FAA Aviation news

JULY/AUGUST 2003

AVIATION SAFETY FROM COVER TO COVER

Inside:

The FUTURE of FITS

U.S. Department
of Transportation

**Federal Aviation
Administration**

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FAA Aviation news

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FRONT COVER: FAA's N-34 returns to join in the Centennial of Flight celebration.

BACK COVER: The new Piper 6X *debuts at the 2003 Sun 'n Fun Fly-in. (photo courtesy of ™The New Piper Aircraft, Inc.)*

FITS

Times (and Training Requirements) Are a Changing

FAA/Industry Training Standards

Mario Toscano photo

Part 3

The Future of FITS

by Thomas Glista

This is the third and last in a series of articles introducing the FAA/Industry Training Standards (FITS) Program. The first article focused on the overall concept of the FITS program. The second article focused on what the FITS program is doing now and who our launch customers are. Those of you who read the first two articles and who do not want to read an overview of FITS can skip the next three paragraphs. This article will focus on what we hope FITS will evolve into.

If you look into the cockpit of today's modern general aviation airplanes, you can see GPS navigation, moving map displays, and even full glass cockpits. These advanced technology systems that previously were the sole domain of airlines and expensive corporate jets, have now trickled down into small, single-engine aircraft. In the past, displays, avionics, and navigation equipment all looked and worked pretty much the same no matter who manufactured the unit. (For example, a VOR head was a VOR head. You've seen one; you've seen them all.) Advanced systems and displays, on the other hand, look different and the way the pilot uses them may differ. If you try and program a Bendix/King® KLN 90B the same way you program a Garmin® GNS 430, it probably will not work very well. This brings us to a general aviation training problem.

Air carrier captains are required to take recurrent instrument proficiency training every six months and an aircraft check every 12 months (Title 14 of the Code of Federal Regulations (14 CFR) §121.441). Charter captains who are authorized to fly under IFR have a similar requirement (14 CFR §§135.293 and 135.297). Most corporate jets are large aircraft (over 12,500 lbs. maximum gross takeoff weight) that require a two pilot crew and the captain to hold a type rating in the aircraft. 14 CFR §61.58 requires these captains to complete a proficiency check at least every 12 months in an aircraft that is certificated for two pilots and a proficiency check at least every 24 months in the type of aircraft the pilot in command is flying. So these pilots are constantly taking recurrent and proficiency training in the type of aircraft they operate.

In general aviation we don't have these requirements. A private pilot

Garmin® 430. (Garmin® Corp. photo)

with a multi-engine and instrument rating could satisfy the regulations by taking a flight review every two years in a Cessna 150, then go fly off in a Mitsubishi MU-2. So why doesn't the FAA just create regulations that require general aviation pilots to take a practical test every six months with a designated examiner? First, the general aviation industry would not be very happy with new regulations that place a major financial burden on them. Second, the rulemaking process in the FAA takes years, and we do not have that kind of time. And third, and most importantly, it really is not necessary. Corporate operators have the same low accident rates as airlines, but without all of the regulations. FITS is working to take the best practices of the airlines, military, and corporate jets operators, and tailor them to the general aviation environment -- all the while increasing safety and convenience, and reducing the time and cost.

I must also explain what is the focus of the FITS program. FITS focuses on the segment of general aviation that uses single pilot, small reciprocating or jet-powered aircraft for transportation. Air carriers and larger two-pilot corporate jets already have extensive training requirements. The safety record of two-pilot corporate jets is just about the same as air carriers. The light-sport pilots (when the rule is finalized) and recreational pilots may be limited to the size and complexity of aircraft that they can fly, to what airspace they can operate in, to operate only in VFR (Visual Flight Rules) conditions, and to carry only one passenger. This limits their potential exposure to hazards. Personal or professionally flown single-pilot aircraft for transportation with new technologies is the current focus of FITS.

Currently, FITS is developing and growing. Our "launch customers" are working closely with the FAA and the Air Transportation Center of Excellence for General Aviation (the Center for General Aviation Research-CGAR) to produce training standards for these customers. Our first set of launch customers is AirShares Elite, Elite Flight Center, and Cirrus Design. AirShares Elite provides an owner flown fractional ownership program for the Cirrus Design SR22. The Cirrus Design SR22 is an advanced technology piston engine-powered airplane. Elite Flight Center is the training entity for both transition training to the SR22 and initial pilot training. Our other "launch customer" is Eclipse Aviation. The Eclipse 500™ is an advance technology small turbine powered airplane.

The FITS team is working hard on producing real products. We have finished the Cirrus SR22 transition syllabus. It is being used for the factory transition training. The syllabus may be changed as we gather data on the training. We are also writing the SR22 instructor syllabus, a recurrent training program, and a private pilot/instrument rating ab-inito syllabus. For the Eclipse, the FITS team is developing an Eclipse 500™ transition syllabus (type rating), recurrent training program, and instructor training program. The current (and aggressive) schedule plans to have all of these FITS products by September 30, 2003. Although these standards are for a specific type of aircraft, most of them will be converted to a generic template that a manufacturer or training provider can adapt to their specific aircraft or program.

Now, let's run through a few scenarios of what could happen when the FITS program has matured.

Scenario 1

Mr. Joe Busy is a businessperson who is upset with the limitations and hassles of flying on airlines (hub and spoke system takes too long and the hassles of dealing with the airline and airport security) and sees the utility of today's fast and efficient single-engine piston aircraft (let's call it a FlightAir-1). He wants to be able to use it for transportation as soon as possible. Since VFR-only flight will not meet this Mr. Busy's needs, a private pilot certificate with an instrument rating will be required. The 14 CFR part 141 pilot school enrolls Mr. Busy in the private-instrument combined curriculum developed under the FITS program and approved under 14 CFR § 141.57, Special Curricula. This training mainly utilizes scenario-based training (train like you fly and fly like you train). Under this special curricula the minimum experience requirements and limitations on the use of simulation devices (personal computer-based aviation training device or PCATD, and flight training device or FTD) are not applicable. So in a few months, with 70-80 hours of flight time and 50 hours of simulation time, Mr. Busy receives a private pilot certificate with an instrument rating and can safely operate a FlightAire-1 IFR in the National Airspace System.

Scenario 2

Francine Jones is a 200-hour private pilot with an instrument rating. She purchases a 1/8th share of a FlightAire-1 from Acme Airplane Management (AAM), an owner flown fractional ownership operator. AAM has used the FITS transition training tem-

UPSAT MX20. (UPSAT. photo)

plate and developed a transition program specifically for the FlightAir-1. Since the FAA has accepted this transition program, going through this program (and continuing with their recurrent program) allows Ms. Jones (a low-time pilot) to be insured to operate this high performance aircraft at a reasonable cost. Without this program, Ms. Jones might not have been able to get insurance at any cost. She arrives well-prepared for the transition program because three months before her training she was sent an interactive CD with the FlightAire-1 systems and performance training modules on them. When she arrives for transition training, a systems and performance quiz is first given to Ms. Jones. That way, the ground training portion will be tailored to her needs, and not waste time and money on things she already knows. As soon as she completes the transition program, she immediately goes to the recurrent training program.

Scenario 3
Recurrent Training Program

The recurrent training syllabus is taking a customer friendly approach by giving the pilot a new recurrent training option. The main thrust of this recurrent program is continuous training throughout the biennium — sort of like learning credits that doctors and lawyers are required to accomplish. In this program Ms. Jones takes an on-line module every quarter. The modules are updated and changed periodically. In the fall and winter there might be a module on icing. In the spring and summer a module on thunderstorms. If the pilot is planning to fly from her home base in Florida to Boulder, Colorado, there will be a module on mountain flying. If security concerns change airspace restrictions, there will be a module on this. If the avionics package in the airplane gets upgraded with new capabilities, this can be a module. At the end of each module the pilot can print out a certificate of completion. The last module is a flight with one of the AAM instructors who has been trained and accepted to provide this last module. The instructor reviews the completion certificates to ensure that the pilot has completed all the modules. The flight consists of a short cross-country scenario. Ms. Jones plans and executes the flight, with the instructor providing changes and distractions to not only evaluate her piloting skill and knowledge of the aircraft, but also her decision making, risk management, and single pilot resource management abilities. At the end of this flight she receives a certificate of completion. How is this approved as a flight review? 14 CFR §61.56(e) stipulates that a conventional flight review of §61.56(a) is not required if the pilot, within the preceding 24 calendar months, has satisfactorily accomplished one or more phases of an FAA-sponsored pilot proficiency award program. Since the FAA has approved this program as a pilot proficiency award program, the flight review requirement has been satisfied.

Scenario 4
One-Stop Flight Review

Propeller Joe has not been in a continuous recurrent training program, so he schedules a full flight review at a local FBO with an instructor in their Cherokee 6. When scheduling, Joe asks if the CFI has been accepted by ™The New Piper Aircraft, Inc., to give a flight review in this airplane. The CFI has been through the appropriate New Piper flight instructor acceptance program. When Joe arrives (or even before), the instructor goes on to the FITS website and, through a menu system, inputs all pertinent information on the operation, pilot, and aircraft.

Adam 500 in flight, and below, the Adam 700 in flight. (AdamAircraft photos)

For example, the operation is a one-stop flight review. The pilot holds a private pilot certificate, airplane single engine land with an instrument rating. The aircraft is a Cherokee 6 equipped with a Garmin® 430 and a UPS Aviation Technologies (UPSAT) MX 20 with weather data link capabilities. When all this information has been entered, the website displays four possible FITS flight reviews. One has been written by Bendix/King®, one by the New Piper, one by National Flight Instructors Association (NAFI), and one by the University Aviation Association. Joe's insurance carrier has approved two of them. They choose one, print the training program and are ready to do the training. Again, this syllabus contains a short cross-country scenario that Joe will plan and execute.

All of these scenarios provide a pilot with the training appropriate to the equipment and operation with a knowledgeable instructor. Also, all these scenarios can be accomplished within the current regulations. These are only a few examples of what might be. There will be other options available. For example, instead of a recurrent training module every quarter, there might be an approved program with a module every four or six months. We are planning to develop training programs for individual pieces of equipment for those who retrofit new equipment in their aircraft. Another concern is the integration of this new equipment with other equipment. How does a Bendix/King® KLN 90B integrate with a UPSAT MX 20? We will be working on these issues also.

So, how do we tie this together to get all these changes done? It will take lots of people and organizations working together. We need to get more than just two aircraft manufacturers (Cirrus Design and Eclipse Aviation) as part of FITS if we want to effect a change in safety and training philosophy and culture. We have been working hard on the future of

FITS by making contacts with prospective customers. Besides meetings with the established general aviation aircraft manufacturers (Cessna Aircraft and ™The New Piper Aircraft), we have had some discussion with Lancair® and have met with Adam Aircraft. Adam Aircraft is very interested in what we are doing.

Who will be doing the research on training? For example, if we intend to allow creditable time in FTDs and PCATDs over and above what the regulations call for, we need to know how much time and in what type of simulation device helps or hinders training. We have been working all along with CGAR on this issue. We also have had meetings with the University of Illinois and Averett University. AOPA/Air Safety Foundation is another resource for research. Of course, the manufacturers of the simulation devices would love to have their machines approved for additional use. We have made initial contacts with ASA and Elite Simulation Solutions.

Aircraft cockpits come with different options for instruments and displays. So we have talked with Garmin®, Bendix/King®, L-2 (which was Goodrich Avionics), and UPS - Aviation Technologies. All of these avionics manufacturers appear to be planning to have displays that will accept data linked weather displays. So we have had discussions with Weather Services International (WSI).

Lancair® HITS cockpit. (Lancair® photo)

Some products, like the training CDs Ms. Jones received before arriving for her transition training program must be developed by someone. Consequently, we have had discussions with some training providers including Sporty's®, King Schools, and ElectronicFlight Solutions. They all appear to want to work with us.

There are times when a product is developed and just "thrown over the fence" in hopes that someone will use it. We want to make sure that these best practices are used, so flying clubs and trade association have already been contacted. We are actively working with AOPA/Air Safety Foundation, National Air Transportation Association (NATA), General Aviation Manufacturers Association (GAMA), and the Small Aircraft Manufacturers Association (SAMA). We have met with the American Bonanza Society and the Cirrus Owners and Pilots Association.

Lancair® Columbia 500. (Lancair® photo)

When it comes to really looking into the future, there is always NASA. Currently NASA has a program underway called the Small Aircraft Transportation System (SATS). The SATS website is http://sats.larc.nasa.gov/main.html. The Congressional mandate is for the SATS program to validate the following four operational capabilities:

- Higher Volume Operations in Non-Radar Airspace and at Non-Towered Airports
- Lower Landing Minimums at Minimally Equipped Landing Facilities
- En Route Procedures and Sys-

The Avidyne FlightMax EX500. (Avidyne photo)

tems for Integrated Fleet Operations

- Increase Single-Pilot Crew Safety & Mission Reliability

We have initiated discussions with some SATS members on the possible role of the FITS program on the increase of single-pilot crew safety and mission reliability.

Another piece we haven't forgotten is the FAA inspectors and designated pilot examiners. We have an entire FITS workgroup made up of FAA aviation safety inspectors looking at the FITS team and products. This team will recommend inspector training and develop guidance. Appropriate portions of this guidance can be converted for designated examiner purposes.

What are the incentives for a pilot to use a FITS? I have hinted at some of the incentives: reduced insurance rates (or for some, just the ability to get insured), training at the pilot convenience, lower cost of training with additional use of simulation devices, and training that is pertinent to the type of flying the pilot does. But the most important incentive is that we will have safer pilots and that benefits all of aviation.

FITS now has a website at <www.faa.gov/avr/afs/fits>. It is currently very simple, but we had to start somewhere. It contains additional in-depth information on the FITS program, a few of the FITS products, and links to associated websites (i.e., Cirrus Design, Eclipse Aviation, Center for General Aviation Research, Avidyne, etc.). We plan for this website to house other information. I have recently talked to the National Program Manager, Vintage and Surplus Military Aircraft. He needs a place to make the industry training curriculums for vintage and surplus military aircraft available to the public. The FITS website would be a place for that. We will add links to pertinent FAA and industry offices. FITS is not planning to have a supply of paper documents. All standards will be electronic on the website. As the FITS program evolves so will the website.

The FITS program is growing. We are producing specific training curriculums for our launch customers. Many of these initial products will be converted to generic standards that can be customized to apply to other operators. An outreach effort is underway making initial contact with other aviation entities. We are doing this because FITS is like a puzzle (a BIG and complex puzzle). Without all the pieces in place, the picture will not come together. Our website is up and will grow and change as the FITS program grows and changes. We have ambitious plans to increase pilot safety by better, more convenient, more efficient, and more pertinent training. And we will do this almost exclusively within the current regulations.

Thomas Glista is an Aviation Safety Inspector in Flight Standards' General Aviation and Commercial Division and leads the FITS program.

FLY LOW, GO FAST, TURN LEFT

story and photos by H. Dean Chamberlain

Who says flying has to be complicated? Flying can't get much simpler than fly low, go fast, turn left. These words are the pilots' guidance for the 40th annual Reno Air Racing Association's (RARA) air races at the Reno/Stead airport, Reno, Nevada, September 11-14.

One pilot at last year's races, Cris Ferguson of Evansville, AR, added his own line to RARA's guidance in his Pitts Special. In his cockpit, not only does he have embossed on his instrument panel RARA's, "Fly Low, Go Fast, Turn Left" but he added his own line reminding him to "Don't Do Anything Dumb." Those words highlight the guidelines for the races while emphasizing the importance of doing it all safely.

According to RARA, this year's National Championship Air Races and Air Show will have a million dollar purse. That kind of money will attract the best of the best. Combine the best aircraft racers in the world with an air show and you have the making of four days of aviation fun and excitement. If you have not attended the races, there is something for everyone. From the feisty Biplane and Formula One category aircraft up through the classes to the Unlimited category with its powerful, piston-powered World War II type aircraft to jet aircraft, there is a type of aircraft for everyone. The maintenance pits provide you the chance to see aircraft up close and personal. Not only are the aircraft fast, but also it is amazing how fast a pit crew can change an aircraft engine when they have to change a blown engine.

An important note for those who love to watch the military's flight demonstration teams, the famed United States Air Force's Thunderbirds are scheduled to perform only three of the four race days. The Thunderbirds will not perform on Sunday, September 14. According to RARA's pre-race publicity, Gene Soucy and Teresa Stokes, Kirby Chambliss, and Kent Pietsch are scheduled to perform.

Reno/Stead airport has been the home of the National Championship Air Races since their founding in 1964. Run every year since 1964, the races were suspended during the qualifying pre-race events in 2001 because of the September 11 terrorists' attacks. Last year's return to racing was marred with the death of one of the participants, Tommy Rose, in the crash of his *Questair Venture* during a Sport class race.

With the many different type of aircraft raced at Reno and the number of aircraft movements on the ground, safety is an important element of the races. As I reported in the January-February 2003 *FAA Aviation News,*

(continued on Page 31)

photo courtesy of the manufacturer

"A 'HIRE' CALLING"

Story of the Pilot Records Improvement Act (PRIA) of 1996

by John Ryan

Old sayings—such as, "you get what you pay for" or "what you see is what you get"—have always played a role in our daily lives. But do these sayings really apply when it comes to the practical realities of our daily lives? Do we really get what we are paying for, and can we really see what we are getting before hand?

These thoughts can be applied to the world of aviation, especially in our current state of heightened security. Let's consider the world of professional flying; more specifically, the airline system. For the most part, the airline fleet is modern and up-to-date. Then there are the professional pilots who keep the airlines moving; and finally, the flying public, without which, neither the airlines nor the pilots would exist. It is a cycle, with each component requiring its own operating system and security considerations. Let's talk about new pilots wanting to gain employment at an airline or current pilots wanting to move on to another company.

It's not easy to become a professional pilot, and even more difficult to go to work for an airline. A pilot spends untold time, effort, and money to achieve the ratings and experience needed before an airline will even consider them for employment. But then, during the hiring process, how does the airline really know that the pilot actually possesses the ratings and experience that the pilot says they have earned? Enter the Pilot Records Improvement Act of 1996 (PRIA)!

PRIA was enacted as a result of seven fatal commercial air carrier accidents between 1987 and 1994. These accidents were attributed, in part, to errors by pilots, who were hired by their respective companies without an effective background check of their training history being completed. In fact, background checks of a pilot's training history at that time were not even required. Subsequent review of records revealed prior safety violations or training problems which were not known to the new air carriers when they employed these pilots. Recorded histories also included bad judgment, poor performance, or reckless behavior. All of these problems followed the pilots to their new companies without anyone noticing.

PRIA is not referenced in Title 14 of the Code of Federal Regulations (14 CFR), more commonly referred to as federal aviation regulations, but is contained in Public Law 104-264 Section 502, which is now codified in Title 49 United States Code (49 U.S.C.) section 44703 (h).

According to PRIA, before allowing an individual to begin service as a pilot, the air carrier is required to request records from the FAA, any previous employers, and the National Driver Register for the past five years from the date of the employment application. These records are then used to assist the air carrier in making an informed hiring decision. Advisory Circular (AC) 120-68,as amended, Pilot Records Improvement Act, details the procedure to be used by all air carriers operating under 14 CFR parts 121 and 135 when hiring new pilots.

The story:

The Pilot Records Improvement Act of 1996 (PRIA) became effective on February 6, 1997, and was en-

acted to ensure that all air carriers adequately investigate a pilot's performance background. PRIA mandates that a hiring air carrier must request and receive records from three sources: the FAA, the pilot's previous employer(s), and the National Driver Register. The Mike Monroney Aeronautical Center in Oklahoma City, maintains the FAA pilot records required by PRIA, specifically pilot certification, medical, and enforcement information. As you might guess, all three areas were maintained on separate data systems, which initially caused some measure of processing delays.

As will happen to many new programs, there were problems that surfaced almost immediately. Since the FAA was required to furnish information from three totally separate sources, it took much more time than PRIA allowed to complete the requests. By June 1997, the in-house backlog of requests had grown to 69 days. Then as news of PRIA began to spread across the nation, more air carriers began submitting requests, which created an even greater backlog of work. In addition, well over half of the requests had to be returned for correction. Also during this time, minor flaws in the PRIA law itself began to surface with many questions being raised by industry and the FAA itself. The new program was quickly beginning to falter and there was clearly a need for improvement and a quick reorganization.

At this point, the FAA's Aviation Data System Branch, AFS-620, pulled out all the stops. They moved workstations, computers, printers, and telephone lines. People were pulled in from other areas of AFS-620 to assist, and additional contract personnel were hired. Starting from way behind the power curve, a total of 17 people worked relentlessly to catch up. Fresh new ideas started to replace old cumbersome ways of doing business. By August 15, 1997, as a result of their "can do" attitude along with the extreme cooperation shared by all, AFS-620 was soon back to its 30-day limit allowed by PRIA. Thus began a practically non-ending process by staff and management alike, brainstorming new ideas, conducting countless meetings, forging out the new process, and growing a new system that will serve the aviation community with a much higher level of efficiency and accuracy.

Also in August 1997, AFS-620 was assigned the additional task of developing an automation system to reduce the delays even further. The new system was completed in less than six months, and was fully implemented by January 1998. The existing data systems, which included the Airman Certification records, Airmen Medical records, and Enforcement Information, could now all be accessed at the same time. As a result, the data, which used to take weeks to obtain from the various organizations within the FAA, could now be compiled within seconds into one comprehensive FAA pilot profile report to help ensure aviation safety. This was not only a profound enhancement to the PRIA information process, but could also be used to assist the FAA Flight Standards Service in the accomplishment of its strategic goal of expanding FAA partnerships within the aviation community for information collection and sharing.

As efficiency steadily increased, management began to release the temporary contract personnel, and the new PRIA system began to emerge. No longer a simple routine of data entry and retrieval, printing letters, and stuffing envelopes, the current job has become much more complicated requiring a higher degree of computer skills, and more insight into the field of aviation. This includes an understanding of the airman and medical certification process, the legal system, and federal aviation regulations. As a result, the new PRIA office has become a model of efficiency. Air carriers are now being provided with accurate automated pilot profile reports within two working days of receipt.

The spirit of cooperation and hard work has not been limited to the Oklahoma City office. From the beginning, two offices in Washington, DC, headquarters have partnered with AFS-620 in working through PRIA's growing pains. Specifically AFS-200, the Air Transportation Division, has worked out tough implementation issues and how to address them in policy affecting the public and the FAA's aviation safety inspectors. Similarly, the legal office of AGC-300, Office of the Chief

photo courtesy of GAMA

Counsel's Enforcement Division, continues to this day to resolve legal questions arising during the implementation of PRIA, for which there is no end in sight.

The sum of these FAA efforts is reflected in an exemplary record of public service in providing records held by the FAA; also in a comprehensive advisory circular, (AC) 120-68C, Pilot Records Improvement Act of 1996, now in its fourth revision. That advisory circular is a complete how-to-do-it manual containing the Act as revised by various amendments, standard forms for use by the public, and a wealth of information on how to comply with the letter of the law together with its safety intent.

For the pilot and air carrier alike, it is extremely important to be fully informed on this specific aspect of aviation employment. To assist both, there is an abundance of information on the FAA's PRIA Web site, <www.faa.gov/avr/afs/pria/>, including a link to the most recent version of Advisory Circular (AC) 120-68, as well as a series of commonly asked questions with answers, related definitions, and many other useful topics.

Where do we go from here?

In August 2002, the United States General Accounting Office (GAO) completed a review of PRIA, including general effectiveness of the Act, policies, procedures, and requests completed by the air carriers. The results will be used to promote greater awareness of and compliance with PRIA, to clarify certain points that have been left unanswered, and to reinforce the importance of PRIA within the FAA and to all air carriers. The advisory circular has also been updated, and the records request forms have been revised.

One very important area that needed attention was to ensure that FAA aviation safety inspectors, from their respective FSDOs, are knowledgeable and well-trained concerning PRIA. As in other areas, the inspector continues to be the primary interface with the aviation public. This includes making sure that their assigned air carriers are fully aware of PRIA, that they are complying with its requirements, and that they are prepared for possible enforcement actions for noncompliance on the part of the air carrier.

Another area of primary importance was to clarify the procedures concerning how to handle records problems if they arise. According to the law (44703(h)(9), before making a final hiring decision, the air carrier shall provide the individual pilot with a reasonable opportunity to submit written comments to correct any inaccuracies contained in their pilot records. In order for this to happen, the following steps should be followed:

1. Pilots should always request copies of all PRIA records for their personal review, to ensure that they are aware of which records are being used for evaluation.
2. Ideally, the pilot's records should be corrected before applying to a new employer. Under the law, (44703(h)(10), a pilot, who is or was employed by an air carrier, has the statutory right to review any or all of their records listed under paragraph (44703(h)(1)(b) of the statute. The air carrier must make those records available to the pilot within a reasonable time, but not later than 30 days

from the date of the written request from the pilot. Any errors, such as an omitted entry or a record that the pilot believes to be incorrect, unjust, incomplete, or even malicious, should be brought to the attention of the air carrier by submitting a written statement describing the error, and request that the records be corrected.

3. If an error is discovered in the copy of records requested by the pilot, which should be identical to the copy sent to the requesting air carrier, the pilot should submit a written statement to the hiring air carrier describing the error along with any documentation the pilot may have that disputes the error. Remember, under the law, the hiring air carrier is required to provide the individual pilot with a reasonable opportunity to submit written comments to correct any inaccuracies contained in their pilot records.

As one can see, it goes without saying that both pilots and air carriers will always be well served by a solid knowledge of PRIA and how to make it work for you.

The dawn of a new century, with its call for improved safety procedures and security awareness, has placed many new challenges and requirements at our doorstep. PRIA will continue to become more important as time passes. The aviation world will be much safer, and the flying public will be better served by the efforts of many dedicated FAA employees as they work to bring about a better system. The Pilot Records Improvement Act of 1996 is a perfect example of our working together as we respond to "A 'HIRE' CALLING."

John Ryan is with the Flight Standards' Aviation Data System Branch at the Mike Monroney Aeronautical Center in Oklahoma City, OK. He is a commercial pilot and holds flight and ground instructor certificates.

PILOT RECORDS IMPROVEMENT ACT QUALITY STATEMENT

It is the goal of AFS-620 (PRIA) to enhance the safety of the air carrier community and the general public by providing our customers with a quality product and a high level of personal service within the framework of our regulatory responsibilities.

- We continually provide our customers, the air carrier community, with an accurate and timely pilot profile letter for the purpose of fulfilling their required FAA pilot background checks. Our commitment is to complete all pilot profile letters and return them to the customer within two working days of receipt of the request.

- We strive to meet or exceed our customers' needs and their expectations of a responsive government agency. We accomplish this by using the most efficient means available to us: phone, fax, letter, or email, to maintain a positive and productive working relationship with the customer. This assists them in better understanding the PRIA law, and provides them with the means to correctly submit a PRIA request.

- We are committed to continually evaluate our work procedure, resulting in time savings and system improvements. All AFS-620 (PRIA) employees are included in this process, utilizing their skills and experience in support of our mission.

The PRIA Team members are (left to right) John Ryan, Diane Irick, and Vickie Lynn

Riveting: Science or Art?

by H. Dean Chamberlain

H. Dean Chamberlain photo

In the era of high-tech composite aircraft and space age Kevlar' and carbon fiber structures, the lonely, unappreciated rivet still plays an important role in aviation. The question is, when was the last time you really looked at a rivet? Do you ever remember preflighting one? After all, there is no nut to come loose, or safety wire to break, or cotter pin to fall out. Rivets are just rivets. Right? Wrong!

With many general aviation aircraft approaching more than 25 plus years of service, proper maintenance and repair are important for continued airworthiness. Good sheet metal work, including riveting, becomes even more critical in aging aircraft as these aircraft become more susceptible to corrosion, cracks, and metal fatigue.

Although rivets are not rocket science, some basic mathematics and knowledge of science are required to install them. Riveting is also an art as I recently learned. You might say it was a "riveting" experience. By understanding how rivets are installed, you can learn what is a good rivet job and what isn't. This will give you an idea about how well your own aircraft is assembled, and an idea of the quality of any repairs.

Installing rivets involves two distinct actions. One is the proper selection of the rivet to be installed. The second is the proper methodology. This includes mechanical skills and a certain amount of ability. Although this article is a general review of riveting, any riveting done on certificated aircraft implies that the person doing the work has the appropriate certificates (if required), the training, and the supervision necessary for working on certificated aircraft.

When you are building or repairing a metal aircraft, the question of how to join two pieces of metal or material is one of the first decisions the designer, builder, or maintainer has to answer. Common methods of joining anything together include nuts and bolts, screws, and rivets. A key element in this decision is how often the parts must be taken apart. If you need to separate the two pieces of metal frequently, you probably would want to use a bolt and nut or possibly a screw. For a more permanent attachment or connection, you might want to use a rivet. The reason is highlighted in Webster's Nineth New Collegiate Dictionary which defines a rivet by saying "a headed pin or bolt of metal used for uniting two or more pieces by passing the shank through a hole in each piece and then beating or pressing down the plain end so as to make a second head." As you can see, once a beaten (driven) or pressed second head is formed on a rivet, a rivet is not something you can easily remove and replace.

In most cases, the question of how to join two or more pieces of metal has been determined by the manufacturer. You simply follow the aircraft's parts manual or construction or maintenance manual or engineering blueprints, if available. Then you use the same materials the manufacturer used in making the aircraft or as recommended by the manufacturer. In many cases, the manufacturer's repair manuals also tell how to repair the aircraft. Where life gets interesting is where the manufacturer has not published data for a repair.

In that case, a person can check for "approved data" in other sources. One source is the FAA's various advisory circulars or manuals.

Rivets are used in many aircraft because they are cheap, work well, and are semi-permanent in many applications. Because of these factors, rivets are the fastener of choice in many metal aircraft repairs. There are many types of rivets and detailed repair instructions for repairing anything from a simple hole in sheet metal to repairing critical structures. If repaired improperly, they could lead to catastrophic airframe failure. This article is only going to use a simple repair to highlight basic rivet procedures. Complete details with illustrations are contained in FAA Advisory Circular 43-13-1B, Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair. The AC is approved data for minor repairs, if the conditions listed on the first page of the AC under the "Purpose" paragraph are met.

The basic science is the calcula-

tion of what kind of rivet to use and how strong should it be. Yes, rivet strength is one of the most important factors in repairing something. Many people may be surprised to learn that an aircraft repair can be too strong. For example, the original engineering of the aircraft may have called for a specified amount of flexing in the part. If a repair to that part exceeds the strength or rigidity required to permit that flexing, then the part may fail because it is now stronger or more rigid than the original design requirements. Or other parts may fail when the "overbuilt" part transmits too much energy to them. As FAA Advisory Circular 43-13-1B states, "Aircraft principal structural elements (PSE) and joints are designed to carry loads by distributing them as stresses. The elements and joints as originally fabricated are strong enough to resist these stresses and must remain so after any repair." The AC then goes on to say, "All-metal aircraft are made of very thin sheet metal, and it is possible to restore the strength of the skin without restoring its rigidity. All repairs should be made using the same type and thickness of material that was used in the original structure. If the original skin had corrugations or flanges for rigidity, these must be preserved and strengthened. If a flange or corrugation is dented or cracked, the material loses much of its rigidity, and it must be repaired in such a way that will restore its rigidity, stiffness, and strength."

So how does one learn how to design a correct repair? The first step is to check for any aircraft data or engineering data for the aircraft. If that fails, you can contact the manufacturer, a properly certified engineering representative, an FAA certificated airframe mechanic, or an FAA airworthiness safety inspector for advice. You can also check FAA published data such as advisory circulars, appropriate airworthiness and design regulations, and commercial manuals for repair data. If you are an FAA certificated airframe technician, you learned how to rivet as part of your initial training, so you should know where to find data for making riveted repairs. When data is not available, particularly for older aircraft where the manufacturer no longer is in business, the current version of FAA Advisory Circular 43-13 is the textbook on aircraft repair, including information and standards for riveting. Aircraft type clubs for specific makes and models of aircraft are great sources of information for older aircraft. The Internet is one of the best ways to locate such aircraft type clubs.

Riveting also means drilling the properly sized hole and, if removing a rivet, following the proper procedures. AC 43-13 explains in detail why you must drill the proper size hole when installing new rivets and why it is important to avoid damaging or making a rivet hole larger when removing a rivet. If you make or find a damaged or oversized hole, the AC also tells you what you must do. Did you know rivets expand to fill the hole when installed? The AC also explains why rivets should fail before they can cause the underlying metal to fail. The basic rule is the properly installed rivet should fail before the underlying metal rips. Rivets are easier and cheaper to replace than the underlying metal. This requirement sets the maximum strength for a rivet and a repair. Too strong a rivet and layout and the underlying metal fails, too weak a rivet and layout and the joint fails.

So how do you determine the correct strength of rivets?

First, you have to select the right type of metal rivet. According to AC 43-13-1B, in aircraft manufacturing and repair, the most common rivets are standard solid-shank aluminum rivets with a universal head. These can be used for both interior and exterior applications. The AC says MS20470 is the standard protruding head rivet in the United States. The standard for countersunk head rivets is the MS20426 100-degree countersunk rivet. Countersunk rivets are used to provide a smooth aerodynamic surface and for where a smooth finish is required.

For those not familiar with rivet nomenclature, the type of rivet as well as the special markings on AN-type aircraft solid head rivets identifies the rivet by type and size. AC 43.13-1B lists the following example of identification marking of a rivet. The part number of a rivet is MS20470AD3-5. The MS in the example means military standard number. The 20470 is a universal head rivet. The AD shows it is made out of 2117-T aluminum alloy. The 3 shows it is 3/32nd inches in diameter, and the 5 shows it is 5/16ths of an inch in length. The coded head marking for this rivet has a dimpled dot on it. The heads of rivets are marked or coded to indicate the type of metal in the rivet. The AC shows the head marks used for the most common rivets.

One important benefit of aluminum rivets installed in aluminum aircraft is that similar types of metals in contact with each other reduces the risk of galvanic conductivity between the two metals when wet. This is a fancy way of explaining the risk of corrosion between two aluminum metals. Similar metals reduce the risk of corrosion between the rivet and adjacent metal. If the two were dissimilar metals, you run the risk of localized corrosion where the rivet penetrates the joint. Such corrosion would eventually cause the rivet to fail thereby weakening the joint or destroying the underlining metal. This is also why it is a good idea if you know how to tell if a rivet has any corrosion developing under its protective paint.

Based upon approved data or the recommendations made in the AC, you select the type of rivet material. How do you know which style of rivet to use once you select its metal type? This is where things get interesting. Let's assume you have made the choice between the need for a flush mounted rivet and a protruding head rivet. Remember, the AC says, "Replace rivets with those of the same size and strength whenever possible." That choice also determines how you drill and finish the holes required for the rivets. For example, flush mounted rivets require the correct type of countersunk hole. Remember when installing countersunk rivets, the main portion of its body is below the

surface level of the metal it is installed in. As a result, countersunk holes have their own standards for strength and installation requirements. The trade off for using countersunk rivets is the reduced drag involved because there are no rivet heads sticking up in the airflow. The downside is the extra effort and work involved in installing them.

That is why in most low-speed aircraft the common, universal-protruding head rivet is generally used. This type of rivet requires less preparation work in drilling and finishing the holes required for installing the rivets. But protruding head rivets do add extra drag to the aircraft. But normally, this should not be a factor in slower speed aircraft.

At this point, you have selected the rivet material, aluminum, and the design, the universal-protruding head. Although some special riveting applications may require special processing or handling techniques, AC 43.13-1B states the most common aluminum aircraft rivet can be used as is.

Since the basic purpose of a rivet is to hold at least two pieces of material together, you want to make sure the rivet is strong enough and installed properly to meet its design purpose. One way to ensure this is to follow the recommendations listed in aircraft repair data, the aircraft construction data, AC 43.13-1B, or data provided by the rivet manufacturer.

So much for the bureaucratic disclaimers, do you know why the mechanic who worked on your aircraft used a ring of rivets on your last repair? Why not an X design or some other design? Why a design at all? It all goes back to basic math and science. You have a hole or damage in some sheet metal. You want to repair it. You know the type of sheet metal involved and its thickness. Tables listed in the AC provide the data needed to determine the number of rivets required based upon the permissible strength of the proposed repair. For example, a certain type of repair may be rated at 70 percent of the base metal strength. Using this information, the number of rivets required can be determined for that specific repair. In rivets, you trade strength for quantity. You can use fewer large and thereby stronger rivets or more smaller but weaker rivets.

Then the guidelines specify how the rivets are to be laid out. There are minimum distances from the edge of a sheet of metal to the center of the rivet hole. Then there are minimum and maximum recommended spacing distances between rivet centers. Offsetting adjoining rivets makes the repair stronger than if the rivets are placed side by side. Offsetting rows of rivets minimizes the lost of strength of the base material in closely spaced rivets compared to adjoining rivets.

In some rivet layouts, such as circles, the installation data requires that specified angles be maintained between the rivets. So not only do you have to understand basic math and enough science to understand the metal and design strength requirements used in the job, but you need a minimum understanding of geometry and layout. All of which must be understood before you drill your first installation hole or insert your first rivet.

THE INSTALLATION

Once you have made all of the selection decisions, laid out your work, and started drilling the correctly sized holes, you need a means of attaching or holding the metal together so you can complete the job. One of the tools widely used in industry is the trademarked sheet metal holder called a Cleco™. A Cleco™, a small, spring-loaded clamp, or similar tool is inserted into a rivet hole between two metal sheets by a special tool that looks somewhat like a pair of pliers. The spring loaded Cleco™ has an expandable tip that locks itself into the hole when pressure is released by the insertion pliers. The special pair of pliers compresses the Cleco's™ spring, which allows the tip to be extended and inserted and later removed from the hole. In a major job, you can have dozens or hundreds of Clecos™ holding your sheet metal together. During the riveting process, you remove a Cleco™ and install the rivet, and you go on to the next Cleco™. There are different sizes of Clecos™ for different size rivet holes. Each type of standard Cleco™ fits a specific sized hole. Normally each size of Cleco™ is color coded for ease of use. There are several types of devises used to hold material together. Clamps and special long-reach Clecos™ are used when needed. The important thing is to ensure that all of the holes in both sheets of metal are in alignment and that the parts are tightly held together.

As we said in starting this article, riveting is not rocket science, but, like many things in aviation, it is easier said than done. There is a certain art to making a good rivet head. A standard solid-shaft rivet consists of a factory-formed head and a shaft of a given diameter and length that you either drive with an air-powered rivet gun to form the second rivet head or "shop head" using the correct rivet set, or you can use a squeeze-type riveting tool to compress the rivet and form a second rivet head. A correctly sized rivet set's "face" should slightly exceed the "face" of the rivet to avoid damaging the factory-formed head of the rivet. So far, so good.

The AC says a good rivet is one that meets the standards shown in the AC. Sounds simple enough. You just have to look at the illustrations in the AC and match the work. But like trying to make consistently good landings, it takes practice to drive consistently good rivets. Generally speaking, a rivet is properly formed when the thickness of the formed head or "shop head" is equal to a minimum of one half of the diameter of the rivet and the width of that formed head is a minimum of one and a half diameters. The formed head must be vertical and centered on the center of the rivet. The rivet or surrounding metal cannot be damaged or the rivet too loose or too tight in the hole. For example, a "smiley" is great on a T-shirt, but one is bad on a rivet or surrounding surface. A smiley is where the riveting set cuts either the rivet or underlying metal and forms what looks like a smile or semi-circular cut in the rivet or metal.

Common names given to riveting problems include rivet driven at a slant, dolly head at a slant, one side of the rivet is flat, body of rivet too short, rivet not pulled tight or metal plates not closed, rivet too tight or metal plates bulged because of poor fit, riveting tool damages metal, or rivet head cracked because the rivet was too hard when driven. See figure 4-6.

In reviewing this article, one FAA airworthiness inspector wanted me to clarify why I said in one part of the article a rivet should be tight and then in the above paragraph, I said one of the possible riveting problems was it could be too tight. The answer is, if you are joining two pieces of metal together, you want the metal to be riveted firmly together, but you don't want the rivet to be so driven that it causes the metal surrounding the rivet to buckle or bulge.

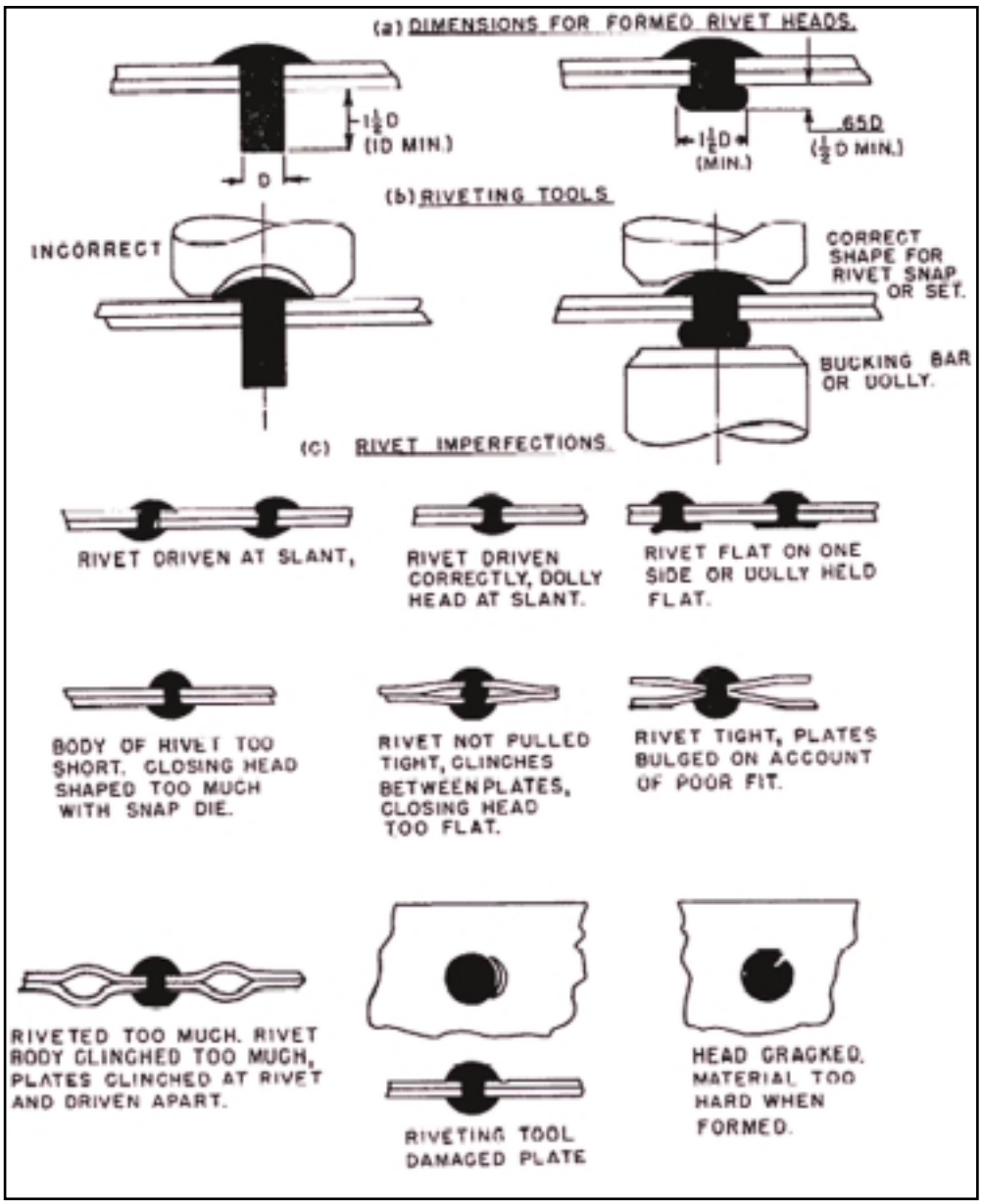
Although you can buy small gauges to check the rivet for the proper thickness and width, experienced riveters can judge a good rivet by sight. If it is a bad rivet, they drill it out and replace it using the procedure outlined in the AC. There is even an informal system of codes or taps used by some riveters when they cannot see each other such as when working on large sheets of metal or inside bulkheads, etc. One signal or tap tells the riveter or person with the rivet gun the other person is ready to buck or hold the bucking bar or dolly against the rivet. As the rivet is bucked or driven against the bucking bar or dolly by the rivet gun, a formed head or shop head is formed on the end of the rivet protruding through the hole. Then there is another signal to stop riveting when the proper sized head is formed. There is also a signal that the rivet was okay.

Although we have been talking about basic riveting in aircraft construction and repair, the rivet was an important historical symbol in American culture.

During World War II, one of the famous American war symbols from that era was "Rosie the Riveter." Rosie the Riveter represented the thousands of women who went into the defense factories to build aircraft, ships, and equipment for the war. The millions of rivets they drove to make the equipment needed to win WWII were vital to winning that conflict and marked a significant change in America society.

From its initial development to today's aerospace use, the simple rivet continues to play an important role in joining not only sheet metal together, but also an American cultural revolution that dates back to WWII. The mothers and grandmothers of many of today's pilots and mechanics helped win a war with the simple, unappreciated rivet.

Figure 4-6 from AC 43.13-1B Riveting practice and rivet imperfections.



N34 Flies Again

by Paul Turk

A little bit of almost-buried treasure has been discovered out on the plains, and it's been cleaned up, fixed up, and repainted for display all over the country starting in July as part of the nation's Centennial of Flight observance.

It's N34, the last DC3 operated by the Federal Aviation Administration (FAA), and it will be appearing in skies all over America this summer and fall to help mark 100 years of powered flight.

Maybe "discovered" isn't the right word, because most of the FAA's family knew exactly where to look for N34—Hangar 10 at the FAA's Mike Monroney Aeronautical Center on Oklahoma City's Will Rogers Airport. The 58-year old DC3 is the last of 60 of that venerable type that once was the backbone of the FAA's Flight Inspection fleet. It's been stored there since it was taken out of service in 1993, awaiting transfer to a museum.

But it's been a careful kind of storage—under cover, kept clean, rolled out at least once as a static display for a show at the airport—to help preserve it until the museum was ready to receive it. That's why using N34 seemed a natural when FAA began to look for ways to help celebrate the Centennial of Flight. After all, the FAA and its predecessors have been around since 1926, more than three quarters of the time since the Wright brothers made the first sustained, heavier-than-air, controlled, powered flight in December 1903. The agency has been a fixture and a leader in the world of flight for all its existence.

"N34 really is a symbol for all the Federal Aviation Administration," said FAA Administrator Marion Blakey. "Our mission is to operate the best and the safest airspace system anywhere, from air traffic control to regulation and certification of pilots and aircraft, everything we do. N34 operated in that airspace system, helped make sure it operated properly and safely, and provided reliable service for all its years in FAA colors."

Yes, N34 was a natural for the celebration, but would it fly again? Could the FAA support it with crews, maintenance, fuel, and all the other requirements that go with putting a large, vintage aircraft on the airshow circuit? Would the museum go along? How about the National Trust for Historic Preservation, since N34 is on its list? The answers, at least so far, are all "yes, oh yes!"

The aircraft was built in 1945 at the Douglas Aircraft plant at Tinker Air Force Base, Oklahoma City. It was accepted by the U.S. Navy as an R4D-7 and was flown to the Naval Air Station, Clinton, OK, for its first official duty as a Navy transport. In 1963, the plane was transferred to the Federal Aviation Agency (as the FAA was then called) along with 16 other DC3s to flight check the accuracy of navigational aids in the National Airspace System. On July 12, 1963, it was given FAA Serial Number 33359. Eventually, the plane was assigned the civil registration number N34.

The FAA's Aviation System Standards operates the agency's fleet of jets and turboprops used to inspect electronic aids to navigation. Flight check was N34's role from the mid-1950s to the mid-1980s when it was retired the first time. After 23 years of service with the FAA, N34 was to be declared surplus. However, then-administrator the late Donald D. Engen agreed with Aviation System Standards employees at the Mike Monroney Aeronautical Center in Oklahoma City, who wanted to preserve the plane for its historical value. On March 29, 1985, Engen ordered restoration of the aircraft to the original colors of the Civil Aeronautics Administration (CAA), a predecessor of the FAA. N34 was put to work as a goodwill ambassador, an educational resource, and a visible reminder of the FAA's role in aviation as it appeared at airshows and other events around the country. That assignment ended in 1993 and N34 was scheduled for non-flying retirement to the Omniplex Museum in Oklahoma City.

A decade later, with N34 still stored in Hangar 10, FAA officials decided it might be worth it to see if N34 could do another "farewell tour" to take part in the Centennial of Flight. FAA staffers and mechanics inspected the airplane and found it still in good working order. The port engine had only 300 hours on it; the starboard, only 30 hours. The fabric-covered wing and tail control surfaces (stored for some time in the aircraft cabin) easily passed their checks.

N34 was moved from the hangar in February and the engines were started. They ran beautifully. The props were removed and overhauled, as were the carburetors. Other maintenance brought N34 into compliance with current Airworthiness Directives and other requirements. Encouraged, FAA employees prepared the plane for a flight to Basler Aviation in Oshkosh for maintenance, a formal airworthiness inspection, and a new paint job as a flight inspection aircraft operated by FAA's predecessor agency, the Civil Aeronautics Administration. The same livery was used during N34's prior life as a show airplane, and the display agreement with the museum calls for the airplane to remain in that livery

On a bright morning in March, with cameras whirring, N34 was towed from Hangar 10. Its engines turned over in sequence, each emitting that classic Pratt & Whitney starter whine, followed by a cough, a few balls of exhaust smoke and the roar of a radial engine running on all

nine cylinders. With fanfare and a small flag waving from the portside sliding window, N34 moved majestically to the runway and accelerated southward, lifting off and turning to port. Witnesses suggested there wasn't a dry eye on the tarmac on the FAA side of the field.

It turned out to be a very short flight. As N34 turned north to pass Tinker Air Force Base (where it was built and delivered to the Navy as an R4D-7 in May 1945), the starboard engine started to run rough and oil pressure dropped to zero. The crew shut the engine down—the 30-hour engine, of course—feathered the prop and returned to Hangar 10.

The busted engine could have slammed the hangar door shut forever, but things had come too far for the FAA and Flight Inspection to back down now. The engine would be taken down, rebuilt, and reinstalled, and, with considerably less commotion, N34 was redispatched to Basler for inspection and paint.

"It's a great airplane and it's in great shape," said Thomas Accardi, the Program Director for Aviation System Standards, to whom Flight Inspection reports. "The DC3 is the most-produced transport in American history and one of the most important aircraft ever designed and built and N34 is one of the finest examples still flying. I'm so glad we can honor the type, the people who designed, built and used it to launched the finest air transportation system in the world." Flight Inspection, as always, will operate N34 for the FAA as it makes its rounds.

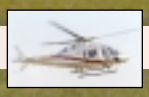
When it emerges in late June, it will go to Washington, DC, for ceremonies marking its return to service, to Dayton for Inventing Flight, then back to Oshkosh for EAA AirVenture 2003.

In September, N34 will be one of the "modern" aircraft taking part in the National Air Tour organized by the Aviation Foundation of America. For more than two weeks, N34 and other vintage aircraft will fly around the country recreating an event last held 73 years ago. In the late 1920s, Ford Motor Company organized "air tours," traveling exhibitions of aircraft designed to boost interest in the safety, reliability, and convenience of commercial aviation. The latest version of the event was planned in 1931, but never executed because of the Great Depression.

The Foundation researched the air tours and the planning for 1931 to recreate the phantom route that will be flown September 8-24 by about 30 aircraft, including N34. The tour will start and finish in Dearborn (Detroit), Michigan via Chicago; Minneapolis; Wichita; Fort Worth; Atlanta; Kitty Hawk; Washington, DC; and Dayton, with plenty of other stops along the way. For more information, see the tour's website at <www.NationalAirTour.org>.

Throughout 2003, N34 will serve as a highly visible reminder of the FAA's invaluable contributions to both domestic and international aviation. Plans call for N34 to appear at other selected air shows around the country during the summer and fall (see next page), and N34 will cap its part in the Centennial of Flight observance with an appearance at the First Flight Airport at Kitty Hawk, December 17.

Paul Turk is the manager of FAA's field public affairs operations. He is also a commercial pilot with ASEL, AMEL, and instrument ratings.



Schedule of Appearances

July 7*	Return to Service Ceremonies, Hangar 6, Washington, DC
July 17-20	Inventing Flight, Dayton, OH
July 29-Aug. 3	EAA Air Venture 2003, Oshkosh, WI
Aug 30-31	Cleveland National Air Show, Ohio
Sept. 8-24	National Air Tour
Oct. 4-5	Aerospace America 2003, Oklahoma City, OK
Oct. 18-19*	Kitty Hawk, NC, to Miramar, CA
Oct. 25-26*	Edwards AFB Air Show, CA
Nov. 8-9*	Wings and Waves, Daytona Beach, FL
Dec. 17-18	Centennial of Flight, Kitty Hawk, NC

* Tentative or not confirmed

EAA AirVENTURE® Oshkosh 2003

story and photos by H. Dean Chamberlain

The dates for this year's Experimental Aircraft Association's (EAA) annual fly-in and convention, EAA AirVenture® Oshkosh 2003 are July 29 through August 4. The annual event is held on the Wittman Regional Airport in Oshkosh, Wisconsin

NOTAM DATA

Anyone planning on flying to EAA AirVenture Oshkosh or within that general part of Wisconsin and neighboring states from July 26 until August 5 needs to review the Notice to Airmen (NOTAM) that outlines the special flight procedures for the Oshkosh area during this period. The NOTAM is in effect from 1100Z hours on the July 26 until 1100Z hours on August 5. The effective date of the NOTAM is before the opening date of the EAA AirVenture Oshkosh fly-in. You can call EAA at 1-800-564-6322 for a free copy of the NOTAM. You can also download a copy of the booklet at <www.faa.gov/NTAP> or <www.airventure.org> or <www.eaa.org>.

The EAA AirVenture Oshkosh 2003 NOTAM does not supercede restrictions in any FDC NOTAMs. Please check for current NOTAM's by calling Flight Service at 1-800-WX-Brief. In light of events since September 11, everyone planning on flying to Oshkosh should check with Flight Service for any airspace changes in your immediate area as well as en route to Oshkosh.

The EAA AirVenture Oshkosh 2003 NOTAM highlights the following changes for this year. If some of the following terms sound confusing, then you need to review the complete NOTAM for details.

- Aircraft manufactured in 1967 are now allowed in Vintage (Contemporary class) areas.
- The Warbird/High Performance Arrivals minimum speed has been changed to 130 knots.
- A Blue dot has been added to Runway 18R.
- A Yellow flow left base entry procedure has been established for Runway 27.

You need to understand the various entry and exit procedures outlined in the NOTAM before you get to the NOTAM's effective area. The procedures are based upon type of aircraft—ultralight, helicopter, airplane, and warbirds, for example—as well as type of flight plan, VFR or IFR. You don't want to be in one of the biggest mixes of different types of aircraft in the world and not know what is expected of you and what you can expect other pilots to do. You need to review the routing and operating procedures in the NOTAM for your specific type of aircraft. As the NOTAM states, "Pilots preparing to depart for AirVenture are expected to possess a copy of this NOTAM, become familiar with these arrival procedures, and

have them readily available for quick reference before arriving at Ripon." The NOTAM also reminds you to be alert for last minute changes to previously issued clearances or anticipated procedures.

IFR FLIGHT PROCEDURES

IFR flights need to carefully review the section for IFR filing. An IFR slot reservation system will be in effect as outlined in the NOTAM.

All IFR flights—except turbojet, turboprop, and air carrier aircraft—should be prepared to cancel their IFR flight plan 60 NM from Oshkosh when the ceiling and visibility at Oshkosh is reported at or above 4,500 feet and the visibility is greater than five (5) miles.

Chicago Center will not issue airborne IFR clearances within 60 NM of Oshkosh at or below 8,000 MSL.

LAKE REPORTING SERVICE

Pilots planning on flying over Lake Michigan should review the Lake Reporting Service (LRS) outlined in the NOTAM and the *Aeronautical Information Manual* (AIM) paragraph 4-1-20e. Similar to normal flight plans, except LRS flight plans use shoreline crossing points for departure and arrival points, the LRS requirements include making radio contact every 10 minutes. If contact is not made after 15 minutes, search and rescue is launched for you. The NOTAM contains complete instructions and how to file a LRS flight plan. A lake reporting flight plan is in addition to your regular VFR flight plan. Since you can be on a VFR and LRS flight plan at the same time, when closing your flight plan, you need to make sure Flight Service is closing the right flight plan.

PREFLIGHT PLANNING SUGGESTIONS

The NOTAMs Preflight Planning section reminds everyone planning on landing at Oshkosh to plan for an alternate airfield such as Appleton (ATW), Fond du Lac (FLD), or Green Bay (GRB) in case you can't get into Oshkosh. Parking and scheduled transportation are available from these airports. During the period of this NOTAM, a temporary control tower will be operational at Fond du Lac.

If you are inbound to Oshkosh and have to divert to one of the above fields, you have to remember to modify your VFR flight plan according. Reasons for having to divert could be an accident at Oshkosh or no available aircraft parking, the field is closed for the air show, or the field is closed for the night.

Oshkosh is closed for arriving traffic from 8 pm CDT until 7 am CDT from July 26 though the end of the fly-in.

AIRSHOW HOURS AND AIRSPACE

The airport is also closed during the airshow. Times and dates for the daily airshow are Tuesday, July 29 through Sunday August 3 from 1500-1830 hours CDT. Monday, August 4 the time is from 1400-1700 hours CDT.

The airshow demonstration area is that airspace within a five (5) NM radius around Wittman Regional Airport from the surface to 12,000 feet MSL.

Normally, 60 minutes after the airshow, inbound aircraft are permitted to land. You need to monitor the ATIS for current information.

AIRCRAFT SIGNS AND PARKING UPDATES

If you are landing at Oshkosh, you need to make a sign to display the code for your intended parking or camping area. The light-colored signs with dark letters should be readable from 50 feet away. The parking and camping codes are: HBC for Homebuilt Camping; VAC for Vintage Aircraft Camping; GAC for General Aviation Camping; HBP for Homebuilt Parking; VAP for Vintage Aircraft Parking; GAP for General Aviation Parking; WB for Warbird Area; FBO for Basier or Orion FBO Ramp (with prior permission); and SP for Seaplane Area (amphibian). You will also need a similar sign with either VFR or IFR depending upon your type of departure.

For the latest parking update, you can check a telephone recording at (920) 230-7820 or the Internet at <www.airventure.org/aircraft/parking_status.asp>. The OSH Arrival ATIS (125.9) will also have current parking information.

VFR PROCEDURES FOR VFR AND IFR TRAFFIC

Since the primary VFR route into Wittman Regional Airport during the effective times of the NOTAM is from Ripon, Wisconsin (Chicago Sectional) to Fisk then to Oshkosh, every pilot flying into Oshkosh needs to review the routes, altitudes, and any special handing procedures such as how to hold. The NOTAM shows recommended routes for VFR traffic that avoids high-density airports en route to Ripon. One shows how to avoid the Green Bay Class C and the Appleton Class D airspaces. Another route shows how to avoid the Madison, Wisconsin, Class C airspace. The third recommended route shows how to avoid the various classes of airspace around Milwaukee. The fourth route shows how to avoid Volk Field and the Volk Class D airspace.

Everyone is reminded that these procedures are subject to last minute changes.

CANADIAN EXPERIMENTAL AMATEUR-BUILT AIRCRAFT

The NOTAM outlines which types of Canadian registered experimental aircraft can obtain a FAA Special Flight Authorization (SFA) to operate in the United States. The NOTAM provides complete details on the requirements for obtaining an SFA.

OSHKOSH NO-RADIO PROCEDURES

The NOTAM also explains the no-radio procedures for flying into Oshkosh. As the NOTAM states, pilots are encouraged to use radios, in-

cluding handheld, to enhance safety.

FLIGHT SERVICE INFORMATION AND HELPFUL HINTS

The NOTAM reminds pilots of the following:

- IFR flight plans can be filed up to 22 hours in advance. There is no time limit for VFR flight plans.
- Flight plans should be filed as far in advance as possible.
- The AFSS telephone number is 1-800-992-7433 (24 hours).
- The Oshkosh Temporary AFSS in the FAA Safety Center is open from 0600-2000 CDT daily for walk-in service.
- Inbound flights should add 30 minutes to their ETE.
- You should not file for multiple stops. Flight plans should be filed for each stop.
- VFR flights should be cancelled while approaching destination. Parking delays could exceed 45 minutes.
- ATC does not cancel VFR flight plans. VFR pilots should cancel their flight plans with a Flight Service Station (FSS).
- When contacting FSS, you need to provide complete aircraft call sign, general location, and the frequency you are using.
- Due to frequency congestion, air filing of flight plans between 0600-2100 CDT is discouraged.
- Pilots are asked to avoid using Oshkosh (OSH) 122.25 and Fond du Lac (FLD) 122.5 for weather information.
- There will be a North Briefing Annex in a mobile trailer across from the registration/tie-downs building at the North Forty. The Annex provides an abbreviated departure briefing without pilots having to enter the paid admissions area. Flight plans can be filed at the Annex. Hours are 0700-1500 CDT daily beginning on July 29.
- A new South Briefing Annex also in a mobile trailer will be located on the service road north of the Ultralight Field. The hours and services are the same as the North Briefing Annex.
- Chicago Center will not provide traffic advisories within 60 NM of Oshkosh.

HELP PROTECT YOUR FELLOW PILOT AND YOURSELF

Pilots are asked to periodically monitor 121.5 MHz en route to and from Oshkosh to check for activated ELT's. If the distinctive sweep tone is heard, pilots should contact the nearest AFSS or ATC facility and report the reception.

Before you shut down your aircraft's radio, you should check 121.5 MHz to see if your ELT is transmitting.

Considering the thousands of aircraft operating to and from the Oshkosh area, there is a chance that someone's ELT will active. It is important that any inadvertent ELT activation be discovered quickly and turned off to prevent its signal from interfering with a real emergency signal.

For more information on the special events at AirVenture Oshkosh 2003, you can check its website at <www.airventure.org>. For information about EAA, you can check its website at <www.eaa.org>.

H. Dean Chamberlain photo

AIRSHOW SURVIVAL TIPS

The following information is from the EAA AirVenture website and tells how one can prepare to survive attending AirVenture or any outdoor event and enjoy the experience. This article provides some fast and easy tips that have proven their worth over the years for AirVenture attendees. For your convenience, we've condensed them into a top 10 list for a more pleasant AirVenture experience.

Apply sunscreen: One thing is for sure: Sunscreen works. Make sure you cover exposed areas of your body with at least an SPF 15. If you bring children, don't forget to cover them as well.

Bring a pair of comfortable shoes. Take good care of your feet. Wear the most comfortable walking shoes you have. Just truckin' around the grounds can add up to several miles over the course of one day.

Wear a hat. Temperatures can range anywhere from the 60s to the 90s, but AirVenture always seems to have a stretch of very hot, humid weather. On such days, a hat can provide some protection from overheating. If, for some reason, you forget to bring one, there will be plenty of official AirVenture® 2003 hats available. (If you're watching the air show from the flight line, the back of your neck will likely be fully exposed to the afternoon sun. A bandana tucked under the back of your cap can provide an effective sun block.)

Use lip balm. Not many people think of this, but bring some Chapstick™, Blistex™, or other brand and apply often to prevent the sun from turning your lips into leather.

Wear sunglasses. A fairly obvious item on your checklist, one for which your eyes will thank you. A neck strap also comes in handy.

Check the forecast. If there's a chance of rain during the day, be prepared with a light jacket or poncho, a small umbrella, and an extra pair of socks.

Drink lots of water/bring a water bottle. Dehydration can be a problem for even the heartiest AirVenture attendees, especially on those oppressively hot afternoons. Nothing prevents dehydration as well as water, and bottled water is available at the many concession areas. You can make plenty of use of the many water fountains located throughout the grounds. Don't rely on soda pop to prevent dehydration. (Alcohol actually hastens the process.)

Organize your visit. Take advantage of all the information available before you get here. In this case, see <www.AirVenture.org>. For example, if you plan to attend some of the hundreds of forums, check out our forums schedule page that allows you to view the forum schedule by date, interest, keyword, or presenter.

Bring a camera and lots of film. Be sure to check your battery, and it's not a bad idea to have extras just to be safe. A good rule of thumb is to bring two more rolls of film than you plan to shoot. If you bring a video camera, make sure you have an extra tape and at least one fully charged spare battery.

A few don'ts:

When you're near aircraft, the rule is: "Always ask before touching." For safety's sake, eating and smoking are not allowed in the flight line or near airplanes. In fact, if you've been thinking about quitting smoking, this would be a good time to do it.

Although many have tried, it is literally impossible to see everything in one day, much less a week. Pace yourself, and focus on what really interests you.

Please remember that rules and regulations exist to ensure everyone's safety and enjoyment. If you have any questions, just ask a volunteer, without whom AirVenture would not be possible. Finally, we hope you enjoy your visit to AirVenture Oshkosh 2003. By heeding these few bits of advice, you'll be well on your way.

The "Double I?"

By Frank S. Phillips, Jr.

It's a beautiful Saturday and where am I? At the glider field, of course. Where else would I be, but doing what I love to do most? Not soaring, although that's a close second, but teaching people how to soar. Or at least teaching would-be glider pilots how to fly a glider so they can eventually soar with the birds. Teaching the art of flying a sailplane is the best way I know to keep my love of flying fresh. Flying in a direct line from point "A" to point "B" can become quite routine and very predictable—except for emergencies, of course. In fact, I have found that the more utilitarian flying is, the quicker it becomes mundane and boring. The less practical it is, that is doing it just for the fun of doing it rather than for just getting from point "A" to point "B," the more enjoyable it is. Let's face it, that's the reason most of us love to fly. We want to get up there and soar through that vast ocean of air that's punctuated with white fluffy clouds. We want to get up there so we can look down at all the funny little matchbox-sized houses and miniature cars on the ground. And we don't want to be rushed while we're doing it. We want to have time to enjoy it or, as they say, to have the time to smell the roses.

Anyway, back to reality. There I was on my day off from flying charters indulging in my weekly chance to go up in the wild blue yonder without an engine where the reward for good coordination (remember those pedals on the floor that keep the airplane from slipping or skidding in a turn) is minimum drag. In gliders and sailplanes, minimum drag means maximum flight time without the sound of a gas pump going ka-ching, ka-ching. But back to my story.

My next student strutted up to the glider, stuck out his chest, and boldly stated, "I'm a `Double I'!"

We all know exactly what he meant by "Double I" or at least every airplane pilot knows what he meant. Every airplane pilot has heard of the prestigious label that makes the ordinary instructor extraordinary. The highest of the high, the instrument instructor is the instructor who knows all and can do all. The rest of us instructors are mere mortals. We are the lowly, ordinary, basic "CFI" who can only teach primary students.

I responded with a feigned quizzical look, "Double I?" I intentionally said this with more the inflection of a question than a statement. Playing

H. Dean Chamberlain photo

the role of a naive glider instructor, I asked, "What's that?"

A look of incredulous disbelief at the implied ignorance of my question appeared on his face. When he gathered his composure, he adamantly declared, "I'm an instrument instructor!" Although he didn't say it aloud, it was easy to see that he had made an additional, although albeit silent, comment to his declaration, "You buffoon! What did you think I meant by `Double I'?"

Showing the proper deference to his status as a `Double I,' I said, "Wow!"

He smiled.

I interrupted his moment of self-satisfaction by asking, "You teach instrument flying in both helicopters and airplanes?"

A look of confusion quickly replaced his smile, "Helicopters?"

"Yeah. You said you were a `Double I.' That must mean you have both an instrument airplane and instrument helicopter rating on your flight instructor certificate. You can teach instruments in both helicopters and airplanes. Right?"

With that he could only utter a, "Huh?"

He paused a moment to absorb the information and then said, "Oh, no. I just teach instruments in airplanes."

"Where do you do your instrument instruction?"

Again another pause, "Well, I just have the rating. I haven't used it."

"Do you have your single engine instructor rating?"

"Of course, I do." He had another silent, "You buffoon," look on his face before he continued aloud, "You got to get the basic instructor rating before you can get the `Double I.'"

"Oh, I see. Where do you teach the basic stuff?"

A third pause, then, a hesitant, "Ah," followed by, "I don't really teach. I just have the ratings."

Now, the instructor came out in me. I had to find out what I was getting into going up with this guy who obviously was trying to impress me more with labels than with proficiency.

H. Dean Chamberlain photo

I asked pointedly, "Are you current in airplanes?"

A fourth pause, "Well, not really. I just wanted to see what gliding was like."

A good practice in instructing, especially when doing flight reviews or working with pilots seeking additional ratings, is to find out what the pilot's experience and currency is. It is an excellent practice and it was a good thing that I went through this little exercise. I, like most people do, often make assumptions. My experience as a pilot examiner and FAA inspector investigating accidents has taught me that assumptions most likely result in a false conclusion. If I had assumed that this guy was the cream of the crop and at the top of his proficiency by his proclamation of being a "Double I," I may have had a big surprise when we were airborne in the glider and I let him take the controls.

The so called "Double I" or, better said, the instrument airplane instructor rating is not an advanced instructor rating. It is one of only nine possible instructor ratings that may be placed on a flight instructor certificate (airplane single engine, airplane multiengine, instrument airplane, powered-lift, instrument powered-lift, rotorcraft helicopter, instrument helicopter, rotorcraft gyroplane, and glider). All nine flight instructor ratings stand independent of each other. There is no such thing as a basic instructor rating, that is, what most of us call the first flight instructor rating that most people earn—the single engine airplane rating—when they first qualify for an "initial" flight instructor certificate.

One does not have to take the test for an initial flight instructor in a single engine airplane. One may qualify for the initial flight instructor certificate with an instrument airplane rating (or an instrument helicopter rating or any of the other flight instructor ratings). For example, some years ago, a friend of mine worked for an air carrier that shut down its operations and put all the pilots out of a job. I drove my friend to his air carrier's base of operations to pick up his belongings. It was a sad moment to say the least. Once in the crew room, he introduced me as a designated pilot examiner (DPE) to several of the other pilots. One pilot asked if I could do flight instructor check rides. I said that I could. He then said that he wanted to get his flight instructor certificate (initial) and asked me where he could rent a complex airplane for the test.

I asked him why he needed a complex airplane.

He asked in response, "Don't I need one to take the test?"

I avoided his question and asked him, "Are you more current shooting instrument approaches or doing lazy eights and chandelles?"

He responded, "Of course, I'm more current shooting instrument approaches. I haven't done a lazy eight

or chandelle since I got my commercial certificate years ago. What do instrument approaches have to do with it anyway?"

"Why don't you get your instrument instructor rating first and teach instruments? You're probably far more current doing that than any pilot examiner and you've had a lot of experience teaching first officers about approaches."

He nodded in agreement and asked, "Yes, but don't I have to get the basic instructor first?"

I explained to him what I said earlier in this piece. Each rating stands alone and none of the ratings are prerequisite for any of the other ratings. I held an instrument helicopter (IH) instructor rating before I held a rotorcraft helicopter (RH) instructor rating. When I only held the IH rating, I could give instrument helicopter flight training. I could not give helicopter flight training. I would have to have had a rotorcraft helicopter instructor rating to do that. I have known many instructors that held only an instrument airplane rating on their flight instructor certificate, which leads me to point of this article, "The Double I."

Per Title 14 of the Code of Federal Regulations (14 CFR) §61.1(b)(2)(ii), *authorized instructor* means: "A person who holds a current flight instructor certificate issued under part 61 of this chapter when conducting ground or flight training in accordance with the *privileges and limitations* [emphasis added] of his or her flight instructor certificate." Flight training for certificate (for example, a private certificate), ratings (for example, an airplane single engine land rating), and most privileges (for example, complex airplanes) requires the pilot to receive flight training from an *authorized instructor* [emphasis added]. An example of this is 14 CFR §61.107: "(a) *General*. A person who applies for a private certificate must receive and log ground and flight training from an *authorized instructor* [emphasis added] on the areas of operation of this section that apply to the category and class rating sought. (b) *Areas of Operation*. (1) For an airplane category with a single-engine class rating:…" Thus, a flight instructor who holds only an instrument airplane rating on his or her flight instructor certificate is not authorized to give the flight training required by 14 CFR §61.107(b)(1)(i) through (viii) and (x) and (xi).

When the authorized instructor provides training, the instructor makes a logbook entry per 14 CFR §61.51(h) *Logging training time*. "(2) The training time must be logged in a logbook and must: … (ii) include a description of the training given, the length of the training lesson, and the authorized instructor's signature, *certificate number* [emphasis added], and certificate expiration date." Flight instructor certificates use the pilot's certificate number followed by the letters "CFI," for example, "9999999CFI." Pilots with commercial privileges for light-than-air aircraft are authorized instructors in those lighter-than-air aircraft. Their certificate number is their pilot certificate number.

I recently saw a flight instructor's business card that read, "CFII, MEI, ATP." What was the instructor saying? Was he saying that he could only teach instruments, multiengine, and ATP students? I think not. Like the instructor who sauntered up to me on the glider field that day, this instructor was saying that I should assume that he must also have an "airplane single engine" rating. That's what I did assume. But should I? In reality, I shouldn't. Does it make a difference? In reality, it may.

A quick aside, why did he list, "ATP?" Again, I think it is for the same reason that people are quick to remind you that they are a "Double I." Does an ATP certificate make any difference? To be an authorized instructor, the answer is no (except in air transportation service per 14 CFR §61.167, see below). But, in terms of experience and professionalism, it sure does. As to experience, it says that the instructor has at least 1,500 hours of flight experience, in the case of airplanes, and 1,200 hours, in the case of helicopters. As to professionalism, it says that the instructor has strived to improve his or herself by practicing and improving his or her skills to the point that he or she demonstrated the pilot proficiency skill level required to hold an airline transport pilot certificate. However, as to flight instruction privileges per 14 CFR §61.167(b), it only conveys the privilege to instruct other pilots in air transportation service. Further, per 14 CFR §61.153, an applicant for an airport transport pilot certificate or rating does not need to have flight training or an endorsement from an authorized flight instructor to take the practical test except in the case of retesting after failure per 14 CFR §61.49(a).

Back to the question of whether "CFII" and "MEI" after the endorsing instructor's certificate number in a student's logbook makes any difference? Maybe. Maybe not. As a pilot examiner testing an applicant for a private pilot certificate with an airplane single engine land rating, I look for the instructor's signature, *certificate number* [emphasis added], and expiration date. To play the game of semantics, the literal words say only *certificate number*, so he or she need only write a number. Using the earlier example of a certificate number, the instructor could put down his or her number as either 9999999 (his or her pilot certificate number) or 9999999CFI (adding the letters shown on the flight instructor certificate). In either case, I, as a pilot examiner, would rely on that entry to imply that the instructor is an "*authorized instructor*." If the person were not an authorized instructor, he or she would have made a fraudulent entry and subject him or her to prosecution under 18 U.S. Code §1001. The problem would occur when the instructor enters the number as "9999999CFII" or "9999999CIFI." Now, I may have to assume that he or she was a flight instructor with only an instrument airplane or instrument helicopter rating and that I would have to contact the instructor to verify whether he or she had an airplane single engine rating on his or her flight instructor certificate.

If the flight instructor wants to show his or her qualifications, the in-

structor should be specific to show what flight training that he or she is authorized to give. In this case, he or she could write the number as, "9999999CFI ASE" or "9999999CFI ASE/IA" to show the examiner that he or she is an authorized instructor. The "IA" is not necessary in this case, but it will show that the authorized flight instructor is also qualified to give instrument flight training.

The August 1, 2002, *Flight Instructor Airplane: Practical Test Standards* (FAA-8081-6) for airplane single and multi-engine uses the following flight instructor rating acronyms:

ASE	Airplane Single Engine
AME	Airplane Multiengine
RH	Rotorcraft Helicopter
RG	Rotorcraft Gyroplane
G	Glider
IA	Instrument Airplane
IH	Instrument Helicopter

The FAA's *Aviation Instructor's Handbook* (FAA-H-8083-9) discusses instructor professionalism in the chapter on instructor responsibilities and professionalism and states, "Any façade of instructor pretentiousness, whether real or mistakenly assumed by the student, will immediately cause the student to lose confidence in the instructor and learning will be adversely affected." All flight instructors have demonstrated instructional knowledge of the fundamentals of instructing and of technical subject areas in aviation. Each and every flight instructor has demonstrated flight procedures and maneuvers at the same level of skill as a commercial pilot while giving effective communication. There is no such thing as a basic flight instructor. Each and every flight instructor is a professional and a respected member of the aviation community no matter what rating or ratings they hold on their flight instructor certificate.

Frank Phillips is a retired FAA Aviation Safety Inspector, a designated pilot examiner, and also a lawyer.

An Afterthought

You may have surmised by the tone of my article that I don't like the expression "basic flight instructor" to describe a person who holds a flight instructor certificate with only an airplane single engine rating. I don't like that expression. Why don't I like it? I don't like it because the word "basic" connotes that it—the single engine airplane instructor rating—is the beginning step in a hierarchy of flight instructor ratings with the instrument airplane and multiengine airplane instructor ratings being more advanced or requiring a higher level of instructional skill and/or instructional privileges. Yes, there is a hierarchy of pilot certificates—student, recreational, private, commercial, and airline transport pilot—that convey more pilot privileges as one advances through the hierarchy of those certificates. And, yes, there is a hierarchy of ground instructor ratings. A person who holds a basic ground instructor rating may only provide the ground training required for the issuance of a recreational pilot certificate, private pilot certificate, or associated ratings under 14 CFR part 61. A person who holds an advanced ground instructor rating may provide the ground training for any certificate or rating under part 61. But, no, there is no such hierarchy of flight instructor ratings. Each flight instructor rating conveys privileges that are specific to and limited to that instructor rating only. One instructor rating does not convey privileges of another instructor rating.

Flight instructors are one of the most important links, if not the most important link, in the protective chain of aviation safety. Flight instructors have an immediate and direct effect on aviation safety by affecting the quality and quantity of ground and flight training, especially at the beginning of a pilot's flight training experience. According to the *Aviation Instructor's Handbook*, the principle of primacy, or the state of being first, often creates a strong, almost unshakable, impression. This means that what is taught must be taught right the first time. A student's first instructor will probably have the most significant influence over a pilot's future flight skills and safety practices. In other words, the first flight instructor is often the most important flight instructor in a pilot's life. Thus, the so-called primary instructor probably should be the best instructor the pilot has during his or her flight and ground training. There are basic elements of flight training, but there is nothing basic about teaching those skills. Good teaching is a highly skilled and advanced professional endeavor as well as an art. If anything, we should strive to ensure that the best educators teach the basic skills, judgment, and safety practices to the beginning pilot.

NOTAM

a.k.a. New Opportunities To Avoid Mistakes...on the Runway

by Inez Kennedy

Demand for aviation to perform at unprecedented levels of safety has never been higher. The NOTAM (Notices to Airmen) system is used to disseminate information on unanticipated or temporary changes to components of or hazards in the National Airspace System (NAS). Looking through the lens of runway safety, NOTAMs truly are new opportunities to avoid mistakes on the runway. The constantly changing information they provide on such things as runway closures, construction projects, runway lights out of service, and maintenance crews and equipment helps reduce the potential for human error. In particular, two types of NOTAMs, Distant NOTAMs (D NOTAMs) or Local NOTAMs (L NOTAMs), can help pilots lower their risk of being involved in a runway incursion.

D NOTAMs contain information on en route navigational aids, facilities, services, procedures, and civil public-use airports listed in the *Airport/Facility Directory*, and are widely disseminated through telecommunication. Conversely, L NOTAM information, such as taxiway closures and runway lighting, is required only to be distributed locally. At first glance, this distinction may seem inconsequential. But the risk is significant.

For example, if you were flying from Maryland to Wisconsin, and did not request L NOTAM information from the Automated Flight Service Station or Flight Service Station (AFSS/FSS) that has responsibility for the airport concerned, you would not find out about construction personnel or equipment on a runway in Wisconsin from your pre-flight briefing in Maryland. L NOTAMs are not entered into a central database. As a result, if you do not check for updated information en route, you increase your risk and the risk of others on the surface of being involved in a runway incursion.

Five Runway Safety Guidelines To Keep In Mind While Using NOTAMs:

- Obtain a complete pre-flight briefing, including all NOTAMs.
- The pilot-in-command has the primary responsibility of ensuring that all current NOTAM information is received during a pre-flight briefing.
- Automated Flight Service Station/Flight Service Station (AFSS/FSS) personnel provide D NOTAMs and L NOTAMs during standard, abbreviated, and outlook briefings, when pertinent to the flight. L NOTAMs are not available when you use Direct User Access Terminal Service (DUATS) for a pre-flight briefing.
- As noted above, L NOTAM information for non-local AFSS/FSS areas must be specifically requested directly from the AFSS/FSS that has responsibility for the airport concerned. Facility specific toll-free telephone numbers are available in the *Airport/Facility Directory* or by dialing 1-800-WX-BRIEF.
- Because NOTAM data constantly changes, pilots should contact AFSS/FSS en route to obtain updated information.

It is also important to note that the NTAP (Notices to Airmen Publication) is issued every four weeks. When NOTAMs are published, they are no longer provided during a briefing. Therefore, it becomes the responsibility of the pilot to specifically request this information. By requesting NOTAMs, the opportunity for human error decreases and the pilot makes the runway a safer place for all.

Inez Kennedy is the Air Traffic Representative (AFSS) in the FAA's Office of Runway Safety.

Aviation Maintenance Alerts

Experimental Amateur Built Aircraft

The pilot of a single engine experimental amateur built aircraft was at 2,400 feet MSL when he experienced a partial engine failure. Shortly thereafter, the engine became erratic then failed completely. The pilot landed in a soybean field. Investigation disclosed two drilled out rivet heads lodged in the fuel line that had apparently caused fuel starvation and engine stoppage. The aircraft had been in service for approximately three years. Although the source of the rivet heads is unknown, they may have inadvertently fallen into the open fuel tank filler during construction or maintenance activity. The investigator recommends that experimental aircraft builders consider installing a finger screen at the outlet of the fuel tank. The screen would catch and retain debris before it entered the fuel line. Periodic inspection and cleaning of the finger screen may eliminate debris from the tank preventing it from clogging the fuel line.

Cessna; Model 150/152; Fuel Tank Vent Installation; ATA 2810

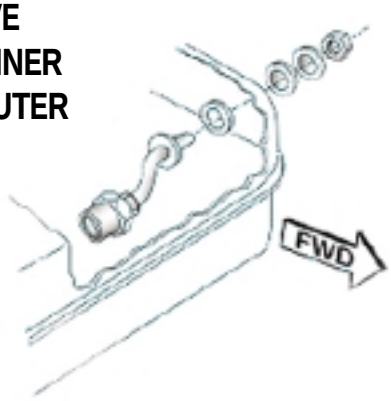
The FAA Aircraft Certification Office (ACO) located in Wichita, Kansas, provided the following article.

Recently the FAA received a Safety Recommendation applicable to the fuel tank vent installation description as shown in the maintenance manual for the Cessna Model 152 airplanes.

The picture shown in this maintenance manual can be perceived as showing the fuel tank vent line as being located toward the bottom of the fuel tank rather than toward the top as intended and also described in the written text above the suspect picture.

Since as people often say, “A picture is worth a thousand words.” Cessna has agreed to provide a change to the applicable maintenance manuals when future revisions to the manuals are initiated.

This article has been coordinated with Cessna Aircraft Company and is intended to provide early notification to these changes. (Refer to the illustration.)



TUBE FOR VENT VALVE EXTENDS INTO FUEL TANK, THEN FORWARD AND SLIGHTLY UPWARD

DETAIL A (LH TANK ONLY)

Service Difficulty Report Data

This is a selection of the reports printed in the *Aviation Maintenance Alerts*. These reports are derived from unverified information submitted by the aviation community with FAA review for accuracy.

ACFT MAKE ACFT MODEL REMARKS	ENG MAKE ENG MODEL	COMP MAKE COMP MODEL	PART NAME PART NUMBER	PART CONDITION PART LOCATION	DIFF-DATE OPERCTRL NO	TTIME TSO
BEECH B200	PWA PT6*		CONTROL 10138800511	INOPERATIVE	3/20/03 2003041000062	2579

DURING APPROACH TO LANDING AT ABQ THE GEAR WOULD NOT EXTEND IN NORMAL OPERATION. LANDING GEAR HYDRAULIC POWER PACK MOTOR WOULD RUN WHEN HANDLE IN DOWN POSITION, BUT GEAR WOULD NOT MOVE. EXTENDED GEAR WITH EMERGENCY SYSTEM. INSTALLED NEW SOLENOID VALVE AND GEAR OPERATED NORMALLY.

BELL 206L4	ALLSN 250C30	STIFFENER 206033110239	CRACKED FUSELAGE	6/21/02 2003041100152	2587

FOUND SUBJECT STIFFENER AND WEB CRACKED DURING MAINTENANCE EVENT, GAINED ACCESS AND FOUND RIGHT HAND BEAM ALSO CRACKED, BEAM AREA WAS HIDDEN UNTIL DISASSEMBLY SHOWED FURTHER DAMAGE. SUGGEST THAT BETTER ATTENTION IS PAID TO THIS AREA ON INSPECTIONS, ESPECIALLY IF HELICOPTER IS SUBJECTED TO A HARD LANDING OR IS USED FOR EXTERNAL LOAD OPERATIONS. MANUFACTURE COULD NOTIFY STIFFENER IN THE CURVED AREA TO STRENGTHEN THE ASSEMBLY.

CIRRUS SR20	SEATBELT 5049074058013	INOPERATIVE COCKPIT	3/6/03 2003041000063	

THIS ISSUE INVOLVES SEATBELTS INSTALLED ON AIRCRAFT. THE TENSIONER BAR ON LAP BELT WILL NOT HOLD TENSION ON BELTS ONCE TIGHTENED, BELTS ARE LOOSENING DUE TO VIBRATION IN FLIGHT. THE TENSION BAR IS SMOOTH, SO IT IS NOT HOLDING TENSION. REDESIGN TENSION BAR.

The Aviation Maintenance Alerts provide a common communication channel through which the aviation community can economically interchange service experience and thereby cooperate in the improvement of aeronautical product durability, reliability, and safety. This publication is prepared from information submitted by those who operate and maintain civil aeronautical products and can be found on the Web at <http://afs600.faa.gov>. Click on “Alerts (AC43-16).” The monthly contents include items that have been reported as significant, but which have not been evaluated fully by the time the material went to press. As additional facts such as cause and corrective action are identified, the data will be published in subsequent issues of the Alerts. This procedure gives Alerts’ readers prompt notice of conditions reported via Malfunction or Defect Reports, Service Difficulty Reports, and Maintenance Difficulty Reports. Your comments and suggestions for improvement are always welcome. Send to: FAA; ATTN: Aviation Data Systems Branch (AFS-620); P.O. Box 25082; Oklahoma City, OK 73125-5029.

FLY LOW, GO FAST, TURN LEFT

(continued from Page 7)

"…I had the privilege of working with a great group of professionals, both industry and FAA, at the 2002 National Championship Air Races in Reno, Nevada."

The leader of the FAA's safety team of operations and airworthiness safety inspectors was Clarence Bohartz. Clarence is no stranger to the races. He has monitored the races for the FAA for years, and before he joined the FAA, his aviation career in the Reno area included working for aviation legend Mr. William "Bill" Lear. "I have been on the field for 32 years and attended 31 races," Clarence said. "I missed one race," he said. When asked the role of FAA at the races, he said, "Our role is public safety." "We monitor the crowd control lines as well as checking the race participants and their aircraft. With the pilots and aircraft, we check their paperwork and do a cursory inspection of the aircraft," he said. RARA's technical committee's experts do a detailed check of each aircraft before the aircraft is permitted to try to qualify for the races.

Clarence said RARA has patrols and security up and down the crowd control lines to make sure people remain behind the safety lines. If someone tries to get in front of the lines, the person is escorted behind the line. If that person causes a problem or disturbance, that person is escorted out of the area. As I reported in my article, it seemed that everyone at the races knew Clarence and would stop him whenever possible to either say hello or ask a question. At the time, I thought this was interesting because at many aviation events, the last thing many people want to do is stop and talk to an FAA aviation safety inspector.

FAA Safety Inspector Clarence Bohartz (left) reviews a flight schedule with RARA's Board of Directors member Tom Gadd.

But Reno, its people, and RARA are different. The people who manage the volunteer, non-profit RARA organization and those who fly the aircraft all want a safe environment. To paraphrase one RARA official, Reno is our "sandbox." It is the last open area where we can race. We have to protect it so that we can continue to race here.

And for almost 40 years, the community has supported the races. In the short time I was there last year, I think the key to the success of the races is the dedicated volunteers who make everything happen. One example of that long-term support I saw last year was three generations of Sweeney's at Pylon 8. According to Kelly Sweeney from Portland Oregon, his 82-year old father started the tradition years ago. Now Kelly and his son help his father monitor "their" Pylon 8 to make sure no aircraft cut the final corner as the planes head down the home stretch to the timer's stand and the waiting flagman.

Because of the fact aircraft are racing, the FAA's

Rescue equipment stand by in case it is needed. The Navy helicopter waits to demonstrate its search and rescue capabilities as part of the military's participation in the air show.

Left. School kids wait to have their arms autographed by one of the military pilots displaying military aircraft at Reno. Top. Race officials line up aircraft for the start of a race.

Reno Flight Standards District Office works throughout the year with RARA to try to make the races as safe as possible. Since racing by definition has a certain amount of risk involved, the FSDO and RARA work hard to reduce that risk to the maximum extent possible. Flight procedures, including the size and layout of the various aircraft class race courses, are designed to minimize risk to persons and property on the ground as well as the spectators who come to watch the races and air show. Safety near and around the aircraft in the pits and during ground movement is constantly stressed by everyone involved. Although protection for those on the ground is important, the pilots and air show performers are not forgotten. From crash rescue personal and emergency medical teams to heavy equipment to move aircraft to having alternate landing fields included in emergency plans, RARA tries to anticipate and prepare for foreseeable problems.

Clarence said an important part of safety at Reno is that everyone knows everything. He stressed there are no secrets between race officials and FAA. This open communications and common knowledge enhances safety by, paraphrasing an old expression, making sure everyone is on the same page. In this case, that means both flight safety as well as protecting those on the ground. He said, "If we have a problem we sit down and work it out. When it comes race time or school time, we don't want to have any big surprises."

An important function of the FAA aviation safety inspectors assigned to the races is checking pilots and aircraft for proper documentation. Reno is unique. As one pilot said, "We know each other. We have to prove to each other we can race without endangering other aircraft before we get to race at Reno."

In fact, RARA holds a training school each June for new pilots to learn how to race at Reno. "Rookie" week also gives veteran race pilots a chance to test their aircraft as well as sharpen their skills. According to Clarence, the FAA has the same involvement in the training week as during the actual races with the exception that there is no air show component. The week gives the various class instructors the chance to take new pilots out on the course and let them practice race-like conditions and the related training needed to be able to compete safely under controlled conditions.

Since Reno is billed as the fastest motor sport in the world, pilot competency and the ability to fly low, fast and make left turns in a gaggle of other aircraft cannot be stressed enough. As another pilot said, Reno is not the place to learn how to fly. He said only the best pilots come to Reno.

An important part of each day's racing is the pilot briefing periods where RARA officials, FAA safety inspectors, and race participants discuss problems, make suggestions, and work to ensure safety is enhanced. No detail is too small to be discussed if safety is involved.

Many pilots may not be familiar with all of the planning and review process that goes into an aviation event such as Reno. With military-like precision, the daily races and air show events are scheduled to the minute. Dedicated volunteers then make sure the races are kept on schedule. Each event is timed from engine start to shutdown. When one race is ending, other aircraft are moving into position to launch. In some race classes, the aircraft start from a standing start on the runway. In the Unlimited classes, the aircraft start in flight from off the

FAA safety inspectors, William C. Kunder (left) and David H. Butler (right) meet with Rick Svetkoff as part of their inspection of his F-104 Starfighter. The Starfighter performs as part of a two-ship flight of F-104s.

course. If the Unlimiteds approach the course in the proper spacing, the racers get the signal they have a race.

From the race timers to the aircraft spotters to those who help stage the aircraft, Reno is a well-orchestrated aircraft extravaganza.

A critical part of that planning is the application for and issuance of the Certificate of Waiver or Authorization by the FAA for the event. In the case of Reno, the 2002 Waiver signed by the Reno Flight Standards District Office Manager Louis Benton Jr. contained 74 special provisions. These provisions included such items as the qualification requirements for pilots, the responsibilities of RARA officials for safety, what flight procedures are waived to permit the races while still maintaining an equivalent level of safety, the dimensions of the race course for each category of aircraft, the qualification of anyone who performs aerobatics, what is and what is not aerobatic flight, the requirement for show lines and crowd control, the minimum distances aircraft could fly near spectators, the need for specific crowd control measures for the ground movement of aircraft around spectators, and emergency contingency planning. These are only a few of the 74 special provisions from last year. From airspace to helicopters to parachute jumps to air race participants to emergency response, the Reno FSDO and RARA work closely to ensure the safety is maintained and that everyone knows what is expected of each person involved in the races. And as I said earlier, Clarence and his team of inspectors were there to answer anyone's questions.

RARA and the team of FAA inspectors lead by Clarence work together to protect the participants, the spectators, and the surrounding community around the Reno/Stead airport. As the one RARA official said, "It is in our best interest to protect our "sandbox." And protect it they do. As one FAA safety inspector, David H. Butler, said, "Another word for Reno is safety." Everyone at Reno from RARA to FAA to the participants work hard to provide exciting and challenging races with a great air show while maintaining the highest level of safety possible at the "...world's fastest motor sport."

For more information on the 2003 National Championship Air Races, you can visit RARA's Internet Website at www.airrace.org. If you get down into the pit area, stop by the FAA trailer and say hello to the FAA hometown team from the Reno FSDO. You will be glad you did.

Two biplanes pass in front of a race timer's wire sighting device during a race. The sighting device allows timers to get an accurate time check of each aircraft as it passes in front of the timers' stand.

• Wrighting the Facts

Several nitpicks on the May/June article, "Countdown to Kitty Hawk."

The reference to the "1903 *Flyer* crashed on its fifth flight and was repaired years later by Orville Wright…" Strictly speaking, the reason that only four flights were flown December 17, 1903, was that after number four, the wind rolled the *Flyer* into a ball, virtually unrepairable from the brother's standpoint. Wilbur's landing on the fourth did minor damage to the forward elevator, but nothing that they hadn't been able to cope with in the field on many earlier glider flights.

Again for historical accuracy, you should have stated that the 1903 flight was the first manned, powered, sustained, and CONTROLLED flight. Control was critical to the Wright's success and to the evolution of aviation. Unlike most (if not all) earlier experimenters, they understood that banking was essential to turns and, just as important, that rudder coordination with the bank was essential to avoid adverse yaw, which troubled them in earlier glider flights. They discovered adverse yaw, although they didn't call it that. Control, though wing-warping and coordinating rudder, is the foundation of the Wright's patent—not, of course, the airplane itself

Oops, this is a bad one. The first flight was flown a DISTANCE of 120 feet, not a height of 120 feet. The brothers tended to stay low to minimize damage and injury in case of a crash, of which they had become experts through their gliding experiments.

Sad to see that a document of aviation record like the FAA Aviation made these errors.

Don Byers
Hampton, VA

Thanks for setting the record straight. Unfortunately, the article was expanded at the last minute and, as all things done in a hurry, the mistakes were discovered after the magazine was printed.

Regarding you first comment, the sentence should have said the "Flyer was damaged before its fifth flight" and a further explanation would have been appropriate. However, if you read the Editor's Runway, the author stated the facts correctly in regards to your second and third comments. The first manned, sustained, heavier-than-air, controlled, powered flight's height was only about 10 feet for a distance of about 120 feet, which took about 12 seconds.

• A Magazine in Transition

In your January/February issue, the Editor's Runway was talking about changes coming to the FAA Aviation News.

Where are they? I've been watching, but have seen nothing so far.

Lucas Manther
Via Internet

In the article, we mentioned that the magazine is now printed six times a year. This has been in effect since the September/October 2002 issue. We hope everyone is enjoying the additional information that the added pages are bringing to you.

Ms. Carol Dieterle has been selected as the manager for the new Plans and Programs Branch, formerly the Publications Staff, in the General Aviation and Commercial Division of Flight Standards Service of which the FAA Aviation News staff is a part. See her introductory comments about the magazine on page 35. The magazine remains in the General Aviation and Commercial Division.

As for future changes in the magazine, the September/October issue will introduce design changes in the magazine. Be prepared for a new look on our front cover.

As always, we welcome your comments or suggestions. You can contact us electronically by means of the magazine's Internet Webmaster at <webmasteravnews@faa.gov>. Written comments can be sent to FAA Aviation News, AFS-805, FAA, 800 Independence Ave. SW, Washington DC 20591.

FAA AVIATION NEWS welcomes comments. We may edit letters for style and/or length. If we have more than one letter on the same topic, we will select one representative letter to publish. Because of our publishing schedules, responses may not appear for several issues. We do not print anonymous letters, but we do withhold names or send personal replies upon request. Readers are reminded that questions dealing with immediate FAA operational issues should be referred to their local Flight Standards District Office or Air Traffic facility. Send letters to H. Dean Chamberlain, FORUM Editor, FAA AVIATION NEWS, AFS-805, 800 Independence Ave., SW, Washington, DC 20591, or FAX them to (202) 267-9463; e-mail address:

Dean.Chamberlain@faa.gov

NEW AREA NAVIGATION (RNAV) ROUTES

Recently, the FAA adopted certain amendments to Title 14, Code of Federal Regulations which pave the way for the development of new area navigation (RNAV) routes in the U.S. National Airspace System (NAS). These amendments enable the FAA to take advantage of technological advancements in navigation systems such as the Global Positioning System (GPS). Initially, these RNAV routes will be established only in the high altitude en route structure for use by suitably equipped aircraft (equipment suffixes /E, /F, /G, or RNP 2.0).

In the 1970's, the FAA began publishing a series of instrument approach procedures and routes for use by RNAV-equipped aircraft. A nationwide system of high-altitude RNAV routes was established consisting of approximately 156 route segments. The FAA found, however, that most RNAV equipped aircraft were using RNAV in the high altitude en route system on a random route basis, and little or no use was being made of the high altitude RNAV fixed route structure. Therefore, in January 1983, the FAA revoked all high altitude RNAV routes in the United States, except for four routes in the State of Alaska which were retained and remain in use today.

On April 8, 2003, the FAA published a final rule which, in part, adopted the International Civil Aviation Organization (ICAO) term "Air Traffic Service (ATS) Route," as follows:

Air Traffic Service (ATS) Route is a specified route designated for channeling the flow of traffic as necessary for the provision of air traffic services. The term "ATS route" refers to a variety of airways, including jet routes, area navigation (RNAV) routes, and arrival and departure routes.

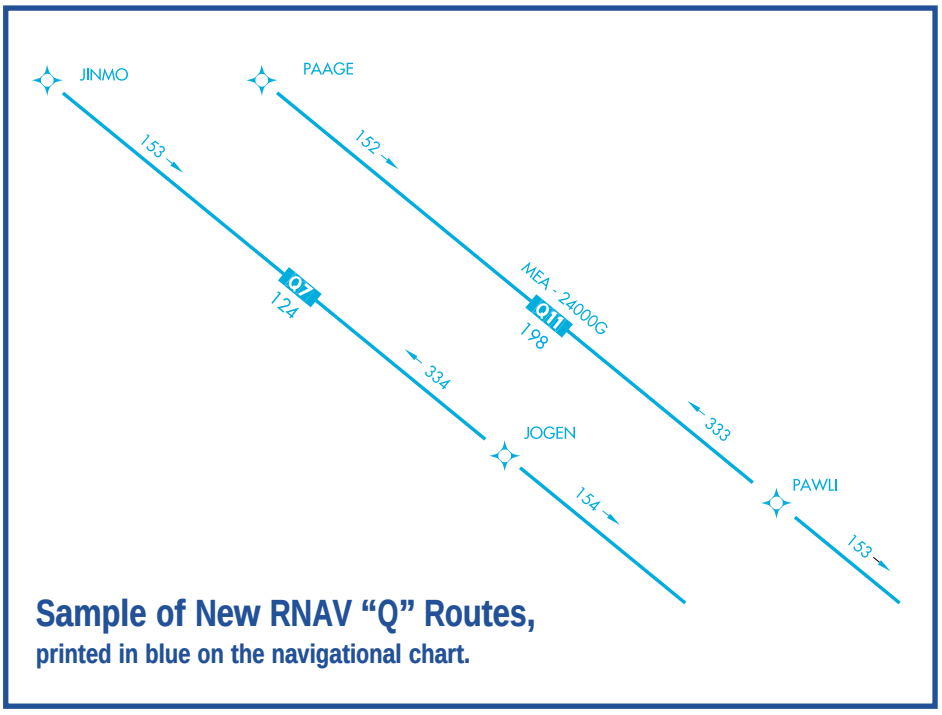
The term "ATS route" is a generic term that includes "VOR Federal airways," "colored Federal airways," "jet routes," and "RNAV routes." The term "ATS route" does not replace these more familiar route names, but serves only as a overall title when listing the types of routes that comprise the U.S. route structure.

On May 9, 2003, the FAA published a final rule that establishes 11 new RNAV routes in the U.S. domestic high altitude structure. The new routes will be depicted on the IFR En-route High Altitude – U.S. charts (H-1, H-2, and H-3) commencing with the July 10, 2003 chart editions. To be authorized to fly these new RNAV routes, aircraft must be suitable equipped for advanced RNAV (i.e., equipment suffixes /E, /F, /G, or RNP 2.0).

ICAO has assigned the letter prefix "Q" for use by the United States and Canada to identify domestic RNAV routes. ICAO has allotted the numbers 1-499 for domestic RNAV routes that originate in the United States. Routes originating in Canada will be assigned a "Q" prefix with a number from 500 to 999.

RNAV route data (route line, identification boxes, mileages, MEAs, waypoints, etc.) will be printed on the chart in aeronautical blue. RNAV MEA values will be identified with a "G" suffix (MEA – 19000G). Magnetic reference bearings will be shown originating from a waypoint, fix/reporting point, or navaid.

The initial implementation of RNAV routes requires radar monitoring by air traffic control due to unresolved issues with DME updating.



Sample of New RNAV "Q" Routes,
printed in blue on the navigational chart.

A MESSAGE FROM CAROL W. DIETERLE, NEW PLANS AND PROGRAMS BRANCH MANAGER

Tom Peters notes, "the highest compliment you can pay a customer is to listen." My highest priority, and the way I can best add value to the *FAA Aviation News*, is to listen to you—our readers.

I am the new manager for the creative group who brings you *FAA Aviation News*. In this position, I have the opportunity to take a fresh look at our magazine. We are approaching this in

two ways: we are participating in a management initiative to change the way we do business by standardizing business practices and procedures. This process requires rigorous documentation, monitoring, measurement, and auditing. Second, we are working with FAA's Public Affairs staff to make some cosmetic changes to our cover, updating our look. We will be looking to you to give us feedback and help us map out our desired future.

I am so honored to be a part of the team who publishes this magazine. The professionals who write the articles, take the photographs, do the layout, and edit the product are the best of the best. My opinion is that they are the top guns of the FAA's external communication team. I'm sure you, like me, have enjoyed their efforts and look forward to continued excellence.

But we do want to improve—a tall order for a well-functioning product line like *FAA Aviation News*. Mario, Louise, Dean, and I want to not only meet your needs with *FAA Aviation News*—we want to "wow" you. We want to turn up to heat. We want a breakthrough communication. And we want you to tell us what it will take to create this bold new future.

As we have noted in past issues, this is your magazine. We work for you. Tell us what we can do better, bigger, and bolder to inform and educate you about aviation safety in *FAA Aviation News*. I'm standing by—and I want to hear from you. You can send your comments electronically to the magazine's Internet webmaster at <webmasteravnews@faa.gov>. Or you can write to me directly at Carol Dieterle, FAA Aviation News, AFS-805, FAA, 800 Independence Avenue SW, Washington, DC 20591.

Mario Toscano photo

Carol W. Dieterle, new Plans and Programs Branch manager.

REPORTING A CHANGE TO YOUR AIRMAN CERTIFICATE

The Civil Aviation Registry will only accept requests to change an airman's name, nationality/citizenship, gender, or date of birth that have been processed through a FSDO by an FAA Inspector. The change package should consist of a completed application form signed by the airman and the approving Inspector, copies of the documentation that substantiates the change, the superseded certificate, and the original copy of the temporary certificate.

To obtain a new airman certificate that reflects a legal name change, submit either a photocopy of a marriage license, court order, or other valid legal document that legally verifies the name change or, since some states allow a person to make a legal name change by affidavit without any other legal documentation, a signed and notarized copy of the airman name change form. The form can be found on the Civil Aviation Registry's Airmen Certification website, <http://registry.faa.gov/airmen.asp>, if you click on "Report a change…" (ninth item).

To obtain a new airman certificate that reflects a nationality/citizenship change, submit a naturalization document or other legal document that verifies the nationality/citizenship change to an FAA inspector.

To obtain a new airman certificate that reflects a gender change, submit one or both of the following to an FAA inspector:

a. A court order issued by a court of the United States or its territories stating that the applicant has changed his/her gender, and/or
b. A statement from a physician or clinical psychologist treating the applicant that contains:
    1. Identification of the applicant by name and address, and
    2. Verification that the applicant is undergoing treatment that has altered or will alter the gender.

To obtain a new airman certificate that reflects a date of birth change, submit a copy of a birth certificate or other legal document that verifies the date of birth change to an FAA inspector.

Editor's Runway

from the pen of FAA Administrator, Marion C. Blakey

Charting the Next Century of Flight

One hundred years ago, two brothers from Ohio traveled by train, steamship, and small boat to the windswept dunes of North Carolina. By experiment, exacting science, and sheer perseverance, on December 17, 1903, Orville and Wilbur Wright unlocked the secret of powered flight.

Their success on that blustery morning — a single pilot flying 120 feet in twelve seconds — has been followed by extraordinary progress over the last 100 years. Last year, 628 million people flew on the U.S. airlines without a single fatality.

There are several reasons for this exemplary record. First, the federal government should be proud of its exemplary work in safety regulation and certification and over the years we and the aviation community have learned much from painstaking accident investigation.

As a result, we have witnessed remarkable technological developments in airframes, engines, and onboard aircraft technology. The introduction of the jet engine into commercial aviation in 1958 led to major improvements in safety and reliability. At the same time technology advanced, the aviation community raised professional standards, developed more sophisticated training, and achieved a better understanding of human factors.

The FAA is proud of the contributions of air traffic control to aviation safety. The goal from the beginning was to keep aircraft safely separated and to regulate the flow of air traffic. It was the need for better air traffic control that led to the creation of the FAA in 1958.

As we celebrate the first century of aviation, we must ask the question, how will the FAA chart the next century of flight?

For everyone at the FAA, there are three top priorities: safety, capacity, and international leadership.

To build on the strong safety record, the FAA and the commercial airline community have set the ambitious goal of reducing an already low accident rate by 80 percent by 2007. And, we're making good progress to reach our goal. By early 2003, we had already reduced the accident rate by 58 percent from our baseline.

To reach this goal the FAA is using a system safety approach to work with airlines, pilots, manufacturers, and other stakeholders to learn more about the things that can cause or contribute to accidents. We identify hazards, assess and analyze risks, prioritize actions, and measure and document results. It's a continuous process that allows us to evaluate results as well as see where we need to take additional action.

Next, we must increase the capacity of the aviation system. Air travelers may remember the summer of 2000 when air travel seemed to be at a standstill. Yet, today's temporary downturn in air traffic is a precious moment for preparation. We intend to be ready when demand returns.

Increasing aviation capacity can be accomplished three ways: new technology, new procedures, and new runways. We need to invest in all three to build capacity.

We're moving ahead on our programs to replace and improve critical air traffic control infrastructure, such as the new Potomac TRACON that opened this year in Northern Virginia. It consolidates five TRACONS serving the middle Atlantic region. With new technology as well as new procedures it is bringing tremendous efficiency improvements for airlines in smoother traffic flows and more efficient routings.

Nineteen of the nation's thirty-five largest airports are now at various stages of planning and development for expanding capacity through new runways. Twelve runways are set to open by 2008, including four this year in Denver, Houston, Miami and Orlando.

Finally, the FAA must be as globally minded as our airlines, operators, and manufacturers. Aviation safety is one of our nation's most important exports. We're taking immediate steps at the FAA to ensure our actions maintain as well as enhance America's aviation leadership role in safety and air traffic control. The FAA is already deeply engaged internationally, and we will further our engagement.

In their research, the Wright brothers drew much from the gliding experiments of Otto Lilienthal. It was Lilienthal who wrote, "To invent an airplane is nothing. To build an airplane is something. But to fly is everything."

Yes, it is. And as we chart the next century of aviation, it will be through focusing on safety, capacity, and international leadership that our citizens will be able to fly safely and efficiently around the globe. Now, that is everything.

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