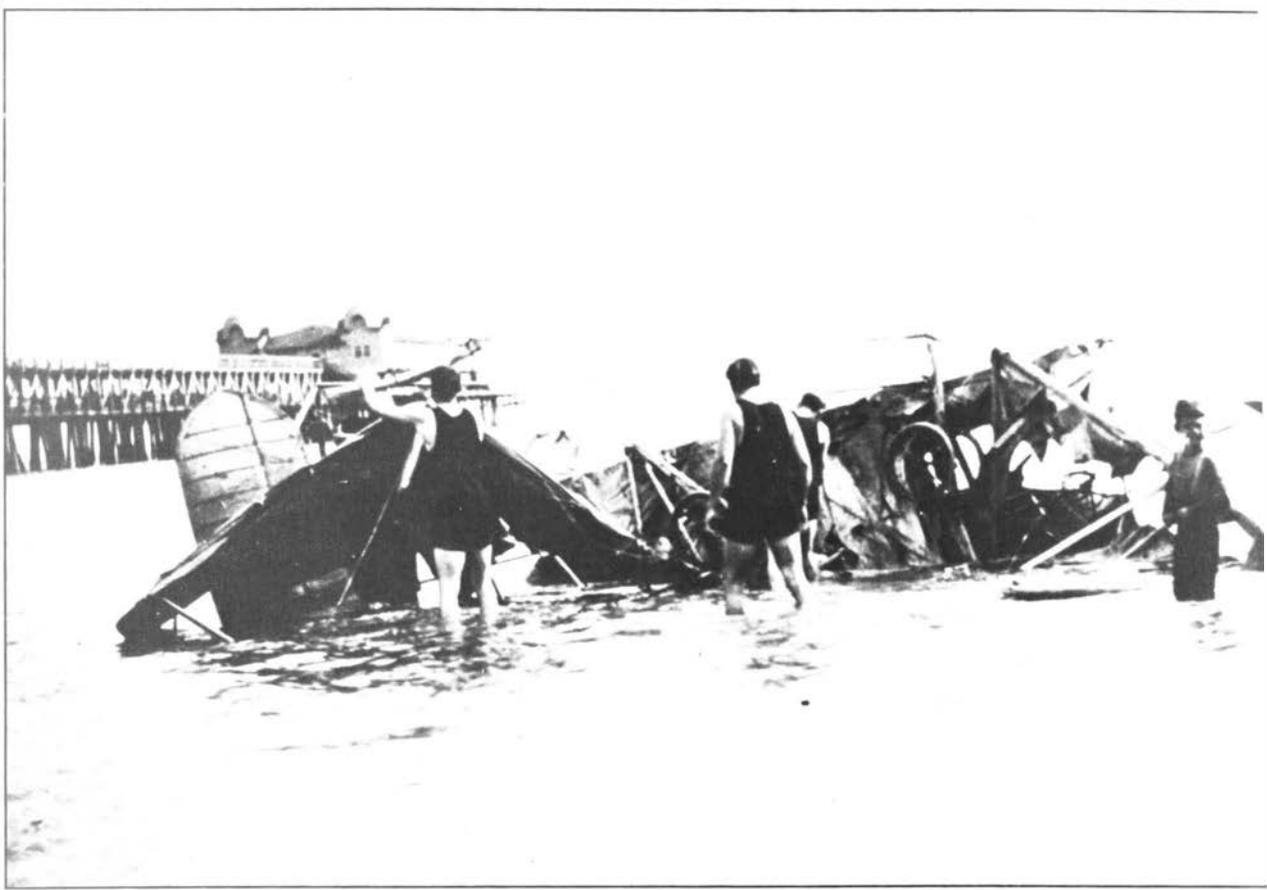


World

August 1982
Volume 12 Number 8



U.S. Department
of Transportation
**Federal Aviation
Administration**



Birds 1, Aircraft 0



Research Highlights

This Cessna 210, confiscated by U.S. Customs agents during a Florida drug raid, is being unloaded at the FAA Technical Center by (l-r) Robert Brooks, William "Joe" Flaig, James Demaree, Gerald Slusher and Joseph Wright.

Beginning this month, the aircraft will be used to test the dissipation rate and toxicity levels of extinguishing agents from hand-held fire extinguishers when used in general aviation aircraft under simulated in-flight cockpit ventilation conditions. Halon 1211, Halon 1301, dry chemi-

cal agents and carbon dioxide will be tested.

The plane's fuselage has been placed in a 20-foot bell-shaped extension to the center's Air Flow Induction Facility in the Aero Research and Development Area. The extension has a velocity capacity of 100 knots to simulate the relative wind of a light plane in flight.

The test results of this joint effort by the center, the Central Region and the headquarters offices of Aviation Safety and Airworthiness will be used to establish regulatory criteria or advisory circular data on the hand-held extinguishers.

"FAA's mission is to promote the safe and efficient use of the nation's airspace, facilities and the vehicles that travel the airways. To achieve this objective, we should control but not constrain aviation; we should regulate but not interfere with free enterprise or competitive purpose; and we should recognize that most air travelers do so by means of scheduled air carriers. We have a responsibility to consider their priority but not to the extent that it excludes the single individual from enjoying man's greatest achievement—solo flight. Above all, we must remember that the airspace belongs to the users and not the FAA."

—J. Lynn Helms

Front cover: In what probably was the first bird-strike fatality, Calbraith Perry Rodgers crashed into the surf at Long Beach, Calif., in 1912. Read about Rodgers transcontinental flight on page 12 and what FAA is doing about bird strikes today on page 15.

Smithsonian Institution photo
Gull photo by Ken Maginnis

Back cover: A big bird and its chick? It would seem that a Boeing 747 at Anchorage International Airport hatched the Globe Swift owned by Spencer Hill, Anchorage FSS.

Photo by Spencer Hill



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FAA, Its People & the Public

In his first interview for FAA WORLD, Administrator Helms states his views on agency management, employees now and in the future, unions and tomorrow's automated systems.

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The First Transcontinental Flight

It was a time in aviation when pilots needed raw courage to fly. Some also had the skill to survive, but their aircraft were not equal to sustained flight. Still, 1911 saw the first ocean-to-ocean flights crash through.

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Birds and Planes Don't Mix

Even the first transcontinental pilot discovered the truth of that statement, much to his sorrow. FAA is still working on ways to discourage birds from frequenting the nation's airports and FAA equipment.

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FAA, Its People & the Public

The Administrator's First Interview for FAA WORLD

Q What is the major difference between running a private corporation, as you did for many years, and running a government agency?

A First, let me establish that in my mind there are far more similari-



ties than differences. FAA basically is a service organization, like a service business in industry. As part of that, you have administrative, personnel, job description, operational schedule, budget control and other procedures and policies . . . even legal review.

These are all aspects of a private business. So there are far more similarities than differences. The most pronounced difference, to me, is that a business has a board of directors who have common objectives, an agreement on ways to achieve company objectives. A government agency has a board of directors of over 500 people—that is, the Congress.

And most place their personal desires ahead of the common objectives of the government agency. That doesn't say they're not trying to respond to their constituents, but it's a matter of fact, a matter of record, that the desires of the agency are often subjugated to those individual desires.

Q Do you think good management really is possible in government, given the fiscal constraints, political pressures and other factors that inhibit the Federal executive?

A I assure you, the executive in a business has just as many financial constraints, labor constraints, public pressures and other elements as does the government executive. The difference is that he has a greater degree of latitude and is given more freedom and authority to do something about them. So I don't see that the government executive cannot perform his functions; however, there's no question, he's constrained more.

Q You're probably tired of hearing this question, but is there any chance that the fired controllers will be given their jobs back?

A I cannot envision any way in which those people who violated the law will be brought back into the FAA. I recognized early on that that the speed with which we had to terminate 11,400 people may have resulted in some mistakes. Therefore, I directed last November that a review be made. Where we find errors, we will bring the people back, and some already have returned. But basically, the only people that I can see coming back are those about which the FAA made some kind of mistake. We're going to respond to their rights the same as we do to the taxpayers' rights, not letting people break the law.



Q What is the timetable now for getting the ATC system back to normal?

A We're operating now at about 83 percent of capacity, and we define capacity as the July 1981 Airline Guide operating level, together with the attendant percentage that existed then for general aviation and Department of Defense aircraft. We expect to be back to about 90 percent by the end of September and 100 percent by the end of April of next year—but with some flow control. We will slowly release flow control until about December 1983, at which time I would expect we would be on a national level of 100 percent of July 1981 capacity without flow control. Incidentally, there probably will be one or two centers that will not be back at that level even then, because we can't bring everybody back at one time. We will release centers one-by-one as we have the capacity.

“Our employees have done an outstanding job since last August. . . . No group did it alone. . . . We fulfilled our oath.”

Q Do you agree with the basic conclusions of the Jones report on the rather sad state of management/employee relationships in FAA?

A Both Secretary Lewis and I voiced our concerns in April of last year about employee/management relations in FAA and began working on the problem at that early date. I think we have to put the Jones study in perspective, in two areas specifically. One, the task assigned to the study team was specifically directed towards air traffic. I am more concerned about the total FAA. And second, I have researched the files and found that there have been 17 different studies of FAA, of which nine related to employee/management relations. One can draw a number of conclusions from this fact, and I'm sure some of our employees have. For example, "It doesn't do any good that we had another study because nobody's going to do anything about it, anyway." For those who have reached this and similar conclusions, I can only state emphatically, this time we *are* going to do something about it! I absolutely and firmly intend to initiate a major program on employee/management relations. Incidentally, our program will not respond solely to the Jones

Committee report. Rather, it will respond to all of these reports, because the problem I wish to address is the total FAA, not any single segment of the FAA.

Q Do you think our problems are all management's fault or do employees and unions also share the blame?

A No, I do not think it is all management's fault. And I do not think it's all employees' and, frankly, I do not think it's all unions'. It's a composite of many elements, and I'm really not that concerned about identifying where the fault lies. After all, those were decisions that were made in the past, and I can make no decisions today that changes the past. I'm more concerned about where we're going in the future. I want to identify practical means to improve the work environment, and these means must include employee

participation. We are moving in that direction, and there's no question in my mind but this is going to happen.

Q Looking ahead, what are the key things the agency must do to turn this situation around?

A Oversimplified, our problem—if you wish to use that word—comes down to two items. These two items are communication and education. We do not have adequate com-



munications both to and from our employees throughout the entire organization. And secondly, we do not have satisfactory education of our employees in terms of their knowing what their job is, knowing what the agency does and knowing the constraints that are imposed on the agency by the Congress—all aspects of it. Our program, then, will be directed toward those two items—specifically, to improve communications both at the very local level and all the way up to the Administrator and to institute a widespread program of education. And incidentally, when I say education, I'm not referring solely to formal degrees or collegiate training. That, obviously, is an integral part, a very key part, of raising the educational level. But I'm talking about educating our employees as to what our function is, what we do and what the relationships are of the various segments of the agency.

Q Apart from such a program, have you seen any turnaround in the effectiveness of the workforce since last year?

A Most certainly. Our employees have done an outstanding job since last August. I didn't say just "Air Traffic." I said "our employees." This includes *all* elements: techni-



cians, stock clerks, controllers, purchasing agents, flight service specialists, secretaries—all of the skills that make up the FAA. No group did it alone. We all have done it together. We fulfilled our oath and brought a vestige of new recognition and respect for the expression: "I work for the FAA." The American public now knows us. Our future actions will establish whether they truly accept us.

Q Given our experience with PATCO, do you think labor unions in FAA can serve a useful purpose?

A I have no reason to believe that a union is detrimental or necessarily detracts from the capability of employees to perform their function. I've worked with them for 30 or 35 years. In the case of PATCO, I don't think

any of us should use that as a criterion. Rather, the history of the labor union movement in the United States has been, overall, one of contributing to the national culture and has made contributions to the American public. Had it not been for labor unions back in the industrial revolution of the 1880s, who can say what the individual worker would be today? So there's no question but that they have contributed to our overall economy and our lifestyle.

I have some leanings, or some indications, however, that the union movement, as such, may be a prisoner of its own success: Federal laws today provide so many of the fundamental benefits that the original labor union movement was supporting that the majority of American workers have the items without union membership. And this may be a problem that they face. But we have no objections to unions in the FAA. If that's what our employees elect to undertake, we will not oppose it.

Q The National Air Space System plan envisions an expanded role for computers in ATC decision-making. Is this wise or safe?

A Well, there's certainly no question that it's safe. The greatest

problem in operational air traffic control that we have today is that voice communications over a radio net induce the majority of our errors. So data link is a better way to go.

Secondly, human judgment, or final decision, must transcend the operation of any computer. But human judgment cannot make the very, very high-speed calculations that a computer can. So what we're talking about is the proper balance between the two. Even when we achieve the fully automated operational level that we've identified, we'll still have controllers—about 9,500 of them is our best estimate at this point in time.

Put another way, if we do not go into an expanded role for computers and automation, we as an agency will not properly serve the American public. If we don't serve them, they don't need us. We must recognize it is *their* airspace, not ours. We're merely paid to help them use it safely. The only way we can do that is with greater automation. Because there's no question in my mind, aviation in the future is going to continue to grow.

Q Won't such advanced automation features make the controller's job less important?

A No, I see it as the exact reverse. In fact, it will make his job more important. He will become, if you will, more of an executive agent, overseeing what the computer is doing in the way of predicting flight paths, potential conflict alerts, descent points—those types of items. In no way do I see this reducing the controller's importance. He or she will be limited by only one thing—mental attitude.

Rather, automation will relieve the controller of the drudgery of having to constantly make calculations and decisions. And he will be in a position

to watch the displays, watch the decisions that are being made by the computer and confirm them. ● Of course, the controller will always, under every single condition, have the authority and the capability to override the computer's decisions whenever he deems it desirable.

Q The NAS Plan also talks about the consolidation of facilities and the reduction in the total workforce. How will this affect employees?

A At the agency level—that is, in total employment—it will have no impact. As automation comes on stream, it will cover such a long peri-



od of time that the retirement rate will again exceed what we need in the way of employees. We will be continuing to hire employees in all disciplines throughout the entire time period.

As regards consolidation of facilities, no firm decisions have been made as yet. I have a major study underway now that examines this throughout the agency at all levels—centers, regional offices, sectors, the entire spectrum of our facility locations. Some employees may be required to move, but I see no one losing his or her job or unwilling to move. We don't have any choice, however. The American taxpayer said it clearly: "Reduce the cost of government, increase productivity and get rid of burdensome and onerous regulations." FAA simply does not need all the facilities we have today. And this, of course, is because communications technology has advanced so rapidly since the late '50s and early '60s, when the present system was laid out. We no longer need all those facilities.

For those employees who have a mental lock or block that leads them to think they "own" their jobs, I strongly urge them to talk with auto workers, coal miners, carpenters, stock analysts, production control supervisors—the list is endless. Simply put, they have just been given a "welcome aboard" by the other 100 million American workers who work and can lose their jobs. Incidentally, by percentage, the most transient job in the U.S. is probably a company president!

Q What do you see as the most fundamental question that focuses on FAA employees?

A This is a difficult one to answer, because there are various possibilities, and each employee has his own perspective. Probably I should put it this way. The most fundamental question any employee has is job security, coupled with a pleasant work environment and a job description that allows him to derive some enjoyment from his work. To the extent, then, that we can provide secure employment, make it a good working environment and put employees in the jobs where they can find some personal satisfaction, I would think that that transcends most any other item which any employee has. Certainly, that's been my feeling all my life, and I don't think I'm that different from other human beings.

Q One final question. What is your number one safety priority?

A I don't know that I could establish a number-one safety priority,



other than the safe and efficient use of the nation's airspace. I am concerned that general aviation has not had the reduction in accident rates that scheduled air carriers and even the regional carriers and commuter carriers are now starting to record. So I do intend to put more emphasis on the general-aviation safety program. The number-one safety priority that I have, overall, is to make sure that the FAA fulfills its function in providing transportation to the traveling public with the sense of confidence that it's going to be safe and, as near as possible, they're going to arrive on time. ■

A Standard For Flight Standards

"Real gentlemen and very professional" is how an American Airlines captain described the inspectors of the Dallas-Fort Worth Air Carrier District Office (ACDO) in giving him a checkride. The tribute was appropriate for FAA's Flight Standards Fairness Award of 1981.

Harold LaRoux, ACDO chief at the time of the award, said he didn't want to sound trite, but all the usual accolades accorded winners really do apply. "That is the only way you can keep an operation this size going and doing its job."

The ACDO's staff of 48 inspectors and support personnel have responsibilities in Texas and in Mexico, New Mexico, three-quarters of Texas and in Mexico for more than half a dozen carriers. It was cited for its "major contributions to the development and acceptance of the [flight] simulator program." DFW's inspectors were the first in the agency to type-rate a pilot in a Phase II simulator, certifying a TWA pilot for flying a Boeing 747 who had not flown that aircraft before.

The quality of the maintenance unit's performance was reflected in the maintenance violations uncovered through in-depth surveillance and in the significant improvements in correcting deficiencies. One airline paid the largest compromise settlement of a violation—\$400,000.



Then chief of the ACDO, Harold LaRoux chats with aviation clerk Forestine Galbreath. LaRoux was replaced by George House when he became assistant chief of the Flight Standards Div.



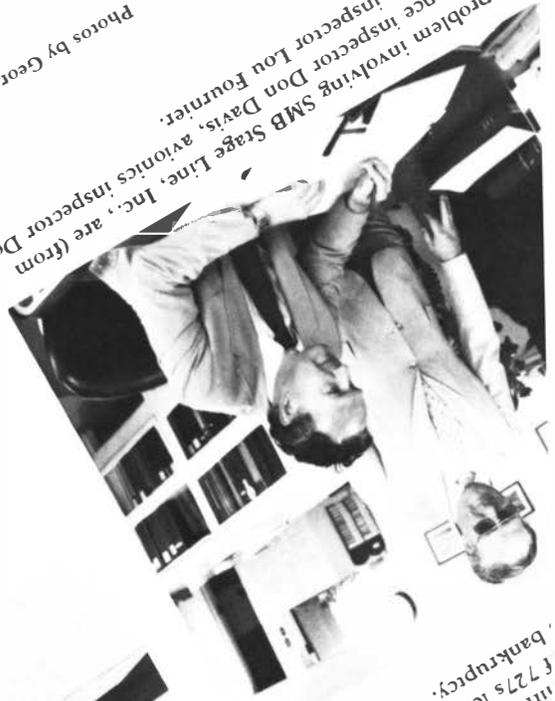
Inspectors Leonard "Bo" Korenek (left) and Glen Schroeder (right) pause as they tour the fleet of 50-plus B-747s at Dallas-Fort Worth Airport following the air

Administrative officer Virginia Adams admires the Mexican art on the walls of the ACDO, a reminder that the facility has the responsibility for U.S.-registered planes of Mexican carriers.

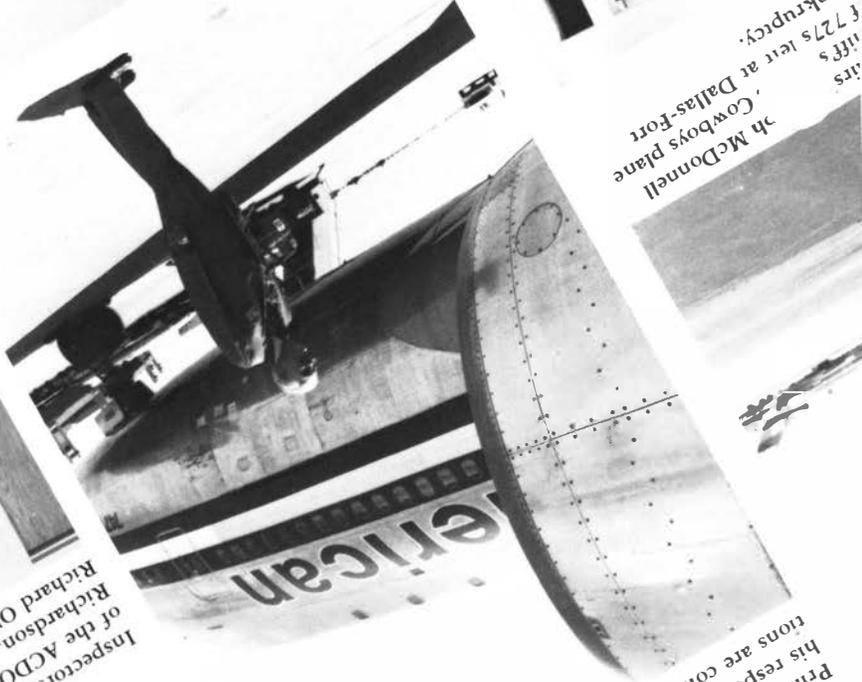


Photos by George Burlage

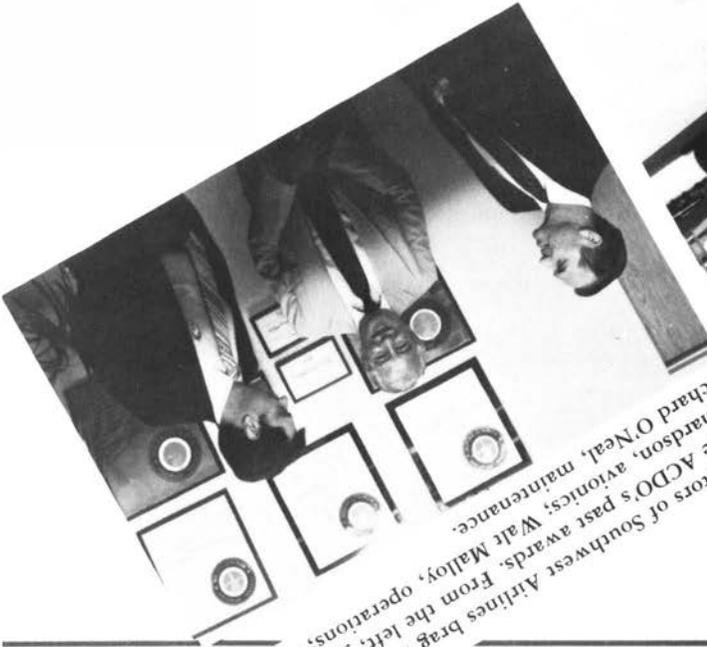
ing a problem involving SMB Stage Line, Inc., are (from Don Davis, avionics inspector Don Fournier, maintenance inspector Lou Fournier.



bankruptcy. 727s left at Dallas-Fort Worth. McDonnell Cowboys plane



Principal operations inspector Jessel Williams tours his responsibility, American Airlines, whose operations are continuing to expand.



Inspectors of Southwest Airlines brag by posing in front of the ACDO's past awards. From the left, James Richardson, avionics; Walt Malloy, maintenance; and Richard O'Neal, operations.

By Samuel Milner
A member of FAA's historical staff, he is the originator of the *FAA Publications Guide*. As a U.S. Army historian, he authored *Victory in Papua*.



The First Transcontinental Flight

Safety Took a Back Seat When Achieving Was All

Calbraith Perry Rodgers died on April 3, 1912, in what probably was the first bird-strike fatality in the history of aviation. (See story on page 15.) It was a pity, since he died in his early 30s at a time when, had he lived, he might well have filled the niche between the Wright Brothers and Glenn Curtiss at the dawn of aviation and Lindbergh and Wiley Post at its maturation as one of aviation's all-time greats.

As it is, Rodgers' place in history is secured by his having made the first transcontinental flight and doing it at a time when, considering the risks, no one in his right mind should have attempted such a venture.

It was less than seven years after the Wright Brothers' epic flights when William Randolph Hearst offered a \$50,000 prize to the first person to fly coast to coast within 30 days of starting and who did so within a year of the offer. The job had to be done by October 10, 1911.

Hearst was widely praised for his sponsorship but not by the country's aircraft manufacturers. Orville Wright, for one, was strongly opposed to the race, holding it to be ill-advised and dangerous in the light of existing aircraft capabilities. Relenting, he finally said to Rodgers, whom he knew well, "If a man has been born who can do it, you are the one, but the machine hasn't been made that can do it." No one killed himself in the ensuing competition, but it wasn't for want of trying.

Wright knew whereof he spoke. The state of the art had not much improved since Kitty Hawk. The 1910 airplanes were still clumsy, hard to

control, too low-powered and unreliable. A short hop, perhaps. For the long haul, a resounding "no."

Besides, there were no navigation aids of any sort, no maintenance shops, no ramp-side gasoline supplies—in fact, no ramps . . . there weren't any airfields. The pilot had to rely on his somewhat limited experience in pilotage and follow railroad tracks, which also carried his support facilities on railroad cars.

For such a dangerous and expensive race, there were but three entries: Robert G. Fowler from California, James J. Ward from Illinois and Calbraith Perry Rodgers from Maryland.

Fowler, a noted racing driver and the owner of a San Francisco car dealership, didn't even know how to fly when he entered the competition. He bought a new Wright B Flyer, named it the Cole Flyer after his backer—J.J. Cole, an Indianapolis racing car manufacturer—and soloed in it after 90 minutes of instruction.

Ward was a former jockey and an up-from-the-ranks mechanic who had made a number of flights and whom the Curtiss organization had used for exhibition flights. Insufficient financial backing prevented him from obtaining the ground support needed.

Rodgers at 32 was the oldest of the three and stood 6'4". He had been a famous college football player and then a motorcycle and car racing driv-

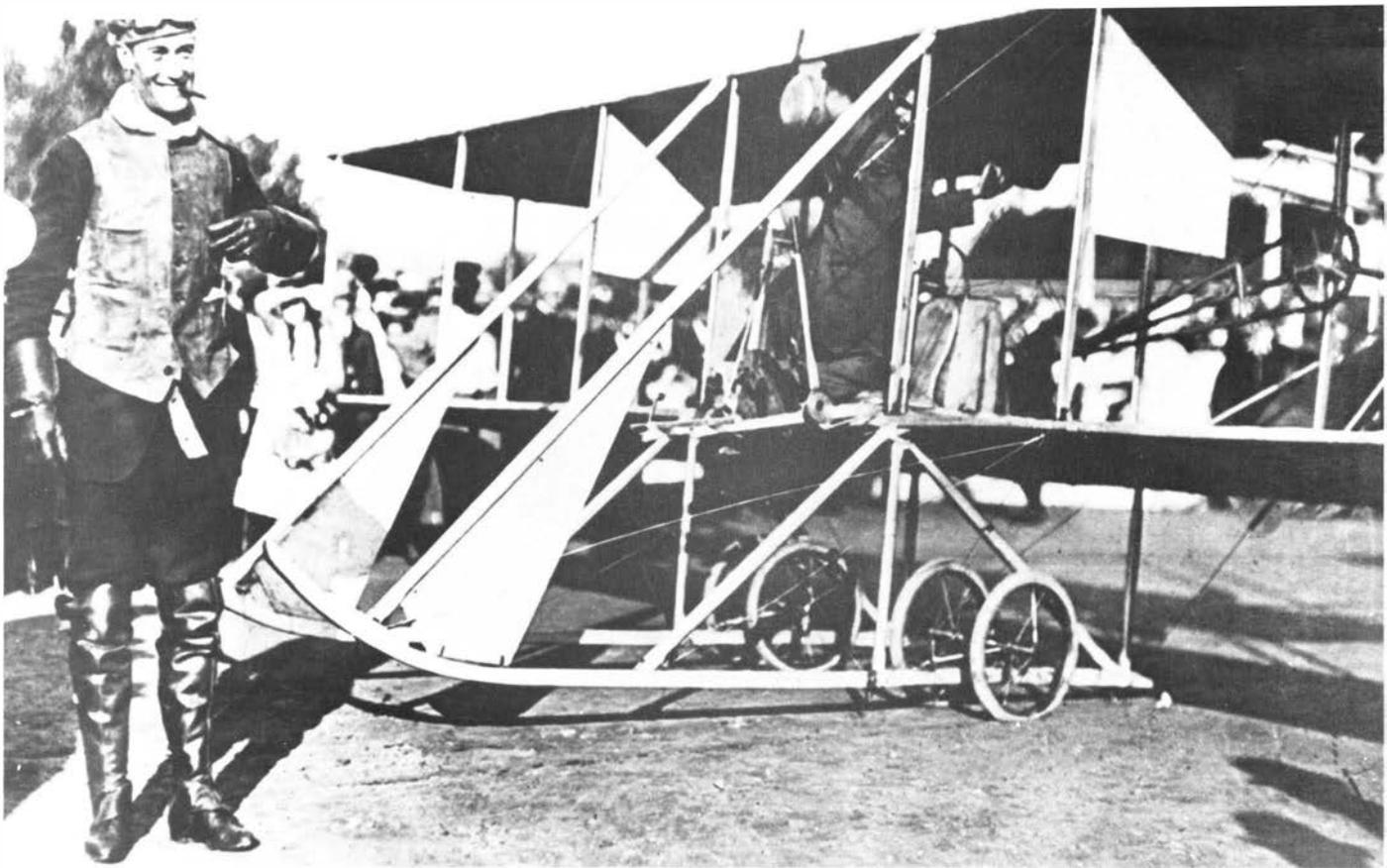
er. The scion of an old-line aristocratic family, he numbered among his forebears Commodore Oliver Hazard Perry, the hero of Lake Erie ("We have met the enemy, and they are ours"); Commodore John Rodgers, who dictated peace terms to the Barbary pirates; and Commodore Matthew Calbraith Perry, who opened Japan to the western world. His father



Serious Bob Fowler used a Wright Model B Flyer in his transcontinental flight, which took him five months to complete.

had been an Indian fighter on the Mexico-Arizona border, and he himself had sought a naval career but was rejected because of a hearing defect.

Rodgers bought a Wright B Flyer, soloed in it almost immediately and went into exhibition flying. In August of 1911, with only a few hours of flying time, he entered the nationally important aviation meet at Grant Park in Chicago. In addition to establishing an endurance record of three



hours and 42 minutes, he took most of the other prizes as well. With that prize money, he entered the Hearst competition and attracted the sponsorship of meat packer J. Ogden Armour. Diversified into other businesses, Armour was planning to market a carbonated grape juice drink called Vin Fiz, which he hoped would overtake Coca-Cola as the nation's leading soft drink. Rodgers flight appeared to be a good advertising vehicle, and a deal was struck.

Rodgers believed that with an improved and somewhat faster version of the Model B, called the E-X Flyer, he would be able to fly a steady 200 miles a day between major stops. Armour allocated \$100,000 to cover advertising, the flight's expenses and Rodgers' pay. An E-X Flyer was purchased and "Vin Fiz" was painted on its wings. In addition to dropping leaflets en route, Rodgers was to coordinate his flight activities with an ad-

vertising staff carried on a four-car train that provided his ground support.

Putting together such an ambitious entourage took time, and the result was that Fowler and Ward took off a week earlier—on September 12 and 13, respectively.

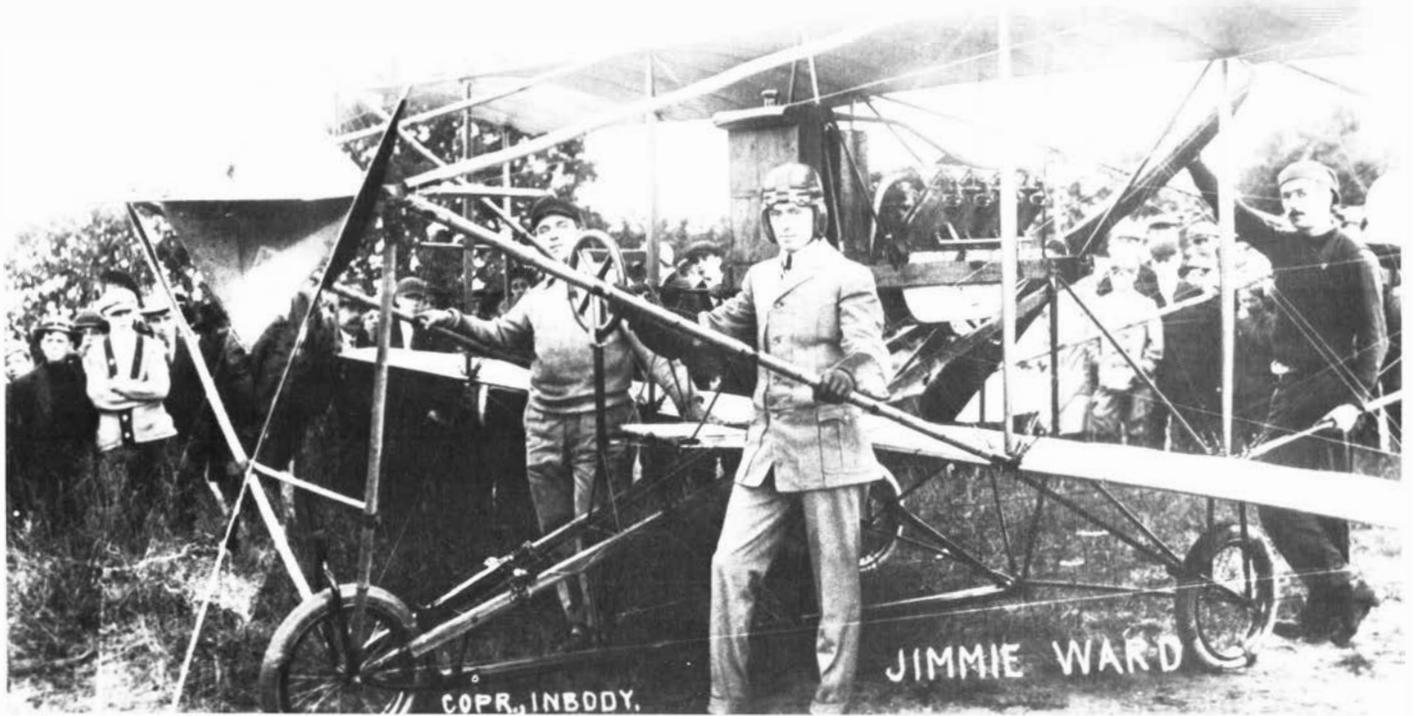
Ward, an excellent pilot, ran into trouble immediately. After leaving Governor's Island, New York, he lost his way and landed in Paterson, N.J. Then, engine trouble forced him down at Callicoon, N.Y., a village in the Catskill Mountains, at Oswego, N.Y., at Corning, N.Y., and a short distance away at Addison, N.Y., requiring repairs and two new engines. The end came on September 22 when Ward crashed on takeoff, again because of engine trouble. With the plane a wreck, he withdrew from the race.

Fowler took off from San Francisco, refueled in Sacramento and flew to the foothills of the Sierra Nevada Mountains. In two weeks, he made four attempts to cross the 7,000-foot-high

range, suffering snapped control cables, a malfunctioning engine and an overheated radiator. He smashed the plane and suffered severe injuries. Getting the message, he shipped the plane to Los Angeles and started all over again via the southern, less-mountainous route. By then, the deadline had come and gone. He decided to continue anyway, heading for Florida.

On September 18, with his support train in New Jersey, Rodgers took off from Sheepshead Bay in Brooklyn, N.Y., showered Coney Island with Vin Fiz leaflets and became the first person to fly over Manhattan Island, with a million New Yorkers looking on.

Heading for Ohio, he flew to Middletown, N.Y., in the Catskills, following the railroad tracks. On takeoff there, he crashed into a tree, slightly injuring himself. The plane was al-



most completely demolished, and it was a week before he could take off again. This was the first of 16 major crashes on his flight, which included 69 stops, of which at least some were legitimate landings. Rodgers finally reached Chicago on Oct. 4, 1911, 21 days after leaving Brooklyn and far too close to the deadline to have any hope of winning the Hearst prize, which went to no one.

He pushed on. In Missouri and Texas he put on exhibitions and drew large crowds. Engine troubles continued to plague him and cause one crash after another.

In Tucson, Ariz., Rodgers' path crossed that of Fowler on November 1, who ultimately made it to Jacksonville, Fla., on Feb. 8, 1912.

In California, at 4,000 feet over the Salton Sea, one of the engine's cylinders exploded, spattering him with oil and driving steel splinters into one arm. He shut down the engine and glided to a landing. While his arm began to mend, his mechanics put together a composite engine in the next two days, and he took to the air again. Despite spark plug trouble, a leaking radiator and a broken gas line, Rodgers reached Pasadena on November 5, where he was greeted by a crowd of 10,000.

Pasadena was the end of the line as far as J. Ogden Armour was concerned. The support train was turned back and the accounts with Rodgers

settled. Because of the heavy cost of repairs to the plane which he had to pay himself, Rodgers got very little money, and the overall promotion cost Armour almost double the \$100,000 he had budgeted. Vin Fiz hadn't overtaken Coca-Cola, although it sold well for a number of years.

But Rodgers had promised himself an ocean-to-ocean flight, and on November 12 took off for Long Beach. Over Compton, however, a control cable snapped, causing the plane to nose dive into the ground. Rodgers had walked away from innumerable crashes before, but not this time. He suffered a concussion, broke both legs, cracked several ribs and was severely burned by gasoline.

Giving himself a month to recover, he tied his crutches to the once-again-rebuilt Vin Fiz and flew to the beach at Long Beach, triumphantly rolling the plane's wheels into the surf.

In his patched up Vin Fiz—little remained of the original other than the rudder and the oil pan—Rodgers had flown 4,320 miles in an elapsed time of 84 days. His airborne time in the 49 days that he actually flew totaled 3 days, 10 hours and 4 minutes. His fastest time was 87 miles in 61 minutes.

Jimmie Ward used a Curtiss pusher in his attempt. Underfinanced, he couldn't absorb the costs of repair for repeated engine failures and crashes.

As it is with all who probe the frontiers of technology, the ordeal and achievement gave Rodgers an insight into improving the aircraft of his day. What was needed, he told a report shortly after the flight, were lighter, more powerful and more efficient engines of larger bore and longer piston stroke; better landing gear; stronger, more dependable connecting and control cables; the development of gasolines specially adapted to aircraft engines; and a better method of controlling the plane by combining the two control levers into one to leave the pilot a free hand.

If these were ideas that Rodgers, who had a strong mechanical bent, might have been expected to work on, he never got the chance. Five months later on April 3, 1912, he was killed during an exhibition flight over Long Beach when a seagull became entangled in the steering mechanism, causing his plane to nose dive into the sea.

His death three score and 10 years ago left a gap in the aviation leadership of the day. His accomplishment, however, helped build a foundation for the aviation industry to come. ■

By Theodore
Maher

The editor of *Intercom*
and a frequent contribu-
tor to *FAA WGRD*, he
is a former editor of *Our*
Navy and associate edi-
tor of the *Navy Times*.



Birds and Planes Don't Mix

FAA Works To Discourage Their Flocking Together

Birds and airplanes have never come up with a written agreement on who owns the airspace. As far as we know, birds don't even have an understanding of the Federal Air Regulations. But they should.

About four times every day, birds and aircraft collide near some airport. Usually—but not always—the bird loses. In most instances, the bird is demolished. Sometimes, after being swallowed by a jet engine, the bird all but disappears. It takes a feather expert to determine if, indeed, there was a bird there at all.

However, aircraft suffer too. Bird strikes aren't a laughing matter, for a four-pound bird striking an airplane moving at 600 miles an hour exerts a force of 36 tons.

Although bird strikes do not usually cause planes to crash, they do at times. Moreover, they cause an estimated \$20 million in damages to aircraft annually.

Because of this, FAA is getting into the bird business. . . . in a reverse wildlife management sort of way. FAA's "birdman" is Mike Harrison, who explained that FAA and the Department of Interior's Fish and Wildlife Service are working together on research projects that may help to reduce bird strikes. The projects outlined in an agreement between the two agencies range from the study of bird-strike hazards at airports, including the development of prototype risk maps, to surveys of earthworms that emerge on rain-soaked runways at certain airports. All in all, Harrison and the Fish and Wildlife



Service biologists are using their knowledge of wildlife management to keep birds and airplanes separated, especially around airports, where they are introducing a limited feathered flow-control concept.

Harrison is the agency's only wildlife biologist. While he works in the Office of Airport Standards at Washington headquarters, he has an overall view of the bird problem.

Based on bird-strike-incident reports, bird hazards exist primarily near airports, mainly because over 60 percent of all bird strikes occur below 500 feet above the ground. There are situations where bird strikes occur enroute, especially during the spring and fall bird migrations, when collisions with ducks and geese are com-

monly reported up to 6,000 feet. Harrison pointed out that a general aviation pilot planning a flight at night during migratory seasons should fly as high as possible to avoid birds crashing through the aircraft windshield. He also added that there is no safe airspace. A bird strike occurred over Egypt at 37,000 feet.

On the other hand, Rick Macha, who works in the Dallas/Fort Worth (Tex.) Tower with the Airways Facili-

Photo by David R. Frazier



Gulls congregate on a Langley AFB, Va., taxiway to feed on worms that crawl up on the concrete after a rainstorm.

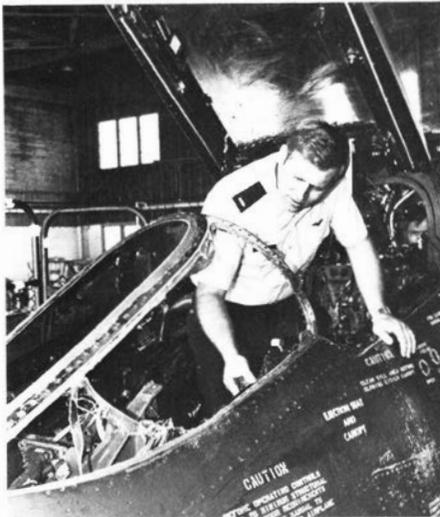
Photo by M. Harrison

ties Sector, doesn't know much about the overall picture, but he does know about pigeons. In fact, he knows more than he really wants to know about the pigeons that perch on microwave relay antennas and mess up the scene around the tower. Macha, who is a licensed pest control operator, is using his knowledge to rid the tower of perching pigeons because bird droppings can cause health and safety problems.

Charlie Nathman, also of the Dallas-Fort Worth Sector, reports another and rather unique problem with birds. Various avian species, particularly woodpeckers, are pecking holes in Urethane foam roofs of FAA buildings. The birds apparently were after the bugs and worms that crawled up on the roofs. The problem is that after the birds devour the bugs, they keep right on pecking right through the roof.

The technicians at first tried to scare the birds away with plastic owls that, like scarecrows, guarded the roofs. However, when the owls didn't move for an extended period, the birds got wise and returned for a feast of bugs and worms and roof.

The technicians have now decorated



Lt. Fred Wilson examines the shattered windscreen of an F-4 Phantom that struck a snow goose at 550 mph this spring near Boise, Idaho. The impact disabled the pilot, and Lt. Wilson, who is not a rated pilot, had to land the plane.

Photo by David R. Frazier

the roofs with rubber snakes, which so far have kept the nuisance birds away. But who knows if the birds are going to wise up again. Maybe they won't; after all, snakes aren't supposed to move very much.

Dick Cullerton, chief of the Engineering and Maintenance Division at FAA's Dulles International Airport near Washington, D.C., on the other hand, is not concerned with woodpeckers but with seagulls, although the nearest saltwater is 50 miles away.

He and his technicians are assisting the Fish and Wildlife Service in devising techniques to keep gulls, ducks and geese away from the runways. Several methods are being tested. A balloon with a hawk-like kite hanging from it has been tethered above one of the ponds most favored by birds. Fish and Wildlife Service biologist Les Terry has booby-trapped one of the ponds by stretching lengths of wire just above the surface of the water. This makes it rough for the birds during the last moments of their approach for a landing and discourages their return.

In the New York City area, birds are being banded and dyed with a harmless pink dye so that they can be tracked as they travel between feeding and roosting areas in the vicinity of Newark (N.J.), LaGuardia and John F. Kennedy airports in New York City, all of which verge on water—Newark on brackish marshes, LaGuardia on Flushing Bay and JFK on Jamaica Bay.

As the birds are recaptured, valuable data will be gathered on their

itineraries and habits. Speaking of these programs and still others being tried, Harrison said, "The vast majority of our bird-control activities are non-lethal. Many—such as the live trapping and release programs—use highly specialized techniques to protect the birds. FAA does not want to get rid of the birds. The agency just wants to separate the birds from the airports for the mutual benefit of both."

In another effort, the Aircraft Safety Division at the Tech Center is working with manufacturers of high-bypass-ratio jet engines to determine exactly what is taking place. Everytime there is a bird strike involving one of these engines, the incident is reported and is recorded. The number, types and sizes of the birds involved are tabulated. Also noted is the phase of the aircraft's flight, the time of day and the effect the strike had on the engine. So far, approximately 270 incidents have been re-

ported. About one-third of these warranted follow-up investigations.

The result is that a lot of birds are being saved from disastrous jousts with high-speed aircraft, and the safety of flight is being enhanced. However, until birds are equipped with transponders or read and abide by the rules of the air, the risk of a bird strike will continue. ■

Feeling Fit

Edited by Henry J. Christiansen

Item: Fatigue is a hidden factor in accidents.

Fatigue: Physical or mental weariness or exhaustion resulting from exertion; that detrimental alteration or decrease in skilled performance related to duration, or repetitive use of that skill, aggravated by physical, physiological or psychological stress. Simply stated, the ability to perform to capacity no longer exists.

Fatigue is an insidious cause of over-confidence and can lead to poor judgment, mistakes and accidents; and yet, few people recognize or appreciate the effects of fatigue on performance.

The major causes of fatigue include:

- Sleep Loss. The amount of sleep required varies among individuals, and the amount of sleep considered adequate is based upon the level of activity prior to sleep.

- Caffeine/Nicotine are two stimulants mentioned because of their uncontrolled availability, frequent use and misconceptions regarding their ability to increase alertness. These two drugs can initially produce a sense of heightened awareness and quickened mental alertness that masks the effects of fatigue.
- Improper Diet is a common cause of fatigue. High sugar intake creates a fatigue prone situation. Initially, sugar intake has the effect of sharply raising the blood-sugar level, causing the body to overreact and then sending the blood-sugar level below normal.
- Lack of Exercise, the absence of a regularly scheduled and properly structured exercise program, lowers physical resistance to fatigue.

- Emotional Stress caused by domestic problems, financial concerns, worries over the working environment as well as other mental/emotional stress contribute strongly to fatigue.

- Boredom is another major cause of fatigue: One hour of boredom can consume as much nervous energy as an entire day of concern to a pilot during long flights in VFR conditions, day or night.

To combat the adverse effects of fatigue, one must pursue the mirror-image of the above causes—i.e., get sufficient sleep, limit intake of caffeine/nicotine, eat the proper foods, exercise, etc.

(Source: *RotorNews*, Helicopter Association International)

Mr. Christiansen is the Southwest Region's Special Projects Coordinator, as well as an inveterate runner (his third year in the Boston Marathon) and health buff. This column was coordinated with the Regional Air Surgeon.

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