in the assessment, but the FAA continues to assign the category.

Even if an existing Part 129 air carrier or new applicant fully meets Part 129 requirements and is deemed to be a safe international air carrier, the FAA's continuing or new approval of the air carrier is contingent on the NCAA's ability to adequately

Table 1
FAA International Aviation Safety Assessment (IASA) Program NCAA Ratings

Country	Category	Country	Category
Argentina	I	Netherlands Antilles: Curaçao, St. Martin, Bonaire, Saba, St. Eustatius	I
Aruba	II	New Zealand	I
Australia	I	Nicaragua*	III
Bahamas	I	Oman	I
Bangladesh	I	Organization of Eastern Caribbean States (OECS): Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St. Lucia, St. Vincent and The Grenadines, St. Kitts and Nevis	IA
Belize*	III	Panama	I
Bolivia	II	Paraguay*	III
Brazil	I	Peru	II
Bulgaria	I	Philippines	II
Chile	I	Poland	II
Colombia	II	Romania	I
Costa Rica	I	South Africa	I
Czech Republic	I	Suriname	III
Dominican Republic*	III	Swaziland*	III
Ecuador	II	Trinidad & Tobago	II
El Salvador	I	Turkey	II
Fiji	I	Ukraine	I
Gambia*	III	Uruguay*	III
Ghana*	III	Uzbekistan	I
Guatemala	II	Venezuela	II
Guyana	IA	Western Samoa	I
Haiti	III	Zaire*	III
Honduras*	III	Zimbabwe*	III
Hungary	I		
Israel	I		
Jamaica	II		
Jordan	I		
Kiribati*	III		
Marshall Islands	IA		
Mexico	I		
Morocco	II		
Nauru	I		

* No current operators FAA = U.S. Federal Aviation Administration
NCAA = National civil aviation authority

Source: U.S. Federal Aviation Administration

oversee its international air carriers according to ICAO requirements.

Because of recent and expected FAA operating budget reductions and limited staffing, reassessments of NCAAs, or inspections of new Part 129 applicants, are likely to require several months before the FAA can respond. Such international work is a lower priority than work involving U.S. certificated air carriers and other domestic civil aviation safety tasks.

NCAAs facing an FAA assessment should be thoroughly prepared and avoid the risk of being stigmatized with a rating of less than Category I.

ICAO has received 29 inquiries from member countries seeking an assessment of their NCAA safety oversight capability (shaded box).

Countries Requesting a Safety Oversight Assessment by an ICAO Team

Armenia, Belize, Colombia, Cypus, Djibouti, Ethiopia, Gambia, Ghana, Guyana, Honduras, Jordan, Kazakhstan, Kuwait, Lithuania, Maldives, Mauritius, Micronesia, Mongolia, Morocco, Namibia, Nicaragua, Pakistan, Slovakia, Suriname, Thailand, Tunisia, Uganda, Uzbekistan and Yemen.

Source: International Civil Aviation Organization

Most of these requests are from developing countries and have gone unfulfilled because financial resources are unavailable either from ICAO or from the concerned countries.

ICAO is considering establishing regional teams of technical experts funded by groups of countries that would share the cost of receiving periodic safety oversight assistance.

ICAO has had some success in obtaining grants from member countries for NCAA safety oversight assistance. Bolivia, Canada, Colombia, Finland, Netherlands, Maldives, Mauritius, Thailand and the United States have offered funds to finance safety oversight programs.

Promises of short-term assignments of flight safety inspectors for field assistance have been received from Australia, Canada, Denmark, Netherlands, Norway, Sweden, the United Kingdom and the United States. Other countries have offered to make expert help available, provided that the assistance is funded through ICAO.

After the FAA has assessed all the relevant NCAAs at least once, it plans to reduce its effort, hoping that ICAO's growing involvement will bring the problem of unsafe international airlines under control.♦

References

1. U.S. General Accounting Office. *FAA's Effort to Improve Oversight of Foreign Carriers*. Statement by Allen Li, Associate Director, Transportation Issues. Document no. GAO/T-RCED-95-33.

About the Author

Bart J. Crotty is director of Aviation Safety Services at Flight Safety Foundation, as well as an independent airworthiness and maintenance consultant. Formerly a U.S. Federal Aviation Administration (FAA) airworthiness inspector and trainer, he is currently a designated airworthiness representative (DAR). Crotty has worked for repair stations, airlines, an aircraft manufacturer and several non-U.S. NCAAs. His career spans 35 years, approximately half of it in non-U.S. locations. He holds an airframe and powerplant (A&P) certificate and has a bachelor of science degree in aeronautical engineering.

NEWS & TIPS

Analysis System Helps Evaluate Work Site Risks

Ergodyne® offers a Progressive Analysis System (PAS) that is intended to provide a comprehensive ergonomic evaluation and work site analysis that enables managers to identify and control risk factors. The PAS is said to allow companies to begin an ergonomics program at a level suitable to their individual needs. The PAS includes four levels:

- **Level One: Musculoskeletal Risk Factors Survey** — For companies with little or no previous exposure to ergonomic analysis. The one-page survey helps to identify potential musculoskeletal risk factors established by proposed U.S. Occupational Safety and Health Administration (OSHA) standards. Users can assess the severity and influence of risk factors and develop remedial action.

- **Level Two: Workplace Ergonomics Profile** — For companies that already know that risk factors exist. Each profile provides information to help the user identify risk factors

and body parts affected, set priorities and offer initial control measures. The profiles are presented in a checklist format.

- **Level Three: Comprehensive Ergonomics Safety Program** — Educates users to develop, write and implement a program that meets the proposed OSHA ergonomics standards. It includes video-based educational and training programs geared toward supervisors, and written materials are provided to supplement the training.

- **Level Four: Total System for Ergonomic Evaluation** — Helps companies evaluate jobs, injuries to workers and proposed designs for equipment or procedures to reduce risk of injury. The program includes graphics and rating scales that identify risk factors and rate the severity of awkward positions or activities, based on duration of the job, body angle and the environment.

Ergodyne also offers a line of video-based worker-safety education programs. For more information, contact: Ergodyne, 1410 Energy Park Drive, Suite One, St. Paul, MN 55108 U.S. Telephone: (800) 225-8238 (United States and Canada), (612) 642-9889; Fax: (612) 642-1882.

Embry-Riddle Offers Continuing Education Programs for Technicians

Embry-Riddle Aeronautical University (ERAU) has announced its 1996 schedule of continuing education courses for aviation maintenance technicians. The ERAU educational network includes residential campuses in Daytona Beach, Florida, U.S., and Prescott, Arizona, U.S.; 115 career education centers in the United States and Europe; and its independent studies program.

In addition to the following scheduled courses at the Daytona Beach campus, courses can be designed to meet specific client's needs.

- **Eddy-current Nondestructive Testing (NDT)** — A five-day course designed primarily for aircraft inspection, overhaul agencies, service organizations and manufacturers. The course covers all theoretical aspects, principles and application skills of NDT, and includes experience using state-of-the-art equipment. The course is scheduled for July 22–26.

- **Dynamic Balancing** — A two-day course specializing in

dynamic balancing techniques and skills applicable to helicopters, propellers and drive shafts. Participants are encouraged to fly their own aircraft or helicopter to the school to learn the balancing processes on their own equipment. This course is scheduled for June 18–19, Sept. 24–25 and Nov. 19–20.

- **Aircraft Composite Structures: Fabrication and Repair** — This five-day basic course will instruct technicians in aircraft construction and repair of composite materials. No prior knowledge of composites is required. The course combines classroom instruction and shop projects with experience in composite repair techniques. Courses are scheduled for July 8–12 and Aug. 19–23.

For more information, contact ERAU at (800) 359-4550 (United States and Canada); (904) 226-6186; Fax: (904) 226-7630.♦

MAINTENANCE ALERTS

Faulty Fuel-quantity Indicating System Results in Fatal Crash

In early 1994, a Fairchild [Swearingen] SA-26AT, Merlin IIB twin-engine turboprop crashed while attempting to land at Winchester, Virginia, U.S. The pilot, the sole occupant of the airplane, was killed. The flight had departed Dulles International Airport, near Washington, D.C., for the short flight to Winchester, and the pilot had reported that he had the Winchester airport in sight. A witness on the ground heard the pilot's radio transmission reporting that he was on final approach. The airplane crashed 250 feet (76 meters) short and slightly to the left of the runway.

The investigation revealed that the left-wing fuel tank was empty, and only minimal fuel remained in the right-wing tank. Investigators concluded that the left engine had lost power on final approach because of fuel starvation. [Fuel was exhausted from the left-wing tank.]

A copilot from the previous flight, who had deplaned just prior to the accident flight, indicated that there had been discrepancies with the airplane's fuel-quantity indicating

system for some time. He described the fuel-quantity readings for both tanks as "erratic," with readings for the left side being more inaccurate than for the right side. He also said that both he and the accident pilot believed that the right tank indicator typically read higher than the left, even when the fuel load was equal. Testing after the accident revealed that the fuel-quantity indicating system for the right tank overstated the amount of fuel remaining.

The fuel-quantity indicating system for the SA-26AT uses four float-type transmitters in each wing, and the electrical resistance varies with the position of the floats. An adjustable potentiometer is used to calibrate the system with the four transmitters connected in series to form one circuit. The maintenance manual calls for the tanks to be defueled and the potentiometer adjusted to correct the indication to zero gallons. The manufacturer's maintenance program does not require periodic recalibration, and the maintenance records for the accident aircraft had no entries to indicate that the transmitters had ever been replaced or that the system had ever been recalibrated.

Postaccident testing confirmed that the resistance of the transmitters had increased significantly above the specified values. Oxidation and discoloration were found when the transmitters were disassembled. The increased resistance caused the fuel-quantity indicator to overstate the amount of fuel remaining. Without periodic recalibration, this type of error increases as the transmitters age. On the accident airplane, the cumulative error was sufficient to cause an error of (+) 41 U.S. gallons.

A search of the U.S. National Transportation Safety Board (NTSB) accident data base revealed that between 1988 and 1994, there were 15 fuel-starvation accidents in which unreliable fuel-quantity indicating systems were determined to be a factor. The airplanes involved included models by Cessna, Beech and Piper, in addition to the SA-26AT. As a result of these findings, the NTSB has issued safety recommendations calling for the FAA to:

- Issue an airworthiness directive (AD) to require periodic recalibration of the fuel-quantity indicating system on all Fairchild SA-26 series airplanes; and,

- Identify other general aviation aircraft that use float-type transmitters in their fuel-quantity indicating systems and that do not specify a requirement for periodic recalibration in their maintenance manuals, and then issue an AD to require periodic recalibration of these systems.

F-100 Wing Anti-ice System Malfunction Traced to Vertical Stabilizer

A Fokker F-100 operated by a U.S. airline experienced a series of wing anti-ice low-capacity faults during cruise. Technicians in the field replaced the wing anti-ice valve, the high-pressure temperature modulating and shutoff valve (TMSOV) and the TMSOV thermostat on several occasions. In addition, all of the wing leading-edge peri-seal couplings were replaced because of suspected leakage, and the low-capacity switch was replaced once.

The aircraft continued to exhibit low pneumatic-duct pressure, using one or both engine supplies during cruise at high altitudes. Unable to correct the problem at line stations, the operator eventually had the aircraft ferried to a major maintenance facility for analysis and repair.

The problem was traced to a leaking air swivel fitting at the top of the vertical stabilizer. The clue that led to this discovery was that the tail anti-ice temperatures were lower than normal in flight. Even though the wing anti-ice system exhibited the faults most of the time, combined leaks from other areas of the anti-icing system were the primary cause of the problem.

Too-tight Clamp Forces A-300 To Make Overweight Landing

An Airbus A-300 had to turn back when the flight crew experienced a throttle binding, causing inability to reduce power after takeoff. The problem resulted in an engine shutdown and a single-engine overweight landing. The aircraft landed safely, but the brakes overheated and two tires were deflated. The aircraft was out of service for 54 hours because of the damage and required replacement of four tires, a throttle cable and engine wire harnesses.

The cause was a failure of a main pneumatic supply duct clamp that had been overtorqued. The clamp failure led to high-pressure and high-temperature pneumatic air impinging on the throttle-cable housing and engine wire harnesses, causing severe damage to both.

Duct clamps have a specific torque value, which is usually stamped on the clamp. More (torque) is not better.

FAA Issues Alert Notice on Allison 250 Series Powerplants

The U.S. Federal Aviation Administration (FAA) has issued the following alert notice concerning bearing

failures on the Allison 250 series of small turbine engines:

"It has been reported that the No. 5 and No. 8 bearings (P/Ns A6871505 and A23007152, respectively) are suffering premature failures. The suspect bearings were produced by Superior Turbines under their PMA [Parts Manufacturing Authority]. The reports indicate that failures may occur that are not detectable by the 'chip detector' system. Superior Turbines has issued Information Bulletin 95-IB001, which recommends [that] engines with these bearings installed have an oil filter inspection within the next 25 hours of operation. Also, Service Bulletins (SBs) T95-SB001 and T95-SB002 dealing with this subject were issued. These SBs recommend increasing the oil filter inspection interval from 25 hours to 100 hours. The FAA has no data that would support this increase, and recommends maintaining the 25-hour inspection interval. A helicopter operator recently reported the failure of a No. 5 bearing after only 95 hours of operation.

"Silver flakes found in the engine main oil filter and the Nicad filter, if installed, are an indication of impending bearing failure. The flakes are normally one [millimeter] to two millimeters [0.039 inch to 0.078 inch] in size and appear flat. For specific bearing serial numbers affected, consult the SBs previously mentioned."

Bird Nests Are Spring Hazard

The coming of warmer weather in the northern hemisphere brings with it the hazards of birds nesting in and around aircraft. Preflight procedures must be reinforced to ensure that birds have not infiltrated an aircraft while it has been parked.

Even a routine overnight layover provides adequate time for birds to set up housekeeping in out-of-the-way places. One operator of large airliners reported finding a substantially completed nest of twigs and sticks in the exhaust of the auxiliary power unit (APU). Fortunately, a sharp-eyed tug driver saw birds going in and out of the area and called it to the attention of the technician, who investigated. Although the nest would likely have been expelled when the APU was started, a twig or stick might have been lodged between the turbine blades and stators and could have caused substantial damage on startup.

Extra caution should be taken when performing preflight checks during the coming months. Any bird droppings, straws, twigs or strings in a crevice or opening of an aircraft should be cause for closer examination. Every air intake, scoop or ventilation opening offers an inviting spot for a nesting bird.♦

Turbine Compressor-Blade Washing System Goes to the Job Site

Performing the required compressor-blade washing operations at the recommended intervals is sometimes a problem when helicopters are assigned to remote job sites. With the introduction of its Heli Tech 300 system, Heli Tech says that it has solved that problem, because its system is small enough to be transported aboard the helicopter.

According to the manufacturer, the Model 300 features wash-tank agitation for proper additive mixing, and flow controls for the wash and rinse cycles. Delivery-pressure and function-selection valves are located on an easily accessible control panel. Hoses and the control panel are said to be protected by a stainless steel lid during transport and storage. Heli Tech says that the system has been added to the Service Approved Tool Line for Pratt & Whitney engines.

For more information, contact: Heli Tech, 4681 Isabelle Street, Eugene, OR 97402 U.S. Telephone: (503) 344-2304; Fax: (503) 344-3863.

Battery-operated UV Lamp Provides Greater Illumination

Novalite™ AB of Sweden has introduced a hand-held, battery-operated, high-intensity ultraviolet (UV) lamp. Designed for use in nondestructive testing applications where fluorescent powders or dyes are used to enhance defect visibility, the Novalite UV270 is claimed to provide 10 times to 20 times higher UV light intensity than other lamps. The manufacturer says that this unit gives an irradiance of 10,000 microwatts per square centimeter, compared with only 900 microwatts per square centimeter for a traditional 100-watt UV lamp. This very high UV light intensity is said to offer a working range more than four times that offered by other lamps.

The unit uses a 35-watt, long-life discharge source backed by a 13.5-centimeter (5.3-inch) parabolic reflector and reaches full power within 10 seconds. The lamp is portable, and powered by a standard 12-volt rechargeable battery capable of 45 minutes of continuous operation. It can also be powered from standard 115- or 230-volt shop sources for use at stationary inspection stations.

Novalite UV270

According to the manufacturer, the intensity of UV light provided by this unit means that fluorescent materials can be seen clearly in daylight or under normal electric lighting, eliminating the need for darkroom facilities. For portability and ease of handling, the unit is housed in an aluminum case with an oil-resistant rubber case protecting the lamp holder. The whole unit, including the battery, weighs less than 5.6 kilograms (12.5 pounds) and is supplied with a shoulder strap and carrying handle.

For more information, contact: Novalite AB, Yrkesvägen 5, S-904-20 Umeå, Sweden. Telephone: +46 90 13 81 20; Fax: +46 90 12 01 81.

Hazardous-waste Absorbent Can Be Reused

McPhee Supply Co. has introduced a hazardous-waste absorbent that is said to assimilate 60 times its weight in liquids. The product, called Safe Harbor, is lightweight, biodegradable and environmentally safe. The manufacturer says that it has been certified by the U.S. Environmental Protection Agency, U.S. Occupational Safety & Health Administration, American Public Health Association and the U.S. Department of Labor to be nontoxic to humans, animals and marine life.

Safe Harbor is a patented, lightweight cellular material composed of aminoplast resin (water, carbon and nitrogen). The web of microscopic cells is interspersed with capillary tubes that absorb and encapsulate the unwanted waste material. The manufacturer says that the product retains fluids more effectively than conventional absorbents because it is composed mainly of air cells. Fully dried, the product weighs only one pound per cubic foot, and it can be compressed to less than 1/30 of its original volume, thus reducing shipping and disposal costs.

McPhee says that Safe Harbor outperforms conventional absorbent products such as clay, corn cob, cellulose, cork paper, peat and polypropylene. The material is noncombustible and easy to spread over large areas. In addition, it floats on water while absorbing wastes. Another advantage claimed by the manufacturer is that the material can be compressed to allow recapture of absorbed liquids and can, therefore, be used repeatedly. It is available as

loose particles or in a variety of configured designs to contain or prevent spills.

For more information, contact: McPhee Supply Company, 10807 North Cave Creek Road, Phoenix, AZ 85020 U.S. Telephone: (602) 943-9565; Fax: 944-6559.

Auto-darkening Lens Featured in Special Helmet

Hornell Speedglas® Inc. has introduced a lightweight auto-darkening welder's protective helmet with an extra-large viewing lens.

With the helmet in place, the 55-millimeter x 107-millimeter (2.1-inch x 4.2-inch) auto-darkening lens is said to allow the welder to precisely align the electrodes with the workpiece before striking an arc. The helmet is constructed from Zytel nylon and weighs only 510 grams (18 ounces) including lens and ratchet-adjusting headband. The light weight reportedly enables users to work without subjecting themselves to dangerous arc flashes, in positions that would previously have been difficult or impossible.

The lenses are available in four shading levels for any arc-welding process. All lenses darken the moment an arc is struck and then become transparent when welding stops. According to the manufacturer, the Speedglas XL lens meets all American National Standards Institute (ANSI), Canadian Standards Association (CSA) and European Community (CE) standards for eye and face protection.

For more information, contact: Hornell Speedglas Inc., 2374 Edison Boulevard, Twinsburg, OH 44087 U.S. Telephone: (800) 628-9218 (United States and Canada); Fax: (216) 425-4576.

Digital Radiography Processing and Storage Media Introduced

Radiography (X-ray inspection) techniques have been widely used in the aviation industry. Conventional radiography uses film to record and display an image, but the processing, handling and storage of these films has always been a major part of the process. Liberty Technologies Inc. has introduced a new line of radiography products called RADView™, which is based on a patented phosphor digitizer and phosphor screens. This filmless technology uses digital radiographic imaging.

Among the products introduced at the recent American Society for Nondestructive Testing (ASNT) Quality Testing Show were:

- **RADView Workstation and Software** — A system that digitally processes, analyzes, displays and manages radiographic images;

- **RADView Film Digitizer** — A unit that converts existing film and associated records to a digital format for image and information management; and,

- **RADview Phosphor Digitizer and Phosphor Screens** — A system that replaces film and film processing with a reusable media and optical reader. The process is said to require a lower exposure dose and exhibit greater latitude than conventional film.

According to the manufacturer, this new technology is safer for the environment and generally less tedious than film-based radiography. The system software is said to be easy to learn.

For more information, contact: Liberty Technologies Inc., Lee Park, 555 North Lane, Conshohocken, PA 19428-2208 U.S. Telephone: (610) 834-0330; Fax: (610) 834-0346.

Tool to Clean Seat Tracks Introduced

Maintaining adjustable cockpit seats, or passenger seating secured in notched tracks, requires removing the dirt and grit that has become embedded in the tracks. Rex-Cut® Products Inc. has introduced a line of specially designed thin-profile mounted wheels to accomplish this job efficiently and safely.

The company's Mounted Seat Track Cleaners feature multiple layers of reinforced nonwoven cotton fiber and abrasive grains, pressed and bonded into discs that, when mounted on a turning wheel, can fit inside the seat tracks. Designed for cleaning all interior surfaces of the track without having to change discs, one disc is said to be able to remove caked-on sludge, dirt and grit while also removing minor burrs or rough edges that restrict seat travel.

For more information, contact: Rex-Cut Products Inc., 960 Airport Road, P.O. Box 2109, Fall River, MA 02722 U.S. Telephone: (800) 225-8182 (United States and Canada); Fax: (800) 638-8501 (United States and Canada).♦

BLANK
INSIDE
BACK
COVER

Flight Safety Foundation

49th annual International Air Safety Seminar (IASS)

International Federation of Airworthiness

26th International Conference

International Air Transport Association

present the

"Best Practices and Processes for Safety"

November 11–14, 1996
Dubai, United Arab Emirates

For more information contact J. Edward Peery, FSF.
Telephone: (703) 739-6700 Fax: (703) 739-6708