

Intercom

A Newsletter of the FAA's William J. Hughes Technical Center

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Shaping aviation's future -
Creating possibilities
and Providing
integrated solutions

Farewell from the Editor

Almost four years ago, I agreed to produce *Intercom* "temporarily" until an in-house editor could be found. Over the past year, ACT has brought several writers on board and its now time for *Intercom* to transition to a new team. Starting with the February issue, **Norris Hite, Jr.** (ACH) will be taking over as editor.

I want to thank the Tech Center family for giving me the opportunity to be part of your lives. I also want to thank our readers, contributors, and supporters. When I produced my first issue of *Intercom* in November 1998, I admit, I was a little hesitant, not exactly sure how to even begin. It's been a tremendous learning experience, sometimes fun, sometimes frustrating, but always worth the effort.

Intercom has been a labor of love and I've enjoyed every minute of it. And, it is with some regret that I leave behind. Because of *Intercom*, I've made new friends, met an incredible number of talented, dedicated people, acquired a greater understanding of the marvelous work being done at the Center, and learned a lot about communications in general. Because of your support, *Intercom* has grown into something of which we can all be proud of.

This has been a team effort, and I'd be remiss if I didn't single out a few people for special recognition. Without guidance and help from the production team of **Annette Harrell, Bob Marks, Bill Dawson, Ernie Pappas, Pat Lui, Stan Ciurczak, Carol Martin, Dave Hess, and Laurie Zaleski**, *Intercom* would have never become a reality. Their expertise and patience

in teaching me the ins and outs of publication made *Intercom* a quality newsletter that has captured the attention of a growing internal/external audience. With them behind the scenes, my job as the front person was easy.

I also want to thank *Intercom's* many contributors. I cannot praise you enough for always making yourselves available to me and having the extraordinary patience to explain your programs and technologies to me time and time again. I will never be able to repay this debt of kindness.

I especially want to thank **Paul Lawrence, Therese Brennan, Adam Greco, Carleen Genna, Barbara Harris-Para, Mary Lou Dordan, Ginger Cairnes, Holly Baker, Cathy Jaggard**, and the other regular contributors for always being ready with articles, photos, and quick support.

You have all taught me so much over the past many years, and for that I owe you a life time of thanks. I know the new editor will come to rely on you and trust your judgement as much as I have.

It's has been so much fun working with you and I will really miss our regular interaction. I do promise, however, to stay in touch. I know I'll be needing your continued help as I begin producing a host of new publications and brochures highlighting the agency's R&D work.

I cannot thank you enough for making the experience so wonderful!
-- Terry

Profiles of Success

AXC-60 Wins 2002 Industry Award



The ACX-60 Advanced Imaging Division has done it again, winning a 2002 Communicator Crystal Award of Excellence in the Government/Federal Category for its recently produced videotape on the NEX-COM program for ACB-540.

The Communicator Award is an international awards program founded by communications professionals to recognize excellence in the communication field. Entries

are judged against a high standard of excellence, rather than against each other. Entries are judged solely on their own quality, creativity and resourcefulness.

The Crystal Award of Excellence is given to those entries whose ability to communicate puts them among the best in the field.

The competition is open to all companies, organizations, governmental agencies, or individuals involved in all aspects of visual communications.

The Communicator Awards gives winners and their clients the recognition that the work they are producing is outstanding and highly regarded by their peers. ■

Intercom can be found on-line at: <http://www.tc.faa.gov/intercom/intercom.htm>
The printed version of this publication has been temporarily suspended until the Department of Transportation's Fiscal Year 2003 Appropriations Bill is passed.

Kudos

Transportation Security Lab Continues Quality Work

The following people recently received a Superior Achievement Award for their outstanding dedication to the implementation of ISO 9001:2000: **Therese Brennan, Roberta Moncrief, Patricia Reichenbach, Theresa McGhee, Patrick O'Connor, Dave Hernandez, and Joseph Kunkle.**

This group of dedicated employees supported the most recent expeditious registration of the TSL Explosives Unit and the Trace Detection Systems, and provided invaluable support to the overall ISO process improvement initiative. They accomplished this while continuing their regular responsibilities.

The dependability, competence and professional integrity that they displayed as a team player for both the

laboratory and TSA headquarters were commendable and worthy of recognition.

Under the purview of ISO 9001:2000 and in compliance with the Management Plans for both Explosive and Trace Detection Certification, AAR-500 has developed a Configuration Management Engineering Change Proposal (ECP) Control System to track, monitor, evaluate, and control changes to the certified systems.

This electronic data base program, which is available on the Configuration Management web-site of the TSL intraweb, has the applicable security procedures to limit availability only to those requiring configuration information access. A Standard Operating Procedure (SOP)

and Process Flowchart was developed to provide an overview of the ECP control system process. These documents are also available on the web-site under reference documents. The appropriate employees in TSL were trained to this procedure. Acting in the capacity as the Configuration Management Officer, **Patricia Reichenbach**, is the point of contact and the coordinator with the engineering and technical representatives to resolve outstanding change recommendations. Acting in this capacity, she receives, logs, assigns, tracks, and maintains the ECPs in the control system and acts as arbitrator between the design control activity and the Security Technology Deployment Office (STDO) to resolve issues regarding configuration management and the change control process. ■



**Transportation Security
Administration**

FAA/NASA Joint University Program

Quarterly Review Meeting Great Success

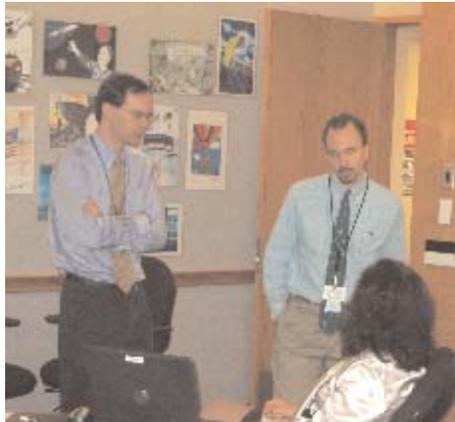


On January 9-10, the Tech Center hosted the FAA/NASA Joint University Program (JUP) quarterly meeting on air transportation technology. **Mike Paglione** (ACB-330) is the FAA JUP Technical Monitor.

The JUP is a long-term cooperative research partnership among three universities to conduct scientific and engineering research. The JUP provides grants to Massachusetts Institute of Technology, Ohio



University, and Princeton University to support research covering a broad range of relevant technical disciplines that include human factors, satellite navigation and communications, aircraft flight dynamics, avionics, and meteorological hazards.



The universities gained insight into their research, as well as proposed new avenues for investigation, via periodic reviews and interactions with FAA and NASA aviation and technical experts. Through this program, NASA and the FAA leverage their resources, enabling them to achieve better high-priority goals. They benefit directly from the results of specific research projects, and, less formally, from valuable feedback from university researchers regarding the goals and effectiveness of government programs. An additional benefit is the creation of a talented cadre of engineers and scientists who presently

form a core of advanced aeronautical expertise in industry, academia, and government.

Each year, quarterly program reviews are held at a NASA or FAA center and at each of the three universities. At these reviews, research results of the past quarter are presented, and future research plans are discussed. In addition, guest lecturers give presentations on matters of common interest.

For additional information on the JUP or current research briefings, contact Mike Paglione, FAA JUP Technical Monitor at mike.paglione@faa.tc.gov, or view the JUP website at <http://www.act250.tc.faa.gov/jup/index.html> ■



Key Member Retires

Member of the Tech Center Family Retires After 33 Years of Service

After 33 years of dedicated Federal service, **Ken Novakoff** retired on January 3. He grew up in New York, Florida, Missouri, and New Jersey. He and his wife Fran of 36 years have two children and two grandchildren. He was in the United States Air Force four years and went to college after serving in the military.

He worked for NAFEC in 1974 at Kennedy airport on the Wakes of the Vortices program as a coop student, before joining NAFEC as a permanent employee in 1975 after graduation. In 1980, when NAFEC changed its name to the FAA Technical Center, he worked on projects and programs like Wakes and Vortices, Collision Avoidance for gener-

al aviation, Air Traffic control projects, Aircraft Traffic Advisory and Resolution System, Glide Slope for small airports, Aircraft Engineering and Modifications, and a few others. He joined the aviation security R&D team in 1987 and worked there until he retired. ■



Then...



... And Now

Tech Tidbits:

Did you know? You can find information on the FAA's R&D programs and activities on-line at <http://research.faa.gov>.



Is anyone listening, reading, or watching ?

The VOICE web site offers FAA and other aviation related information that will keep you current on the latest happenings. To get to the VOICE site, use one of these addresses: <http://voice.faa.gov> (Internet) or <http://intranet.faa.gov/voice> (Intranet).

Also, check out **VOICELive**, a "Larry King type" interview show **hosted by Jerry Lavey** (AOA Highlights.).

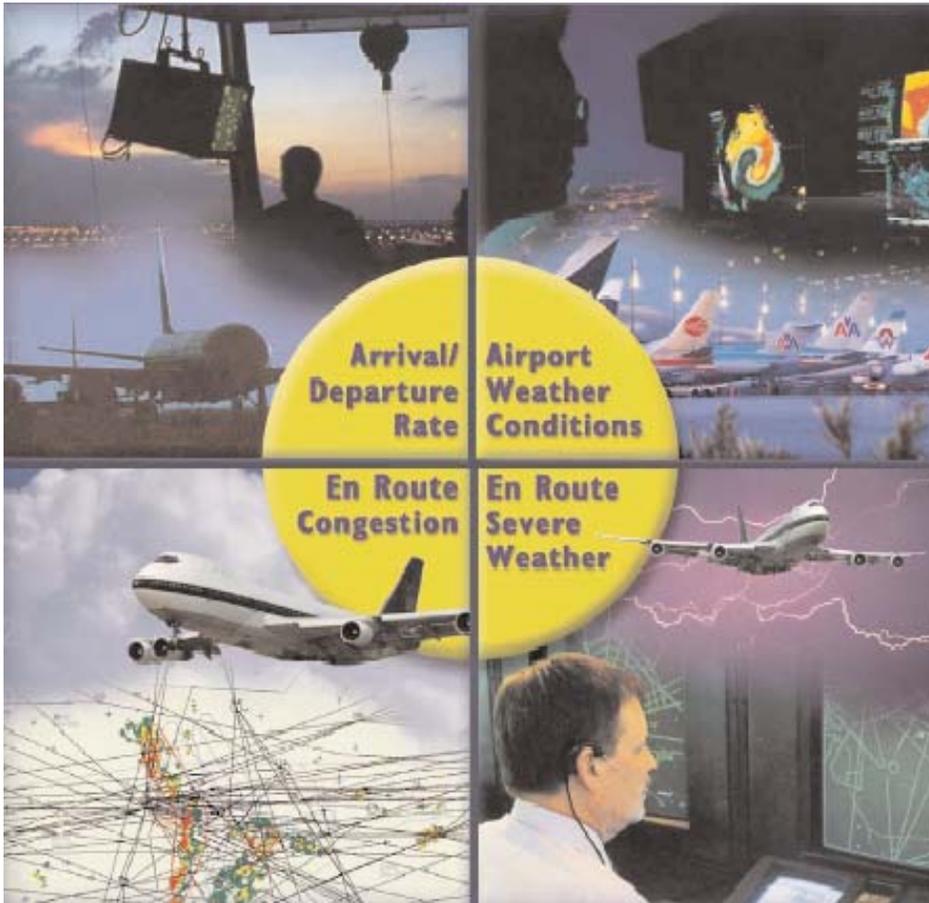
You can find archived VOICELive programs at <http://videoontheweb.faa.gov>. Past shows have featured Administrator Marion Blakey, John Thornton, Peggy Gilligan, and a host of others.

Remember **VOICE** puts information at your fingertips!

And, don't forget to call the **VOICE** Toll-Free Number at 1-877-888-4325 to get the latest FAA information. The message is updated weekly on Wednesdays.

OEP Updated

Now on-line at www.faa.gov/programs/oep



The latest version of the Operational Evolution Plan (OEP) is now available on the FAA's website at www.faa.gov/programs/oep.

The Executive Summary of the OEP Version 5.0 outlines the changes since the earlier version was issued a year ago, extends the time frame to 2013 and reaffirms the FAA's commitment to increasing capacity and efficiency in the National Airspace System.

As with earlier OEP versions, this one was developed with the cooperation and collaboration of the aviation community and in partnership with the Department of Defense and the National Aeronautics and Space Administration.

The latest version reflects the changed operational and financial conditions in the aviation industry and shows the commitments and investments required across the avia-

tion community. Also included are more details on redesign of the national airspace both in the enroute and terminal areas and longer-term plans to make greater use of area navigation (RNAV) and Required Navigation Performance (RNP).

The OEP is the FAA's 10-year plan to increase the capacity and efficiency of the NAS while enhancing safety and security. The commitments and decisions in the OEP have emerged from a close collaboration with the entire aviation community including the airlines, cargo carriers, airports, manufacturers, general aviation, the DOD and NASA.

Modernizing the NAS is continuous, evolutionary and multi-faceted. The OEP is a "living" document that matures over time. The OEP only contains capacity and efficiency-related programs that can be accomplished in a 10-year timeframe and with each version the timeframe rolls forward one year. Updates may occur as decisions are made, risks are identified and mitigated, or research discovers new solutions to operational problems. ■



Celebrating FAA's Rich History

Key January Dates



"Archie"
one of FAA's first
air traffic controllers.

1947 -- January 9: **Regulations governing the administration of the Federal Airports Act** received final approval, and two days later the Civil Aeronautics Administration announced the 1947 construction program, listing 800 airports for either construction or improvement. Published in February, the first National Airport Plan under the program contained a three-year forecast

of requirements involving 4,431 locations. Twin Falls, Idaho, became the first community to receive a grant.

1959 -- January 15: **Agency Order 1 prescribed FAA's basic organizational structure.** Three staff offices headed by Assistant Administrators assisted the Administrator and his Deputy: Management Services; Personnel and Training; and Plans and Requirements (the name of which was shortened to Plans on July 10, 1960). Other staff officials reporting to the Administrator included the General Counsel, the Civil Air Surgeon, and the heads of the Offices of Public Affairs, Congressional Liaison, and International Coordination. The agency's major programs were entrusted to four Bureaus whose Directors reported to the Administrator: Research and Development (testing and development of new equipment); Flight Standards (certification of airmen, aircraft, and air carriers); Air Traffic Management (planning and operation of the airspace system); and Facilities (acquisition and maintenance of air

navigation facilities and related equipment). FAA's initial field structure retained the Civil Aeronautics Administration's system of six numbered regions headed by Regional Administrators reporting to the agency chief. Three large field facilities were exempt from regional control: the National Aviation Facilities Experimental Center (NAFEC), the Aeronautical Center, and Washington National Airport. President Eisenhower had signed the Federal Aviation Act of 1958 into law on August 23, 1958, creating the Federal Aviation Agency. Elwood Quesada became the Agency's first Administrator on November 1, 1958.

1960 -- January 9: **FAA announced a rule requiring airborne weather radar** on most U.S. airliners in passenger service. Deadlines for installation were: (a) Jul 1, 1960 for turbojet and turboprop airliners; (b) Jan 1, 1961, for the Douglas DC-6 and DC-7 series and the Lockheed Constellation 1049 and 1649 series; and (c) Jan 1, 1962, for all other affected aircraft. The rule exempted the Curtiss C-46, Douglas DC-3, and Lockheed L-18, as well as aircraft operated only within Alaska or Hawaii. An FAA rule issued on April 8, 1966, extended the requirement to large transport aircraft used for cargo only. Turbojets were required to comply by the end of 1966, and all others by the end of 1967. This rule also exempted certain older aircraft as well as operations solely in Alaska or Hawaii.

1965 -- January 18: FAA released a **research study concluding that transport-aircraft fuel tanks could be**

designed to reduce the fire hazard of crash landings.

Conducted for the agency by General Dynamics, the study involved tests in which experimental tanks survived crashes of up to 57Gs without rupturing. The study estimated that such tanks would increase wing weight and production costs by as little as one percent, and recommended consideration of fuel-containment principles during preliminary design of future aircraft.

1969 -- January 15: The **U.S. Civil Service Commission (CSC) ruled that the Professional Air Traffic Controllers Organization (PATCO) was an employee organization**, not a professional society, because it had sought and obtained a dues-withholding agreement. FAA had agreed to permit a voluntary payroll deduction plan for the payment of PATCO dues with the understanding that PATCO would remain a professional society. As a result of the CSC ruling, PATCO became subject to the Standards of Conduct and the Code of Fair Labor Practices. At the same time, however, PATCO became eligible for formal recognition as a labor bargaining organization under Executive Order 10988.

1976 -- January 9: As of this date, **FAA implemented a conflict alert system**, capable of warning air traffic controllers of less-than-standard separation between aircraft under their control, at all 20 air route traffic control centers in the contiguous U.S. FAA added the new conflict alert capability to the radar data processing system of the NAS

En Route Stage A center computers. The new system projected the flight paths of all aircraft on the controllers' radar sector for two minutes ahead, and flashed the relevant aircraft data tags if the projection showed the paths approaching closer than the required horizontal and verti-



cal minimums. The controller could then radio appropriate orders to the aircraft to avoid a collision. The conflict alert system initially operated only above 18,000 feet, but by December 1978 all 20 centers had implemented it from the ground up. FAA later installed a similar capability in the Automated Radar Terminal System (ARTS) computers.

1980 -- January 21: **FAA published a rule limiting the amount of ozone gas** that might be present in airliners flying above 18,000 feet. The agency restricted ozone concentration in the cabin to a maximum of 0.25 parts per million at any point in time. In addition, the average exposure on flights of more than four hours was to be no more than 0.1 parts per million. FAA left the airlines the choice of achieving these standards through air filters, use of engine heat to break down ozone, or selection of routes that avoided ozone concentrations. The agency expected, however, that about 500 large transport aircraft used at high altitudes in northern latitudes would require modification. The deadline for compliance was February 20, 1981. The same rule amended airworthiness standards for new transport aircraft to provide protection against ozone irritation. ■

Insight to Flight:

The Wright Brother's Dream to Bring People Together

One hundred years ago, for two young businessmen, catching a plane to anywhere could only be done in their minds' eyes. Taking flight was a dream, a dream that Wilbur and Orville Wright chased right to the heavens. While their first flight was one of the shortest in the history of powered, sustained flight, it took the two men on a journey into history.

The brothers were born to Milton, a minister in the United Brethren in Christ Church, & Susan Loener Wright. Wilbur was born in 1867 in Richmond, IN. Orville, born in Dayton, OH, came along four years later. Both learned to be self-sufficient at an early age and were encouraged to take advantage of educational opportunities.

This training helped the brothers develop an entrepreneurial spirit. Orville began a printing business doing small jobs with a friend. Wilbur later joined them, and together they created the WEST SIDE NEWS, a four-page newspaper. A few years later, taking advantage of the latest trend, the brothers began a bicycle manufacturing company, producing two models, the "Van Cleve" and the "Wright Flyer."

Despite their business successes, the brothers could not shake a childhood experience that would lead to history. In 1878 the brothers received a toy helicopter, which was powered by two counter-rotating propellers, that actually flew. The brothers also loved to fly kites. These "toys" inspired them to develop an interest in flight that would last a lifetime. Over the next 10 years, they read everything they could get their hands on pertaining to flight. They read about glider pioneer Otto Lilienthal, Samuel Pierpont Langley and Octave Chanute, both aviators who published materials on aviation exploits. The more the brothers explored flight the more they wanted to build their own flying machine.

The brothers decided the best glider design would be a biplane or "double-decker," as Chanute called it. To solve the problem of equilibrium, they decided on movable surfaces. Having a design in hand, the brothers determined Kitty Hawk, NC was the best launch site due to the fairly constant winds that existed most of the year.

Non-Powered Flight

The first aircraft the Wright Brothers flew was a kite with movable surfaces manipulated from the ground by long controls. Then came their glider. Putting a person on board would be necessary to control the craft, as it was difficult to fly. These experiments lead to some key conclusions for the brothers.

- ◆ Practice is the key to the secret of flying
- ◆ Drag or wind resistance can be reduced by the pilot assuming a horizontal position
- ◆ Up & down motion can be controlled by adding a pair of smaller wings, set at a negative angle in front of the main wing
- ◆ Wing warping can control side-to-side motion

In 1901, the brothers returned to Kitty Hawk with a larger glider, but the experiments were not a success because they only achieved about 389 feet. Chanute told the brothers that he felt the air pressure (on an airfoil) was a problem. Discouraged, the brothers pressed ahead. They knew they had to build something that would allow them to measure the pressure on the airfoil. In 1901-02, they constructed a "wind tunnel." Their second glider managed to fly 622 feet.

The brothers, who had been keeping their work a secret, applied for a patent in 1903 for their flight control system. Motors were not plentiful at the time, so along with a machinist from the bicycle shop, the Wrights constructed a lightweight 4-cylinder engine that achieved 12 horsepower. However, there designed still lacked a cooling system for the engine.

They solved the engine problem, but now needed to design an airfoil or a propeller. They ended up putting "pusher type" counter-rotating propellers on the glider. Could this design finally mean success for Wilbur & Orville?

History was made on December 17, 1903 at 10:35 a.m. at Kitty Hawk with a machine the brothers called the "Wright Flyer." Witnesses to the flight were J.T. Daniels, W.S. Dough, A.D. Ethridge, W. C. Brinkley and Johnny Moore. Orville was the first pilot of the day. Winds were blowing about 24 M.P.H. The glider left the rail (which was being used to direct the glider in the sand) about 40' down the 60' track. History tells us that 120' and 12 seconds later, man had achieved his first powered flight. Three more flights were made that day each achieving longer airtime, with the last remaining in the air for almost one minute. However, the aircraft was damaged during landing.

Despite, the making of history, there was no news coverage. The press was indifferent. What did appear in the newspapers was inaccurate. The brothers sent a telegram to their father sharing him of their success. He informed the DAYTON JOURNAL of his sons' successful flight.

The Wright Brothers continued to refine their design of their flying machine and in May 1904, the Wrights tried a bigger aircraft with better engines at Huffman Prairie, OH.

The Wrights, suspicious of individuals who wanted to steal their design, did very little flying for the next three years. In 1908, the brothers entered into contracts with the U.S. Army and a French company to develop aircraft called "Type A." At this point, Wilbur took one of the aircraft to France for a demonstration. Orville was in charge of the Army tests. It was during one of these flights that the first aviation fatality occurred. Lt. T.E. Selfridge was killed and Orville suffered a broken leg.

In 1909-10 Europe and America became very interested in the aircrafts the Wrights were developing. Many patent and legal battles ensued with the brothers winning major of the judgments.

During this era, others were pushing ahead to make flying machines. Such men as Alexander Graham Bell, Glenn Curtiss (a noted motorcycle racer & inventor), and other investors formed the Aerial Experiment Association to build aircraft using different types of design concepts. These individuals would eventually give the Wright Brothers their biggest challenges.

Though the Wright Brothers were considered the first to achieve powered flight, they faced major battles in defending their patents against Curtiss and others. They also feuded with the Smithsonian Institute for recognizing Langley, who was former secretary of the organization, as the developer of the first successful powered airplane. These battles took its toll on the brothers. Some believed the stress from these events eventual lead to Wilbur's early death.

By 1911, the brothers had led the way to the development of a new industry. Both had taught many people to fly and these new "instructor pilots" went on to teach others. This created a demand for more aircraft. They sold their patent rights to both France and Italy. Wilbur became stricken with typhoid fever and died that year. Orville went on to develop the automatic stabilizer and several more aircraft models.

In 1915, Orville sold the patents held by the Wright Co. but continued to work in privacy. He died in 1948. However, he, along with his brother, had created a legacy that will be remembered until the end of time.. ■

COE Student Recognized by DOT

2002 Annual Student of the Year Awards



For the past 13 years the Department of Transportation (DOT) has sponsored an Annual Student of the Year Awards ceremony to honor the most outstanding student from each

participating University Transportation Center. The FAA Centers of Excellence have been included in this award for the past five years. Students are honored for their achievements and promise for future contributions to the transportation field. Students of the Year are selected based on their accomplishments in areas such as research, academic performance, professionalism, and leadership.

Wichita State University aerospace engineering graduate student, Lamia Salah, has won the 2002 DOT Center of Excellence Student of the Year Award. She is currently working on a master's degree in aerospace engineering in the field of structures and solid mechanics at Wichita State University, a member of the FAA Airworthiness Assurance Center of Excellence.

The DOT honored her and 32 other students on January 13 in Washington, DC, at the 12th Annual University Transportation Centers Outstanding Student of the Year Awards ceremony.

As an undergraduate aerospace engineering student at WSU, Salah worked on a FAA-sponsored project entitled "Determination of Temperature/ Moisture Sensitive Composite Properties." The report was finalized and submitted to the FAA in spring 2001 and is currently a DOT report.

Salah's graduate thesis project, "Bonded Repair of Aircraft Composite Structures," is a joint project sponsored by the FAA Office of Airport and Aircraft Safety Research and Development, Boeing, and several airlines (United, Delta, Lufthansa, USAirways) as well as several national research institutions, including Sandia Laboratories at Albuquerque, NM.

In November 2002, Salah won an award for the student poster competition at the 2nd annual FAA Centers of Excellence Joint Annual Meeting held in Wichita, KS. Her adviser is John Tomblin, associate professor in aerospace engineering and director of research and development of the National Institute for Aviation Research.

Previously, the FAA has had four winners in the competition: three from the University of Illinois - FAA Center of Excellence for Pavement Technology, and one from Massachusetts Institute of Technology - a Center of Excellence for Operations Research member.

For further information about the FAA COE Program, contact the Program Office at 609-485-5043 or visit www.coe.faa.gov. ■

Substitute Teaching

Center Employees Serving the Community

The inaugural year of the Tech Center/Atlantic City Board of Education Substitute-Teaching Program was very successful and has now entered its second year. The Tech Center initiated the program in November 2001, with Atlantic City High School (ACHS) as the pilot school.

Plans already are being made to expand the program, according to program coordinator **Donna Young** (ACT-10). A new tutoring program, substitute teaching of the English language and substitute teaching at a second school -- Pleasantville High School -- all are on the drawing board.

Substitute teaching gives Center employees the opportunity to share their technical expertise with teenagers from the Atlantic City area. Employees who volunteer for the program teach "on the clock" during normal school hours.

The substitute-teaching program came about, initially, through **Chris Seher**, Manager, Airport and Aircraft Safety R&D Division (AAR-400). He informed the Center's management team that he was aware of a shortage of qualified math, science, and computer teachers at Atlantic City High School, and the management team asked that recent Tech Center retirees be contacted as a possible resource for ACHS.

PREPARING GENERATION 'Y'

The Human Resources Management Division (ACT-10) conceived a unique idea, orchestrating a customized substitute-teaching program that would allow Center employees to share essential, real-world applications and technology experience with ACHS students, while meeting a community need for current and future teachers. The program would provide students with the types of knowledge and skills that are needed to compete in a global, technology-driven economy, while fostering an interest in aviation for students who may become the next generation of Center employees.

The HRM division staff (**Ron Smith** and **Donna Young**) and the ACHS teaching supervisors (Sherry Yahn & Al Corres) developed a strategy and schedule to create this innovative program. The program was effectively marketed and coordinated through the labyrinth of protocols and policies and was advertised to all Center employees. Sixteen employees signed up, and thirteen actually participated in this program.

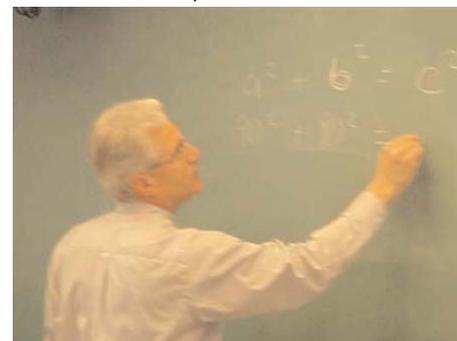
HATS OFF TO THE VOLUNTEERS

The following Tech Center employees took part in the 2001-2002 substitute-teaching program: **Rosanne Weiss**,

Jill Shara, Bennett Flax, Bob Filipczak, Lee Whilden, Pete Sparacino, Robert McGuire, Terry Lewis, Michelle Hovan, Jim White, Paul Jankowski, Stacey Hamilton, and Michael Magrogan. Rosanne Weiss and Pete Sparacino gave guest lectures, in addition to taking on substitute-teaching assignments.

Each had to obtain a New Jersey substitute-teaching certificate, and was given the opportunity to shadow the teachers they would be filling in for to acquire ideas for instructional, discipline, and management strategies. They also attended training provided by ACHS called the Apple Institute, which dealt with conduct and discipline problems that could be encountered, and how to handle them. The substitute teachers were placed on a rotational schedule for reporting to the school.

When the call to duty came from the school, each Center employee served either as a substitute teacher or a guest lecturer in a math, science or technology class. They managed classroom discipline, followed school



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Substitute Teaching -- continued from page 11

routines and taught lessons under the direction of the Supervisor of the Math and Science Department. They either used a lesson provided by the regular teacher, or taught a lesson of their own based on district curricula and approved by the regular classroom instructor.

WIN-WIN FOR STUDENTS AND EMPLOYEES

One employee who volunteered for this program was Center mathematician Rosanne Weiss (AAR-490). Prior to the inception of this program, Rosanne was a certified, experienced teacher who had assisted in numerous Special Review Assessment (SRA) classes for seniors who failed the High School Proficiency Assessment in math or English in their Junior year. Rosanne is happy to share her knowledge with local students, and sees the agreement between the Tech Center and the school as a very positive thing. Rosanne says the program could use more employee volunteers. "I think the program is great," Rosanne said. Another volunteer substitute-teacher



Rosanne Weiss used her years of experience as an educator to teach Atlantic City High School students.

is Peter Sparacino, a civil engineer by training and the Technical Center's program manager for the Center of Excellence for General Aviation (AAR-400). Pete also is very committed to the importance of getting a good education, and has a special



Pete Sparacino was able to get ACHS students actively involved in learning geometry by using math examples from baseball and engineering.

knack for coming up with real-world examples that make learning fun. Pete coaches his daughters' softball teams, so in one geometry lesson he decided to teach the mathematics of bunting. The teenagers in his classes could immediately relate to sports and readily grasped the lesson, according to the teacher who was overseeing Pete's presentation. Pete sees a lot of value for people from technical backgrounds that can bring real-world examples into the classroom. He says it's fun for the teacher to use real life examples, too.

In another geometry lesson, Pete decided to show his students how knowledge of mathematics was applied to the Taxiway Centerline Deviation Study. The study reflects preliminary research into the compatibility of new large aircraft and existing taxiway networks that shows new large aircraft wingtips will intrude into the safety areas of adjacent taxiways, runways, and terminal areas on many taxiway routes. New standards call for increasing both taxiway widths and centerline-to-centerline separations from the current standards. In order to make these decisions, data must be collected and analyzed, and it was determined that collecting data on the deviation from taxiway centerline for Boeing 747s will provide the information necessary to make that decision.

AAR-410 personnel successfully installed the taxiway centerline deviation measurement system at Anchorage International Airport a little over two years ago. Each system consists of two laser range-finders, a computer with appropriate software, associated structural stands to mount the equipment to the proper height, and associated infrastructure of concrete foundations, power, and data collection cables. They used deviations from the centerline of taxiing Boeing 747 airplanes along with a statistical analysis of these deviations to estimate the probabilities of airplane contact.

The geometry students Pete taught at the high school used a few basic tools -- a carpenter square, a laser and a tape measure. These tools were comparable to the ones his

Substitute Teaching - continued from page 14

team took to Alaska when working on the project to install the measurement equipment. Pete said everyone stayed keenly interested in the class as they actually got up from their seats in the classroom and used the tools, much the same way the FAA used them to layout the equipment to the accuracy levels required to obtain meaningful data.

ADDITIONAL OPPORTUNITIES REALIZED

Besides the learning and teaching opportunities, another benefit of this unique Tech Center partnership with ACHS was that two successful math/science students were awarded full-paid scholarships to Florida A&M University and also obtained student-

intern work assignments at the Technical Center (AAR-400). Mr. Chris Seher, Dr. Patricia Watts and the Centers of Excellence program staff (AAR-400) were instrumental in creating these additional opportunities for these students. ■

The French are coming, the French are coming...

A new group has been formed at the Tech Center for the purpose of having good conversation with good friends while enjoying lunch. So, you may ask, what is new about that? Nothing much, except the group converses only in French. The new group is **Les Chevaliers de la Table Ronde**. The name is taken from an old drinking song. However, don't let the name fool you. There is no alcohol served. There is just good food (you provide it), great company and (use a French adjective for pleasant) conversation.

The meetings are held on Tuesday mornings at 11:30. The location floats from week to week. Rodger Mingo, one of the group's founders, has assumed the responsibility to secure a meeting room and notify group members. A weekly gathering that has taken place in Linwood for years inspired the formation of the group at the Technical Center.

The group was actually started quite by accident. Mingo's wife's career led them to France and, before he knew it, he had fallen in love with France, its people, the language, and all things French.

You don't need to remember much

Mingo says that to participate in the group, you don't have to speak French fluently. "You don't really have to remember much French to join us," Mingo said. "A couple folks show up every week and don't say much more than 'bonjour,' 'd'accord,' 'oui, oui,' 'mais non,' and 'au revoir.' Other weeks these same people open up with words that mysteriously come back to them. So join us if you ever had a semester or two of French; an adult evening school's 'French for Travellers'; or had a class or two at the Alliance Francaise in Philadelphia. There is no pressure. You do not have to speak. Just come and listen. The only rule is that

absolutely no English is spoken between our first 'bonjour' and our last 'au revoir.'"

Becoming a Francophile

Mingo says that he may have never discovered the beauty of France and its people had it not been for his wife excelling in a two-year course for French cuisine, which led to an internship at a gourmet restaurant in France during the summer of 2001. "I had been firmly convinced by others, (who were supposed to know what they were talking about), that the French were arrogant, rude and unfriendly to Americans, said Mingo. "Being so convinced, I had no real desire to subject myself to their abuse, but my wife was working and living in France, and I thought it would be a treat for both of us to tour the country at the end of her internship. It was the beginning of a love affair with France in general and Paris in particular.

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Chilling Facts

From the Safety Office, Environmental Group (ACX42)



It's probably safe to say that unless you've been on travel for the past few weeks to Hawaii you're probably aware of the fact that it's cold outside. In fact, the next three months (Jan/Feb/ Mar) are typically the coldest months of the year.

It's the time of year, that from a safety perspective, you need to take the proper precautions before you go outside to work or play. Such precautions include wearing layered clothing, insulated footwear and gloves, and some type of headgear.

The consequences of not taking such precautions could subject your body to a variety of cold stress injuries. To give you an idea of some of the more severe consequences, here are some chilling facts on the most common cold stress injuries.

Chilblain - A non-freezing, painful, cold injury that causes little or no permanent impairment. It appears as red swollen skin that is tender, hot to the touch, and may itch. It can develop in only a few hours of cold exposure.

Frostnip - The condition involves freezing of water on the surface of the skin. The skin becomes red-dened and swollen. Usually there is no further damage after rewarming.



Frostbite - The condition occurs when freezing extends through the skin and flesh. The skin becomes numb and turns to a gray or waxy white color. The area will be cold to the touch and may feel stiff or wooden. Ice crystal formation and lack of blood flow to the frozen area damages the tissues.

Hypothermia - This condition is life threatening in which the body cannot generate heat as fast as it is being lost and the core body temperature falls below 95 degrees. Symptoms of possible hypothermia include confusion, slurred speech, uncoordinated movements, altered vision, and withdrawn or bizarre behavior.

With these chilling facts in mind it makes sense to warm up to safety. So take a moment or two to plan for your outdoor activity and make the winter in South Jersey cold stress free! ■

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Sandy Mingo interns in the gourmet restaurant, Chambery

"Being a fairly gregarious person, I reasoned, it's not enough to fall in love with France; you have to learn to communicate with the French in their own language. No big deal, I'll buy a book, a tape, I'll be talking to them in no time at all," said the Technical Center's Diversity Manager.

Mingo soon found out that his love for France would develop much faster than his ability to communicate in French. "I must tell you, those things just whet my appetite and gave me about as much working knowledge in French as that of a year old child," he said. "I reassessed my position and thought; maybe if I heard people speaking the language, I would learn it faster."

French speakers in our own backyard

So Mingo went on a search for French and found it much closer than he thought he would. "To my surprise I didn't have to go to France or drive to Philadelphia to practice my French. There are Francophiles right here in Atlantic County who get together and speak French every week," said Mingo. "This is about the time that I became aware of

Jeanette Flax's Linwood French Circle. The idea of forming a Tech Center French Table grew from a very fortunate meeting between Mrs. Jeanette Flax, wife of Bennett Flax (ACT-520) and me. Jeanette for some time now, has hosted a very genial meeting of French speakers in her home in Linwood. The attendees of this meeting are native French speaking people as well as those who have acquired the language and they are among the nicest people one could ever hope to meet. I've known Bennett for years (he wouldn't want me to tell you how long we've known each other because you might start counting back the years), so I asked him if he thought his wife would mind if I attended one of the meetings. Bennett, ever gracious, assured me that she wouldn't mind and said that the group would be very welcoming, so I attended. As patient as they were, and they were very patient, it was clear I needed much more, so I embarked on my next adventure, 'I'll go to France.' I'll enroll in an immersion course for a month, and when I return, there's no question that I'll be speaking French. Now, thinking back, I have to say to myself, GET A GRIP, WHAT A YA CRAZY?!"

Why France caught me by surprise

Despite having taken training in France, Mingo is still finding fluency a challenge. "I have not yet mastered the language, but I'm getting better. More importantly, in France, I found the French to be charming, friendly and helpful. In my experience, they absolutely are not, the arrogant, American-hating people that I had

been led to believe," said Mingo. "They have pretty much the same attitude about their country as we have about ours. They love their country and their language, and why shouldn't they? Don't you love yours?"

"Picture if you will, a New York street scene: A Frenchman walks up to a native New Yorker, and in asking a question, demands that the New Yorker answer only in French. I will leave it to your imagination as to what would happen next. Quite frankly, I felt a little cheated by those old friends of mine, who unknowingly through their stories influenced me against France on my previous visits to Europe. I felt that I should have known better, and here again was but another example of listening to the biases of others and not bothering to experience a thing before passing judgment. But, I'm past that now and I have a new and growing understanding of the differences and similarities of our respective cultures."

Mingo said the following is an example of his experience with the French. "One evening in Paris, while trying to figure out how to cross the very dangerous circle (a circle that is the center point of 12 separate, converging streets) that surrounds the l'Arc de Triomphe, my wife and I pondered racing through the next micro-pause in the extremely heavy traffic. Crouching to a racing posture in preparation for our 'death sprint' across the circle, our lives were saved by a Frenchman who tapped me on the shoulder and cautioned, 'Oh no Monsieur, you don't want to do that.' He showed us why what we

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Celebrating the Human Spirit

Center Holiday Celebration Embraces Diversity

In a perfect world, people from all walks of life - different cultures, religions, ethnic backgrounds, and races - come together to work and exist in harmony. For a short time in December, the Tech Center demonstrated what a perfect world could be. Various groups of people came together for a holiday celebration and anyone who had anything to celebrate were invited to plan and participate. The result was a highly successful Tech Center-wide holiday celebration that honored the human spirit.

"When we were planning this event, there was great discussion on what to call it. We wanted to be politically correct because we wanted everyone to participate and did not wish to offend anyone," said **Beverly Hite**, chairperson of the holiday celebration committee. "We knew that not everyone celebrates the same holidays. Some of us do Christmas, others Hanukkah and still others Kwanzaa."

While the party really didn't have an official name, the reason to bring everyone together was clear. "I thought about the spirit of each of the holidays," said Beverly. "Each of these holidays suggest that we be

gracious to each other and grateful for the miracles in our lives, both large and small."

Thus, the committee came together and organized an event that celebrated the spirit of each of the holidays. An event where each employee could celebrate the miracles in our lives, our blessings, our gifts.

"I am very happy with how the holiday celebration turned out because so many people had a good time," said Beverly. "The effort was actually a labor of love by everyone involved. The entire committee pitched in and helped to make this a great event."

Maude Powell, a member of the organizing committee, explained that the celebration "provided an enjoyable time for all who attended. It

offered a variety of activities and reflected the diversity of the center's workforce and the various cultures' ways of observing the season." Another team member, **Janet Kinsell**, said, "With little time to plan, I was most impressed with the camaraderie among co-workers and the overwhelming willingness to do whatever it took to ensure a successful celebration for all employees. I have always believed the Tech Center employed terrific people, but it wasn't until I had the chance to talk and sing with many of them, that I actually got to experience such friendship."

The celebration offered something for everyone. There were ethnic foods of all types, from traditional turkey, which was fried on-site by **William Belton** and **Peter DeSilva**, to Spanish dishes that were accompanied by the sounds of very talented musicians, who also happened to work at the Tech Center.

On display was a Kwanzaa exhibit, a menorah to commemorate Hanukkah and of course, Christmas trees that were decorated by various Tech Center organizations. There was a festive little train that allowed your imagination to catch a ride to the North Pole to visit you know who. Santa even sent a repre-





representative of Mrs. Claus and himself. The mechanical likeness of St. Nick and his lovely wife greeted everyone in the atrium. In a surprise appearance, the real Mrs. Claus honored us with a visit (**Pat Brown** gave an Oscar-winning performance as Mrs. Claus).

In the center of the decorations was a magnificent symbol of the season, which also served as a reminder to take care of our planet. **Lana Haug** and **Carole Bralski** led a team of volunteer decorators to garnish a giant pine tree with hand-made ornaments made from natural ingredients. These decorations included popcorn garland, dried fruit, and cranberry garland just to name a few things. The result was a beautiful tree of which Mother Nature would have been very proud.

Of course, a holiday celebration would not be complete without gift-giving. Since the sheer number of participants made it impossible to give gifts to everyone, tickets were passed out to give attendees a chance to win dozens of prizes.

Al Jefferson, who volunteered to videotape the event, said, "I won just by attending. This affair was absolutely great. I am very glad I attended."

Magda Colon, who worked to set-up the table for the National Hispanic Coalition of Federal Aviation

Employees (NHCFAE), said, "The party was nice. The NHCFAE enjoyed it very much and we appreciated the invitation extended for each of the Coalitions to sponsor a table. That gave people a chance to get to know us and experience some of the different cultures here at the Technical Center. I liked this team and thought they did a tremendous job given the amount of time they had to plan the party. This was the best one yet."

Phil Askins, assistant chairperson of the committee and who also has been involved in the planning of the previous Tech Center holiday celebrations, echoed Ms. Colon's sentiments. "I think this was the best celebration yet."

The celebration would not have been complete without some caroling.

Viola Gray pulled in groups of attendees and led them in songs of the season. Additionally, **Lillian Anderson** and **Zack Williams**



offered beautiful solos. The DJ talents of **Cecil Calendar** provided the music for the great singing and throughout the event. Besides being a great deal of fun, the event provided an opportunity to showcase the diversity of the entire Center. ■

The French Are Coming... continued from page 17

were intending would have been a death sprint, and why it was totally unnecessary. To get to the island (surrounded by swirling fast moving traffic) on which the l'Arc de Triomphe resides, there is a pedestrian tunnel. Our new friend, Paul, a man in his mid seventies, though he had been atop the monument many times, not only accompanied us, but raced to the summit like a young athlete, leaving us breathless and gasping on the stairs. Through our continued conversation with him, other Parisians were drawn into our small circle,



Rodger and Sandy Mingo flank their French "savior" Paul, atop l'Arc de Triomphe

including the guard who by now was to start shepherding visitors from the summit. Instead the guard moved

everybody else along except us, and with my camera took pictures of Paul, my wife and me. After being the very last visitors to leave the monument, Paul suggested ice cream at a sidewalk café on the Des Champs Elysees, after which he drove us around Paris for two hours, giving us the kind of tour, only a Parisian could. Such has been my experience with the French in Paris." Being exposed to another culture by way of it's language is exciting, invigorating and sometimes traumatic, but overall it's how we grow, even through the mistakes that we are bound to make. I am continuing on my journey, and if you speak French or are learning to speak French I would like to invite you along.

From that beginning and subsequent trips to France, the idea of a French Circle at the Tech Center began to form. We have had four meetings at the time of this writing and they have been thoroughly enjoyable. The group (so far) consist of 10 members who graciously consented to the formation on the request of a newly converted



Rodger Mingo standing on the banks of the Seine River

and admitted Francophile, me. The current members are: Bennett Flax, Pascal Pecheaux, Barry Silverman, George Chachis, Mary Ingram, Jacques Press, Marlo Higgins, James Hamilton, Melody Moser and yours truly.

The director and deputy director were our invited guests for our third meeting, and we had a great time. We expect to have other guests visit in the future, and I hope you will join us also. Bienvenue a Les Chevaliers de la Table Ronde.

If you have an interest, please e-mail or call me at: Rodger.mingo@faa.gov or call 5-6489. ■

Take the Shuttle

New Tech Center Shuttle Service:



The Center has awarded a new Air Shuttle Service contract for service between ACY and DCA.

The new contractor is Corporate Flight Management (CFM) of Smyrna, TN. CFM has a fleet of seven British Aerospace Jetstream 31s and 32s, and is providing a 14-seat aircraft for the Tech Centers' transport. CFM began service on November 1, 2002.



Make reservations early!

Reserve your space on-line at: www.tc.faa.gov/shuttle,
or call (609) 485-6482.

Meet the New Editors

Norris Hite, Jr., is Intercom's new editor, with more than 20 years in the field of print communications. He has worked as a daily reporter for several newspapers, has been an associate publisher for a chain of business newspapers, and has served as the publisher/managing editor for two national magazines. Norris has also used his expertise in helping to launch two other national magazines. He has a Bachelor of Arts degree in Journalism from Florida A&M University. He is married and has three children. Norris can be reached via email or at (609) 485-5730.

Mary Lou Dordan is Intercom's new assistant editor. She recently re-located to the Tech Center from the FAA Alaskan Region where she worked most of her 16 years with the government as a Deputy Public Affairs Officer. Mary Lou has an unique and diverse background with both government and private industry in the areas of public affairs, marketing, and human relations. She has authored a variety of oral and printed media, including magazine articles, educational workbooks, management speeches, press releases, etc. She has a Bachelor's degree in Speech and Communications from the University of Illinois. Mary Lou can be reached via email or at (609) 485-6493.



**A Newsletter of the FAA's
William J. Hughes Technical Center**

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