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Administration**





Research Highlights

Tests of data-link displays for the Discrete Address Beacon System (DABS) have been going on for more than a year at the FAA Technical Center to determine what types of information are best suited for the subsystem. It will also establish the best sequence for priorities and overrides, with collision and low-altitude warnings

likely to get top billing.

Here, Tech Center engineer Ivan N. Zoltan works a command entry keyboard for readouts on a panel-mounted CRT in a mockup of a Beech Queen Air cockpit. Now, the data link is being operationally tested in the center's two Grumman aircraft. In addition, a portable unit has been devised for testing in other planes.

In addition to DABS' ability to interrogate individual airplanes, the digital data link may offer weather information and a digital weather radar map, wind shear advisories and ATC instructions, as well as the collision and low-altitude warnings.

Front cover: Detroit Metropolitan Airport Tower.

Photo by Neal Callahan



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Group Therapy

The Aircraft Owners and Pilots Association takes a look at FAA's Operation Rain Check and concludes that it's an excellent program for defusing the tension between pilots and controllers—not a complete answer but a step in the right direction.

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Shot Down Before It's Airborne

What really happened to America's supersonic transport? In an excerpt from the fourth and final volume of the agency's history of FAA and its predecessors, "Safe, Separated and Soaring," FAA WORLD relates the factors that kept the United States out of the SST race.

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Cornelius Coffey has been one with aviation for more than half a century as pilot, mechanic and instructor, but now this black pioneer has been accorded the recognition and honors he deserves.

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By Paul E. Hansen

A holder of a commercial certificate, he has logged about 6,000 hours as a businessman/pilot.

Group Therapy

Operation Rain Check Softens Pilot's Gripes

Ever since the first air route traffic control center (ARTCC) began operation in October 1935, the relationship between controllers and pilots has changed very little. The air traffic control system has evolved into a complex, expensive and awesome mix of well-trained personnel and sophisticated electronic devices, but the basis of operation remains the close voice communication between pilot and controller.

Over the years, this relationship has become somewhat strained, based as it is on equal measures of mutual respect and suspicion. It is a love/hate situation, fraught with conflicts and rivalries. These tensions may well have served as the seed from which Operation Rain Check has grown.

The original concept for Operation Rain Check generally is credited to Joe Basham of the Oakland Center. The program is primarily an educational one, to introduce pilots to the air traffic control system. But it also provides a forum in which pilots and controllers can talk face-to-face.

The first meeting of the two groups was held in 1967. Since that time, Operation Rain Check has gained official sanction from Federal Aviation Administration headquarters in Washington, D.C. The program operates on a regional basis, and both scheduling and format vary from center to center.

Unfortunately, some of the 20 ARTCC facilities still do not participate in the program. Others hold sessions occasionally. Only a few facilities conduct the program on a regular basis.

In the classroom at Los Angeles Center, Ron Franson, an ex-military-helicopter pilot, is the star of Operation Rain Check. As an eight-year veteran of the LA Cen-

ter, Franson is an experienced and knowledgeable controller. He knows his material cold. He can rattle off the volume of last year's traffic count, the square-mile area of air-space controlled by the facility, the environmental conditions required to prevent computer problems, the cost of the center's telephone service and the meaning of every acronym the FAA ever has invented. He knows the rule book intimately and is able to make most things in it seem almost sensible.

"(The program) gives pilots and controllers the opportunity to see the other side . . . discuss our mutual problems and develop new insights."

Franson is completely at ease discussing the subtleties of visual and contact approaches, military operations areas and the problems that arise in allowing RNAV (area navigation) clearances.

Referring to Operation Rain Check, Franson said, "I am one hundred percent for this program. It gives pilots and controllers the opportunity to see the other side. And it allows us to discuss our mutual problems and perhaps develop some new insights.

"There are three goals to Rain Check," Franson explained. "The first is to get the pilots completely familiar with the physical operation of the air route traffic control center. Our second goal is to clear up any question that a pilot may have about the en route environment and the procedures involved. And third, which I feel is most important, is to give the pilot an opportunity to sit with a work-

ing controller, see the traffic on a scope, listen to the pilot call up, learn how the controller clears and works his traffic and generally just ask every question he ever has had about en route control operations.

"Contrary to some widely held opinions," Franson assured us, "we do not sit at the display with a ticket book just watching for the first mistake some pilot makes so we can say, 'Gotcha!' then write him up and send it off to [the general aviation district office]. That is not what we are here for. We are a service organization, working for the flying public.

"The majority of the controllers on the floor feel that Rain Check is a real benefit to the system," Franson said. "You will find that these controllers really enjoy having pilots come in and sit at the sector with them and rap and discover that the controller is really a human being, too," he concluded.

"It is unfortunate," a middle-aged pilot said, "that we cannot do more of this same sort of thing with the controllers. It certainly would be nice if the controllers could be in the airplane with you when you are flying a bumpy [instrument landing system] approach, and your wife is screaming at you for being there, and the kid is puking over your shoulder, and the approach plate falls under the seat, and the controller on the ground decides to send you off to hold somewhere," he said.



An impressive feature of the air route traffic control center is the dynamic simulation laboratory. Extensively used for controller training, it is a valuable teaching tool for Rain Check; after working the sectors, pilots can appreciate the system's complexity.

Photo by Paul E. Hansen

"I come out of the Bay area, which I know," the pilot continued. "I get down here, and the controller starts handling me as if I had a copilot and a flight engineer and a secretary to take down his latest 15-minute clearance containing intersections that no one ever have heard of. He knows that clearance by heart; but if I do not get everything straight the first time, he acts as if I am an idiot and a complete intrusion into his life. If it were not for us pilots, he would not have a job!"

This little monologue brought forth a chorus of knowing and sympathetic chuckles and the observation from an angry pilot that "We never have lost a controller's life as the result of a faulty vector or a botched instrument approach. The controllers cry about heavy responsibility and stress. But the worst thing they have to worry about is falling out of a nice comfortable chair and getting a carpet burn.

Undoubtedly, this pilot's words struck a

responsive chord with the other pilots.

Agreements and expansions of the thought were being mumbled between neighboring members of the group when the facility intercom loudly announced a warning.

"The facility will go on stand-by power in five minutes! The facility will go on stand-by power in five minutes!"

On the tick of five elapsed minutes, the classroom went completely dark for a moment. Then the lights came on again. In that instant, the entire power load for Los Angeles Center had switched from the commercial power source to the on-site generating plant, as part of the regular test program.

In an adjacent building, four 785-hp diesel generators, capable of providing 2,200 kilowatts of power, are available to take over should commercial power sources fail or suffer interruption. There is enough fuel stored on the side to run the diesel generators for 30 days, if necessary. In addition to this stand-by generator, there is an enormous battery network that supplies the required energy to maintain memory and operation of the computers during the changeover.

Franson acknowledged the brief classroom blackout with an explanation of the load priorities involved in the automated power-switching system and then continued with an extremely meaningful anecdote concerning the image of general aviation.

"About three weeks ago, I addressed a luncheon meeting of a group of businessmen. They were all non-pilots. I explained to them what we do here at Los Angeles Center, using a program designed to acquaint non-pilots with air traffic control.

"When the subject got around to separation of participating IFR aircraft, there were a number of gentlemen who wanted to know why we simply did not separate the airlines from all those little airplanes."

"I tried to explain that it would be just about impossible to do this without becoming too restrictive on the general aviation pilots, and the response from the audience was, 'So who cares?'

"I certainly do not agree with this position, but there is a lot of backing for it. People as a rule have the thought that private airplanes are dangerous. Each of you really should get involved in a program to educate the non-pilot public about the facts and the importance of general aviation."

A young pilot responded, "That is a great idea but it is awfully hard to fight things such as the biased trash presented as fact on the 60 Minutes show."

"A lot of our problems are created and

fed by the media," another said. "And it is damned hard to believe that it is all the result of simple ignorance.

"Just this last week," he said, "I read a story about a DC-10 that intentionally was vectored into a thunderstorm by the controller because the controllers were being denied their free rides on the airlines. Supposedly, lives were being risked in the maneuvering between the controller's union and the airlines. I do not know if this story was true—I doubt it. But the point is that it made the national news, and the impact will be to impress some pilots that the controller is indeed the enemy."

No one in the group of 40 pilots, however, even remotely considered Franson as a part of "The enemy." With 1,200 hours of rotary-wing experience and another 200 hours in Cessna 150s and 172s, Franson no longer flies because, "I don't enjoy it any longer and it costs too much." But he retains an obvious respect for those who do fly and a sensitivity to their problems.

"It is really difficult for the average private pilot. How much time does he get to fly in the system—once a week, once every two weeks? That is where the problem comes up—currency and proficiency. And now, the cost of flight time is just going through the roof. If it is not business-related and a deductible expense, who can afford the costs?"

Although Franson-the-Rain-Check-

coordinator is sympathetic to pilots' problems, Franson-the-FAA-controller does not believe that the pilots are doing all they can to help themselves.

"From my experience here with Rain Check, I feel there is a lot of misunderstanding about what sort of services the pilots expect from us in a TRSA [terminal radar service area] and in the en route environment," he said. "Many pilots really do not know what is going to happen in each of these situations."

"The information is there and available, but most pilots just do not spend enough time with the *Airman's Information Manual*. It is perhaps the best publication that the FAA puts out."

One of the three flight instructors agreed, saying, "If a pilot knows the procedures, knows what he wants and knows how to ask the controller for it, he almost always will get what he wants. And I strongly feel that programs such as this one, if it can be made available to more general aviation pilots, will expand our awareness of the system and help us perform better in it."

During the weekend Rain Check session, the pilot class was separated into two groups. The members of one group were issued a standard controller's headset and were escorted down to the main floor of the control facility. There, each person's set was plugged into the sector position to which he was assigned, and had the opportunity to watch, listen and learn as a controller worked live traffic.

The jargon on the ground-bound side of the radar screen is not new to an experienced pilot. But the clutter of data blocks,



Ron Franson, Los Angeles Center's Rain Check coordinator, brings to the classroom years of experience, as both a pilot and a controller.

Photo by Paul E. Hansen

airway indicators, VORs and spurious radar returns tends to be a bit confusing for a while.

Pilots in the second group were introduced to what is one of the most impressive features of the ARTCC—the dynamic simulation laboratory. The dy-sim lab is used extensively for controller training. It is tied directly into the ARTCC computer data base and therefore can present to the trainee the actual traffic situations that are occurring. Or the instructor can create any other situation he desires from his console. Since this simulator duplicates the controller sector positions on the main floor of the facility, the dy-sim lab provides the ultimate in reality for the controller-in-training. It is also a very valuable teaching tool for Operation Rain Check. After a thorough briefing by Franson in the dy-sim lab, the pilots had a much greater appreciation for the problems of the controller.

After everyone had "worked the sectors," the discussion continued, but the tone was slightly different.

One pilot said, "I have been an IFR pilot for about 10 years now, and this is the first time I ever have had the opportunity to see just how large and complex this system is. Now that I have been able to sit next to a controller at the scope and watch him work the aircraft in the system, I will be able to sit in the cockpit and visualize just what might be going on when I am given a holding pattern or a delay vector or something like that."

Another offered, "It really was interesting to me to see what a truly valuable

device the encoding altimeter is, both to the controller and to me as a pilot. Sitting there at the scope and seeing the difference that mode C capability makes has convinced me that the expense of [installing the transponder] was well worth the money."

From the back of the room a third pilot said, "Many IFR pilots, especially those flying in the Los Angeles basin, have de-

. . . the pilots were of one mind concerning the program they had just attended: They were damned glad they had come.

veloped an 'adversary awareness' when dealing with controllers. It is sort of like the Big Brother concept. I certainly recognize this in my own feelings about controllers, and I believe this program has done much to dispel that feeling. It really helps to see the other side of the coin.

"I think that we always could get along pretty well with the guys on the floor; but the problems seem to come from the lawyers in Oklahoma City and Washington D.C.," he concluded.

The discussion continued and ideas were kicked around about increasing the required hours for a private pilot license. Many agreed that the current 40-hour minimum requirement is not enough for pilots who operate in high density areas; but the costs are such that any increase in the requirements would discourage significantly prospective entries into general aviation.

One man, a pilot with two sons going through flight training, said, "You could require 1,500 hours, and there still would be dummies in the system. And you just cannot legislate stupidity out of the system or out of people."

"He is right," another agreed. "I was on the scope less than an hour ago and watched as an airline captain got lost. Here is one of the real myths of aviation: the airline captain that does everything impeccably, never loses his cool, never gets lost or any of those dumb things that we private pilots do. Well, that is a bunch of nonsense, and we have been taking a bum rap."

This session of Operation Rain Check came to a close as the general aviation pilots laughed at the plight of the hapless airline crew. The discussion had touched on many things. The pilots and controllers had talked face-to-face. The pilots had added new words to their vocabularies and depth to their understanding of the air traffic control system. Varied opinions had been expressed on many things, but the pilots were of one mind concerning the program they had just attended: They were damned glad they had come.

Rain Check may not be the final answer to the problems confronting pilots and controllers," said one pilot as he was leaving. "But it certainly is one small step in the right direction." ■

Aeronautical Center

- Leo C. Smith, chief of the Systems Development and Analysis Staff, FAA Depot.
- Forrest J. Spencer, supervisory electronics technician, Office of Flight Operations, Flight Standards National Field Office.

Alaskan Region

- Duane G. Ambuehl, team supervisor at the Fairbanks Flight Service Station.
- David A. Brown, deputy chief of the Fairbanks FSS, from the Bethel FSS.
- Trent S. Cummings, chief of the Gulkana FSS, from the Anchorage FSS/IFSS.
- James E. Hughes, chief of the Training Branch, Personnel Management Division.

Central Region

- Timothy J. Casey, team supervisor at the Kansas City, Mo., Flight Service Station, from the St. Louis FSS.
- Victor F. Eickelberg, team supervisor at the St. Louis FSS in Chesterfield, Mo.
- Robert K. Lister, team supervisor at the Cedar Rapids, Iowa, FSS.

Eastern Region

- Charles F. Flohr, Jr., team supervisor in the New York Common IFR Room.
- Jesse G. Fodero, team supervisor in the Buffalo, N.Y., Tower.
- David F. Gandolfo, chief of the Niagara Falls, N.Y., Tower, from the Operations Branch, Air Traffic Division.

- Charles R. Reavis, assistant chief at the Washington ARTCC in Leesburg, Va., from the Honolulu Tower.
- William J. Stehling, deputy chief of the Rochester, N.Y., Tower.
- William Van Bruinisse, team supervisor at the New York CTR, from the La Guardia Tower, Queens, N.Y.
- Peter E. Wood, team supervisor at Andrews AFB Tower, Camp Springs, Md.

Great Lakes Region

- Edwin R. Berg, area officer at the Minneapolis ARTCC.
- James A. Grover, Jr., assistant systems engineer at the Cleveland ARTCC.
- Lee W. Peterson, assistant chief at the Chicago ARTCC, from the Operations, Procedures and Airspace Branch, Air Traffic Division.
- Richard A. White, operations supervisor at the Chicago ARTCC.

New England Region

- Clifford E. Buxton, team supervisor at the Bedford, Mass., Tower.
- Anthony R. Silva, chief of the General Aviation and Air Carrier Branch, Flight Standards Division, from the Westfield, Mass., General Aviation District Office.
- Donald L. Turner, chief of the Evaluation Branch, Air Traffic Division, from the Operations, Procedures and Airspace Branch.

Northwest Region

- Duane E. Cornell, unit chief, Seattle Airway Facilities Sector Field Office, from the Ft. Lawton AF Sector Field Office.
- Arnold Guadalupe, team supervisor at the Seattle-Tacoma, Wash., Tower, from the Plans and Programs Evaluation Branch, Air Traffic Division.

- Ralph L. Heape, chief of the Portland, Ore., AF Sector Radar Unit, from the Program and Planning Branch, Airway Facilities Division.
- Robert W. Hofferber, chief of the Ft. Lawton, Wash., AF Sector Field Office, from the Seattle AF Sector Radar Unit.
- George H. Leonard, chief of the Hoquiam, Wash., Flight Service Station, from the Portland FSS.

Pacific-Asia Region

- Jennings O. Larson, chief of the Honolulu Flight Standards District Office, from the Air Carrier Branch, Air Transportation Division.
- Michael J. Musgrove, chief of the Nav/Comm Unit, Finegayan, Guam, Airway Facilities Sector.
- Ward D. Orsted, chief of the Molokai, Hawaii, Tower at Hoolehua, from the Maui Tower.
- James E. Strange, chief of the General Aviation and Air Carrier Branch, Flight Standards Division, from the Honolulu FSDO.
- Rodolfo R. Vela, team supervisor at the Honolulu ARTCC.

Rocky Mountain Region

- Walter G. Allard, chief of the Airway Facilities Sector Field Office in Pueblo, Colo., from the Casper, Wyo., AF Sector Field Office.

Southern Region

- James D. Bray, chief of the Anniston, Ala., Flight Service Station, from the New Bern, N.C., FSS.
- Joseph D. Brown, chief of the Macon, Ga., FSS, from the Key West, Fla., FSS.
- Thomas A. Cowan, team supervisor at the Miami International Flight Service Station.
- Marvin D. Emerson, Jr., team supervisor at the San Juan, Puerto Rico, Center/RAPCON.
- Billy N. Evans, chief of the Greenwood, Miss., FSS, from the Nashville, Tenn., FSS.
- Pedro Garcia, chief of the Isla Grande Tower in San Juan, from the Ponce, P.R., Tower.
- Paul R. Knight, team supervisor at the Jacksonville, Fla., ARTCC.
- Marvel K. Kruse, assistant chief at the San Juan Center/RAPCON.
- Michael J. Pontrelli, team supervisor at the Ft. Lauderdale, Fla., Executive Airport Tower, from the Charlotte, N.C., Tower.
- Howard Rainey, team supervisor at the Greensboro, N.C., Tower, from the Memphis, Tenn., Tower.
- David L. Smith, team supervisor at the St. Petersburg-Clearwater, Fla., Tower, from the Tamiami Tower in Miami.
- Frederick Steeves, chief of the San Juan Airway Facilities Sector, from the Airway Facilities Branch.
- Maurice E. Wright, assistant manager of the Montgomery, Ala., AF Sector, from the Headquarters Western Area Operations Branch, Technical Assistance Division, Office of International Aviation Affairs.

- Douglas Q. Yarbrough, supervisory electronics technician in the Covington, Ky., AF Sector, from the San Juan AF Sector Field Office.

- Raymond Ybarra, assistant chief at the Balboa, Canal Zone, ARTCC.

Southwest Region

- Penelope E. Benz, team supervisor at the Albuquerque, N.M., Flight Service Station, from the Tulsa, Okla., FSS.
- Billy J. Burns, unit supervisor at Barksdale AFB, La., in the Little Rock, Ark., Airway Facilities Sector, from the Dallas-Fort Worth Airport AF Sector.
- Kenneth F. Davis, program support officer at the Austin, Tex., AF Sector, from the Oklahoma City AF Sector.
- Alan K. Gabbert, supervisor in the Tulsa unit of the Oklahoma City AF Sector.
- William A. Guthery, chief of the Tucumcari, N.M., FSS, from the Houston, Tex., FSS.
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- Patrick C. Serda, systems engineer at the Albuquerque ARTCC AF Sector.

Western Region

- William E. Bateman, chief of the Upland, Calif., Airway Facilities Sector Field Office.

- Joseph Cozzetto, team supervisor at the Ontario, Calif., Flight Service Station, from the Lancaster, Calif., FSS.

- Thomas S. Kannan, assistant chief at the San Diego, Calif., TRACON, Miramar Naval Air Station, from the Coast TRACON, El Toro MCAS, Calif.

- Joseph H. Kelley, deputy chief of the McClellan AFB RAPCON, Calif., from the Plans, Programs and Evaluation Branch, Air Traffic Division.

- Kathryn E. Kuhlmann, team supervisor at the Long Beach, Calif., Tower.

- Billie R. McWhirter, chief of the Mather AFB AF Sector Field Office in the Sacramento, Calif., AF Sector.

- Gordon E. Rhodes, team supervisor at the Ontario Tower.

- Marvin M. Shappi, team supervisor at the Orange County Airport Tower in Santa Ana, Calif., from Brackett Field Tower in La Verne, Calif.

- Jerald D. Shourds, team supervisor at the Los Angeles Tower.

- James R. Tokarski, chief of the Grand Canyon, Ariz., Tower, from the Monterey, Calif., Tower.

- James H. Welton, chief of the Chino, Calif., Tower, from the El Monte, Calif., Tower.

- Robert G. Wilson, chief of the McClellan AFB, Calif., AF Sector Field Office in the Sacramento AF Sector.

- Leland J. Wingard, team supervisor at the Napa, Calif., Tower, from the Las Vegas, Nev., Tower.

Shot Down Before It's Airborne

The environmental movement that sprang up in the late 1960s hit full stride in the early 1970s, when it scored a series of stunning, rapid-fire successes. Its most spectacular victory, perhaps, was the cancellation of the U.S. supersonic transport development program. The story of that cancellation is told in the following piece, extracted from Richard J. Kent's "Safe, Separated and Soaring," the final volume of a four-volume history of FAA and its predecessor agencies, which is due to appear this fall.

Throughout the history of the civil supersonic transport development program, SST opponents had lacked an effective argument with which to fight the program. Although the charge that the SST effort was soaking up money that might be better used for solving the problems of crime, poverty and urban blight received attention in powerful newspapers and liberal journals, that issue had not generated much enthusiasm in Congress.

Starting in 1970, however, SST opponents found both an effective

counter-argument to the continuation of the SST and a forum where they could state that argument.

Historians will long regard 1970 as the year of the environment. On its first day, President Nixon signed into law the National Environmental Policy Act, which created the President's Council on Environmental Quality and firmly committed the Federal Government to the goal of improving the natural environment. Enthusiasts staged an "Earth Day" celebration to publicize the ecology movement. The wide-

spread concern over the environment generated tremendous political pressures on Washington politicians to exhibit their concern for the issue. Opponents of the SST were very skillful in exploiting this phenomenon and channeling it against a project that they claimed would be a blatant destroyer of the environment.

The first public signs that the SST was in trouble came not from Congress but from within the Nixon administration itself. The newly appointed members of the White House Council on Environmental Quality—Russell E. Train, Dr. Gordon MacDonald, and Robert Cahn—publicly expressed grave environmental reservations about proceeding with the SST. They cited sonic boom, noise and stratospheric pollution as inevitable by-products of commercial supersonic flights. Yet if these men had doubts, the President apparently did not. In February, Nixon sent a \$290 million fiscal 1971 SST appropri-

An early Boeing SST design concept.

Photo courtesy of Boeing Corp.



tion request to the Congress. But the damage had been done. A dangerous chink had been opened in the previously impenetrable political armor of the SST program.

If the environment provided the cause for the debacle, a hearing before the Joint Subcommittee on Economy in Government, chaired by Sen. William Proxmire, provided the battleground. Before the glare of television cameras, Proxmire was able to orchestrate a devastating attack on the SST. His star witnesses against the program were Dr. Richard L. Garwin and Russell Train.

Garwin, a member of the President's Science Advisory Committee, charged that "the SST will produce as much noise as the simultaneous takeoff of 50 jumbo jets . . ." Train reinforced Garwin's charge. He testified that the proposed aircraft's sideline noise was the SST's most significant unresolved problem. Train wanted to make it a Federal policy that "the noise environment in the vicinity of all our airports is not to be degraded in any way." Train also expressed concern over the potential

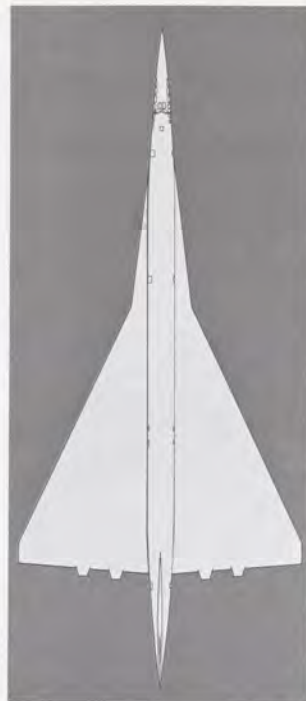
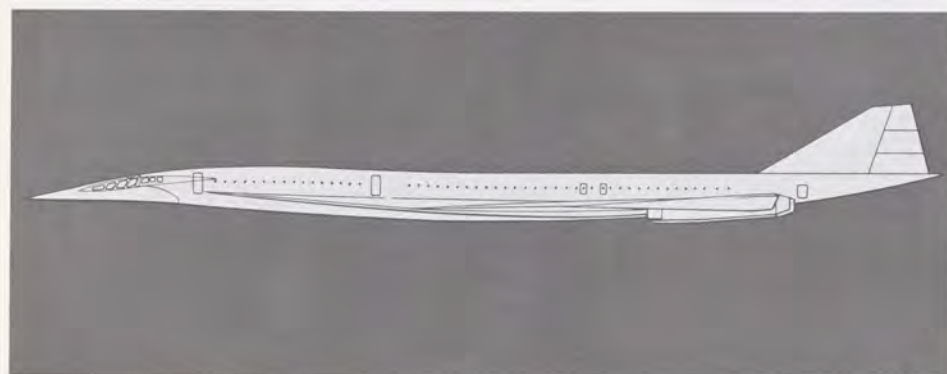
pollution of the stratosphere by a fleet of SSTs.

Some scientists speculated that the large quantities of water, carbon dioxide and nitrogen oxides that the SSTs would dump into the higher atmosphere might alter the heat balance of the atmosphere or destroy part of the protective ozone layer that shields humans from ultraviolet radiation. Climatic changes and an increase in skin cancer might result if this speculation proved correct. Train urged that the Government substantially increase its research on these potential problems.

Senator Proxmire capitalized on Garwin's charges, which made newspaper headlines, and termed Train's testimony on water vapor and ozone a "blockbuster." Witnesses for the DOT, including Under Secretary James Beggs and William M. Magruder, who had recently been appointed Director of the Office of

The Lockheed SST design.

Photo courtesy of Lockheed Corp.



Supersonic Transport Development, tried to rebut Garwin's testimony by arguing that he was playing games with numbers. In terms of the effective perceived noise decibel standard (EPNdB) used by FAA, the SST was three to four times as noisy as a 747, not 50 times as noisy. Even here, DOT witnesses claimed that the SST was being treated unfairly. They argued that sideline noise was only one part of the noise footprint of an aircraft. Since the SST was expected to perform well in terms of approach and takeoff noise over surrounding airport communities, they argued that using the transport would actually result in an overall improvement in aviation noise. Yet, despite their best efforts, they had to admit that the SST was not likely to meet all of FAA's existing noise regulations for subsonic jets.

Administration witnesses faced the even more difficult task—and this would continue in the months ahead—of defending the SST against the unknowns of stratospheric pollution. Because there was so little concrete evidence on the question, the DOT could not begin to give convincing defense of the SST's effect on the stratosphere. About the only thing that the SST proponents could do was to support research programs both in noise and environmental effects. In July 1970, Magruder announced the formation of an Environmental Advisory Council and an SST Community Noise Advisory Council to explore these controversial areas.

In the meantime, the DOT tried to limit the debate on the 1971 appropriation request to the question of the prototype program rather than the environmental impact of a hypothetical fleet of SSTs. Even the environmentalists admitted that two prototypes would not have serious ecological effects.

SST opponents, who wanted to kill the program, did not want the debate limited to just the prototype appropriation. They argued that once the prototypes were flying, it would be more difficult to stop the program, even if environmental questions remained unanswered. If the Federal Government was indeed serious about the issue of the environment, it should act now in order to set an important precedent.

The impact of the Proxmire hearings and the lobbying efforts of environmental groups like the Friends of the Earth Coalition Against the SST, the Environmental Defense Fund and the Student Council on Pollution and Environment was stunningly revealed in the House vote on the 1971 SST appropriation. Although recommended by the House Appropriations Committee, the bill narrowly passed by a 176 to 163 margin. Elated by the closeness of the vote, which indicated that the SST was politically vulnerable, the environmentalists and other opponents of the project now focused their efforts on the Senate.

Both the backers and opponents of the SST conducted an intensive lobbying campaign. The White House, which had previously allowed members of the administration to express their own views on the issue publicly, now

cracked the whip over its troops. It made a concerted effort to present a united front on the question of prototype funding. The administration, together with Boeing and General Electric, also began lining up support for the SST from major political groups, including organized labor. Sens. Henry M. Jackson and Warren G. Magnuson carried the fight within the Senate.

But if the Nixon administration was bringing in its heavy artillery, so also was the opposition. The anti-SST forces were surprisingly successful in making inroads within the aviation community itself. While the Air Transport Association supported the continuation of the projects, its support was much weaker than might have been expected. The airlines were experiencing a recession, which cut into their profits and their enthusiasm for a financial commitment to a new generation of aircraft. The Airport Operators Council International opposed the SST pending a guarantee

Richard J. Kent's "Safe, Separated and Soaring: A History of Federal Civil Aviation Policy, 1961-1972" may be purchased in a hardcover edition from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (The stock number and price have not yet been set). The first three volumes of this history series can also be ordered from GPO: "Bonfires to Beacons, 1926-1938" (Stock No. 040-007-00419-2) \$8.00 a copy, "Turbulence Aloft, 1938-1953" (Stock No. 050-007-00496-9) \$8.50 and "Takeoff at Mid-Century, 1953-1961" (Stock No. 050-007-00355-2), \$6.00.

that the aircraft would reduce rather than increase airport noise problems.

Prominent Republican and Democratic politicians joined the bandwagon against the program. New York Mayor John Lindsay and New York Gov. Nelson Rockefeller pledged to prevent the SST from landing in their state, the most lucrative potential market for the aircraft.

Scoring well on the environmental issue, the SST opponents broadened their campaign to include economic questions as well. The Coalition Against the SST and the Sierra Club polled 16 prominent economists on the aircraft's economic impact on the nation. Only one gave the project even a qualified endorsement; the rest foresaw an adverse impact.

The proponents of the SST, perhaps sensing a slippage of support, moved to postpone the key Senate vote until after the November elections. This, they reasoned, would reduce the political heat on wavering senators.

Then, in the last days before the final Senate vote, Senator Magnuson tried to take some of the environmental sting out of the debate by offering a bill to ban overland flights of the SST and require it to be quieter than the existing airline fleet. Magnuson's bill passed the Senate but failed to moderate the demands of the environmentalists, who scented total victory. When the December 3 vote was tallied, the Senate had voted to reject the administration's 1971 SST appropriation request.



Sen. William Proxmire (Wis.), who chaired hearings on the SST before the Joint Subcommittee on Economy in Government.

The project was not yet dead, however. Since the House and Senate had passed different versions of the DOT appropriation bill, the different bills were sent to a conference committee. The SST backers concentrated their efforts on winning a reversal in the conference. They scored an important victory when the House rejected a motion to instruct its conferees to go along with the Senate decision. Another followed in quick succession. On December 10, the conference committee approved a \$210 million compromise SST appropriation, but Senator Proxmire filibustered against a Senate vote on the committee's report. A virtual standoff was the result. Cloture moves by the pro-SST forces failed to shut off the filibuster.

With adjournment held up by the filibuster, a compromise was put together by Majority Leader Mike Mansfield and Minority Leader Hugh Scott. The compromise permitted a three-month continuation of the SST, after which the project would receive a new House and Senate vote. In return for dropping his filibuster, Proxmire received assurances that early in the next Congressional session, the Senate would have a straight up-or-down vote on the continuation of the advanced jetliner.

The Senate compromise set the stage for an intense round of lobbying in the early months of 1971. The environmen-

talists pressed their attack with charges that SST operations would lead to widespread skin cancer and other health problems. Administration spokesmen denied these charges and warned of the great economic dangers of an SST cancellation. When the issue was put to the vote in the House, where the project had previously received its strongest support, the anti-SST coalition won a narrow 215 to 204 victory. On March 24, the Senate in a 51 to 46 vote decided to follow suit. Later efforts to revive the program received a fatal blow when Boeing president William Allen stated that it would cost the Government an additional one-half billion dollars to get the project going again.

Those intent on changing the patterns of Government spending, its close cooperation with large corporations and its determination of national priorities had selected the SST as their chief target. But most of all, the advanced airliner became the symbol of America's past response to its environment. The ecology movement, needing a clear-cut victory to establish itself as a credible political force, turned the SST into a suitably grotesque dragon, which it slew in heroic combat. The long-term significance of the SST cancellation remains clouded. There is no doubt, however, that the death of the American airliner sent shockwaves throughout the American aviation industry. ■

Airborne But Only Briefly

The first supersonic transport to fly was the Soviet Union's Tupolev-144 on Dec. 31, 1968—two months before the Concorde's inaugural flight. Yet, the Anglo-French Concorde's are the sole examples of this type still plying the airways.

The Russians built 13 of its larger-than-Concorde aircraft designed by Dr. Alexei Tupolev, famed for a generation of Soviet aircraft. Despite the Soviet's early start in supersonic technology, the TU-144 has had a history of poor performance.

On June 3, 1973, while tens of thousands watched at the Paris Air Show, a TU-144 exploded during a demonstration flight, killing six crewmembers. The fatal flight followed a successful demonstration by the Concorde minutes earlier.

With very little modification to the model lost in Paris, the TU-144 began regular supersonic cargo and mail flights under the Aeroflot banner on Dec. 26, 1975, between Domodedovo Airport in Moscow and Alma Ata, the capital of Kazakhstan, 2,025 miles apart. Aeroflot began scheduled passenger flight between the same two points in November of 1977, making the run in just under two hours. The SST made about six flights daily with 80 of its 140 seats occupied. In June of



the following year, after an accident on a non-passenger flight and after 102 successful flights, the TU-144 was grounded.

There has been no further news of route flying, although there have been reports that the TU-144 is sometimes used for cargo and mail flights between Moscow and Tashkent, the capital of the Uzbek Republic.

Then, in June of 1979, a new Tupolev 144D, equipped with variable bypass engines—said to be 50 percent more economical than those on the 144—made a proving flight from Moscow to Khabarovsk in eastern Siberia. That's the last anyone has heard of a Soviet SST. ■

Misspelled Into History

By Marjorie Kriz
A Great Lakes information specialist and former reporter, she has been published in the *Chicago Tribune* and *Chicago History*.



Cornelius Coffey was honored with five other black aviation pioneers last year in ceremonies at the Smithsonian Institution, sponsored by Negro Airmen International.

Photo by Henry Allen, *The Washington Post*



Honored for his more than 50 years in aviation, Cornelius Coffey was presented a plaque by Great Lakes Regional Director Wayne Barlow (left) and had a navigational waypoint named after him. Photo by Marjorie Kriz



A licensed mechanic in the early 30s, Coffey, here with two of his students, became a flight instructor and operated a school at Harlem Airport, Chicago.

Cornelius Coffey was honored twice this year—at the Smithsonian Institution and in Chicago. Although his name does not have instant recognition, his ego didn't suffer when FAA misspelled it.

Coffey is a black pioneer pilot who has more than 50 years of aviation under his belt. In fact, he first flew as a youth 61 years ago.

In September, a special ceremony was held at the Smithsonian, sponsored by Negro Airmen International, to honor half a dozen black airmen of the pre-World War II era: Coffey, John W. Greene (the only other black licensed aircraft mechanic in 1932), Lewis A. Jackson, C. Alfred "Chief" Anderson, Dr. Albert E. Forsythe and Willa Brown (who helped operate Coffey's flying school.)

Coffey soloed in 1928 in a Waco 9 biplane that he still owns. He barnstormed around the country in the 1930s and then founded the Coffey School of Aeronautics at Chicago's Harlem Airport. His was an unsegregated school and the only one unconnected with a college to be part of the government's Civilian Pilot Training Program prior to World War II. His CPTP course also was the only one to include women. By 1941, Coffey also held a commercial pilot's license and an instructor's rating.

In July this year, it was Cornelius

Coffey Day in Chicago by proclamation of the mayor. Great Lakes Regional Director Wayne J. Barlow was on hand to present Coffey with a plaque renaming a navigational waypoint south of Midway Airport in his honor. Because all navigational fixes have five-letter designations, FAA had to intentionally misspell his name. Coffey, along with Chicago ARTCC employee and black historian Rufus Hunt, was the first pilot to report over the Coffey fix.

At 76, Coffey still is flying. He holds a current flight instructor's rating and is a designated FAA aircraft and engine mechanic examiner. This past summer, he examined 10 Marines from the Glenview Naval Air Station for their mechanics' licenses. "Too old" is not an aviation expression. ■

I work in a non-radar approach control tower. To reduce controller workload, IFR departures are not changed to the approach/departure control frequency. Clearance is delivered on the ground-control frequency. When the clearance is read to the pilot, it includes a time for the pilot to contact the ARTCC. The pilot, then, remains on the tower frequency until he makes that contact. Does this procedure eliminate the responsibility of the departure controller to verify assigned altitudes on initial contact? Handbook 7110.65B, Para. 250, states you must verify altitudes in non-automatic environments.

The procedure you describe does not eliminate the responsibility of the controller. However, it satisfies the procedures in Handbook 7110.65B, Para. 250. After a pilot has received and acknowledged the assigned altitude from ground control (clearance delivery), a transfer of responsibility to another controller in the same tower cab is an intrafacility transfer. Thus, Para. 250.a.(3) applies, and the assigned altitude does not have to be verified on initial contact, in this situation.

I and many of my co-workers find breathing tobacco smoke in confined areas like our tower cab annoying, irritating, distracting and, in some cases, causing respiratory symptoms. Recent medical studies have proven that exposure to ambient tobacco smoke causes gradual but insidious injury to lungs and heart of the nonsmoker, thereby jeopardizing the ability of a controller to maintain a Second Class

Medical Certificate. By allowing this situation, isn't it contrary to FAA Handbook 3550.10, Para. 301, and/or DOT Order 3910.2A and/or OSHA Public Law 91-596, Sect. 6 and 19? GSA Bulletin FPMR D-43 provides protection to Federal employees in GSA-controlled buildings, and the FAA provides protection for its own computers. Aren't we controllers entitled to as much protection?

We recognize that there is growing public concern with the potential adverse health effects of passive smoking. Available data, however, remains incomplete and unconvincing. Although at least one recent study indicates a reduction in the size of small airways of healthy nonsmokers exposed to cigarette smoke in the workplace, there is no proof as yet that the reported reduction in airways function has a physiological or clinical consequence. Numerous tests of air quality in FAA offices and facilities have shown that total contamination from all sources, including tobacco smoke, is far below the limits permitted by the standards for workplace air established by the Occupational Safety and Health Administration. Based on these tests and the absence of data that reveal significant health consequences for passive smokers, the Federal Air Surgeon cannot conclude that smoking in FAA facilities should be broadly curtailed for health reasons. We are sympathetic to those nonsmokers who find

tobacco smoke annoying and disagreeable; decisions to restrict smoking must be made on administrative grounds, however, and, for the present, cannot be based on medical considerations.

Regarding unscheduled telephone availability, what document specifies that an individual is required to have a telephone? Is an individual required to perform call-back duties on equipment he or she is not certified on? When an individual is on annual leave at home, is a response to call-back required?

There is no document that specifies a requirement to have a telephone; however, Order 6030.31c requires that when a telephone number cannot be furnished . . . the employee must call the control point (collect, if tolls are involved) at one-hour intervals or respond to "Bellboy" or other agency-furnished signaling arrangements.

It is possible to perform call-back duties on equipment not certified on, but the individual would be extremely limited on the types of repairs that he or she could be expected to accomplish. Any repair that affected a certification parameter would require recertification prior to being placed back in service. This could only be done by a certified technician—requiring the call-back of a second technician or a wait for one from the normal shift coverage.

Only in the most unusual circumstances would an employee on annual leave be required to respond to call-back duties.

I transferred to Honolulu from Anchorage in 1975 and have twice attempted to give up my return rights. The Pacific Region told me they

wouldn't consider accepting my return rights until after three tours here. They based this on past practices, having no policy in effect. I have made Hawaii my home. I also want to bid on an instructor's position at the FAA Academy to further my career progression and then be returned to Hawaii. However, if I accept a position at the Academy, I could not expect to be returned to my home in Hawaii but to my parent region—my former home. As a result, I must wait six years before I can bid on an Academy job so as to be returned to my home in the islands. Have I been discriminated against?

FAA's policy concerning reemployment, restoration and return rights states that if any employee is not covered by a mandatory rotation policy, the employee may forfeit return rights and remain overseas indefinitely. The mandatory rotation policy covers persons serving in remote or foreign locations. Hawaii is not considered either remote or foreign.

When you have completed six years or three tours of duty, the Pacific Region may, if they believe it is in the best interests of the agency, approve a request for forfeiture. However, the region is not obligated to approve such a request. If the request is denied, then you must return to the parent region. If approved, your parent region would become Pacific-Asia. Should you accept an FAA Academy position, you can expect to be returned to your parent region, whichever it is at the time. With the facts stated in your letter, there does not appear to be any question of discrimination.

What is meant by "landing assured" relating to successive arrivals at a VFR/non-approach tower? Where must the aircraft be on the approach—over the airport boundary, so-many-mile final, in sight with the aid of field glasses at the final approach fix or in sight with the aid of field glasses and landing light in sight regardless of distance out? Common sense should dictate the answers, especially if traffic could be holding above the final approach fix in overcast or broken deck on the same approach or a VOR approach from a different direction. Like Special VFR, this concept is confusing for new graduates from the Academy.

"Landing Assured" is a tool that, if used properly, serves to alert the control facility having IFR jurisdiction that landing of a particular aircraft is imminent via a direct flight to the runway. This is based on existing field and meteorological conditions. The procedure allows the control facility to initiate "preapproach" action (vectors for positioning, etc.) of a subsequent arrival. It in no way serves to relieve the control facility of its separation responsibility. The non-approach control tower is still required to forward the aircraft arrival time, as well as information on a missed approach or unreported or overdue aircraft, as prescribed in Handbook 7110.65B, Para. 393.a.

We cannot use a specific point, such as the airport boundary or the final approach fix, to determine when a landing is assured; therefore, we must use good controller judgment.

"Landing Assured" is not intended for use when an arriving aircraft will be required to enter the traffic pattern, rather than land without delay via a direct flight to the runway.

Has the chief of my ARTCC exceeded his authority in directing staff specialists to work control positions without a change in job description? When working control positions, do staff specialists receive protection and credit under Public Law 92-297 (Second-Career)? When working control positions, are staff specialists eligible to receive monetary compensation as exempt employees?

No, your chief has the authority to assign staff specialists to operating control positions without a change in job descriptions to keep the ARTCC operating during emergencies or abnormal workloads.

Supplemental Instructions Nos. 2 and 11 to Public Law 92-297 state that "the time a controller is reassigned or temporarily promoted to an evaluation and proficiency development specialist (EPDS) position is not credited toward the 20 years of active control service." This is based on the fact that one is no longer officially assigned (by Official Personnel Action, SF-50) to a career controller position. Staff positions fall into the same category. Although staff specialists occasionally operate a control position, it is not considered to be a substantial portion of their assigned duties.

A staff specialist who is detailed from a position that is exempt from the Fair Labor Standards Act (FLSA) to a nonexempt position covered by the FLSA should receive overtime pay under the provisions of the FLSA for the workweeks in which he or she occupies the nonexempt position.



FAA Mainland Toastmasters, employees of the FAA Technical Center, listen to operations research analyst Richard Soper as general evaluator after the speeches. From the left are Betty Moschella, public affairs specialist; Dorothy McGehan, computer systems analyst; William Lewis, meteorologist; and Thomas Ryan, computer programmer.

Representing the FAA Speechmasters Club in the annual Humorous Speech contest in competition with Toastmasters from other agencies was Ken Geisinger. He is a policy analyst in the Office of Aviation Policy at Headquarters.



"Speaking before a crowd bothers me," says Dorothy Treadwell, an Equal Employment Opportunity specialist in the Office of Civil Rights at FAA Washington headquarters.

That's why 18 months ago Treadwell joined Speechmasters, a club of

Toastmasters International. Since then, every other week, she joins some 20 other members in an hour-long noon-time meeting aimed at gaining experience and overcoming uneasiness in front of audiences.

Come mid-January, Toastmaster Treadwell will put everything she has learned into practice when she manages the annual EEO Awards Ceremony in the auditorium and presents the nominees to the Administrator.

"I can't praise Toastmasters' training too highly," she says. "It has helped me not only on the job, but also in my role as a minister's wife." She already finds it much easier to make speeches

and presentations at the Berean Baptist Church.

Her goal of sharpening her communication ability in business and the community fits in nicely with that of the other "action people" who are enrolled in Toastmasters International's leadership and communication program. It also helps achieve the goals of Secretary of Transportation Neil Goldschmidt of having DOT employees improve their communication techniques.

On the other hand, civil engineer Ron Clark of the Southwest Regional Office says, "I got into Toastmasters not because I needed to learn to speak but because I needed to learn to shut up; I talked too much. Toastmasters doesn't teach you how to speak but how to be a more effective communicator."

Yearly dues come to \$24, but the FAA considers Toastmasters training valuable enough for the benefits received to refund \$18—the national dues—from imprest funds.

Each member receives a "Communication and Leadership Program" manual—a basic workbook with 15 projects, each one progressively more difficult. From time to time, each member is scheduled to present a 5-7 minute prepared speech, pegged at moving ahead from the "Icebreaker" project up other rungs of the ladder—which include "Vocal Variety," "Make It Persuasive," "Inspire Your Audience" and "Work With Words"—to number 15: "Speak With Knowledge."

At any meeting, members not on the program may be asked by a Table

Sharpening Your Communication and Leadership Skills



By Thomas S. Hook
Acting chief of Headquarters' Public Inquiry Center, he is the author of two books on the U.S. Navy's rigid aiships.



Topics Master to speak impromptu for up to two minutes on a surprise topic. This builds confidence in thinking on one's feet.

An evaluator is assigned to give feedback for each 5-7 minute prepared talk. Members later vote on the best speaker of the day, who is awarded an Oscar-like trophy to display in his or her office until the next meeting. Members also vote on the best table topics speaker and the most effective evaluator.

A time-keeper, a grammarian and an "ah" counter advise members of obvious areas for improvement.

Toastmasters, which until 1973 was for men only, now has 3,800 clubs in 47 countries and 75,000 members—up 25,000 since 1975. Women now hold key offices and both sexes make up club membership.

Unaffiliated with Toastmasters but thriving for 42 years is Toastmistresses. The FAA group at headquarters has 30 members, some of them male, and meets during lunch hour once a week. Speechmaking is featured at only one session per month, with leadership development emphasized in the remaining three meetings.

"The training we get from Toastmistresses is a definite benefit to the agency," says past-president Judy Branting, an employee development specialist. "We learn how to give more effective briefings, and we do our jobs better."

Joyce Weckerly, a management assistant in Pacific-Asia's Air Traffic Division, points to the Toastmistress Pledge for another oft-neglected value in communicating: "To love our language and use it with grace and facility."

Another distaff FAAer, who credits her Toastmaster activity with better job performance is Pat Romanofsky Steven, a past president of the Speechmasters club and also an area district officer. A labor relations specialist, she presently is working as chief negotiator at the bargaining table with two unions—one representing engineering and maintenance workers at Washington National and the other the police at Dulles International.

"Toastmaster training gives me the self-confidence needed to conduct meetings on behalf of the FAA" Steven says.

"The training we get from Toastmistresses is a definite benefit to the agency."

The scope of club activity devoted to this communication and leadership improvement program varies in regions and centers. The FAA Technical Center's club at Atlantic City has luncheon meetings twice-a-month, the second and forth Wednesdays. At the Mike Monroney Aeronautical Center in Oklahoma City, a once-thriving Toastmasters group has ceased operation due to the retirement of a number of key people.

In regions without FAA clubs, employees still participate by joining chapters at other agencies or in the business community.

Some members of the Nashua/Hudson, N.H., Toastmasters Club comment that even if they left their present jobs, which prompted them to join the club in the first place, they

would not give up Toastmasters because of the value they find in its experience.

"Many Toastmasters here in Fort Worth have received job promotions based directly or indirectly on skills they have learned in communicating," says Michele M. Owsley, an aerospace engineer, formerly with Boeing, who works at Southwest Region headquarters.

Some Toastmasters complete their basic manual's 15 speeches and then drop out, not feeling a need to progress to the advanced competition and leadership program.

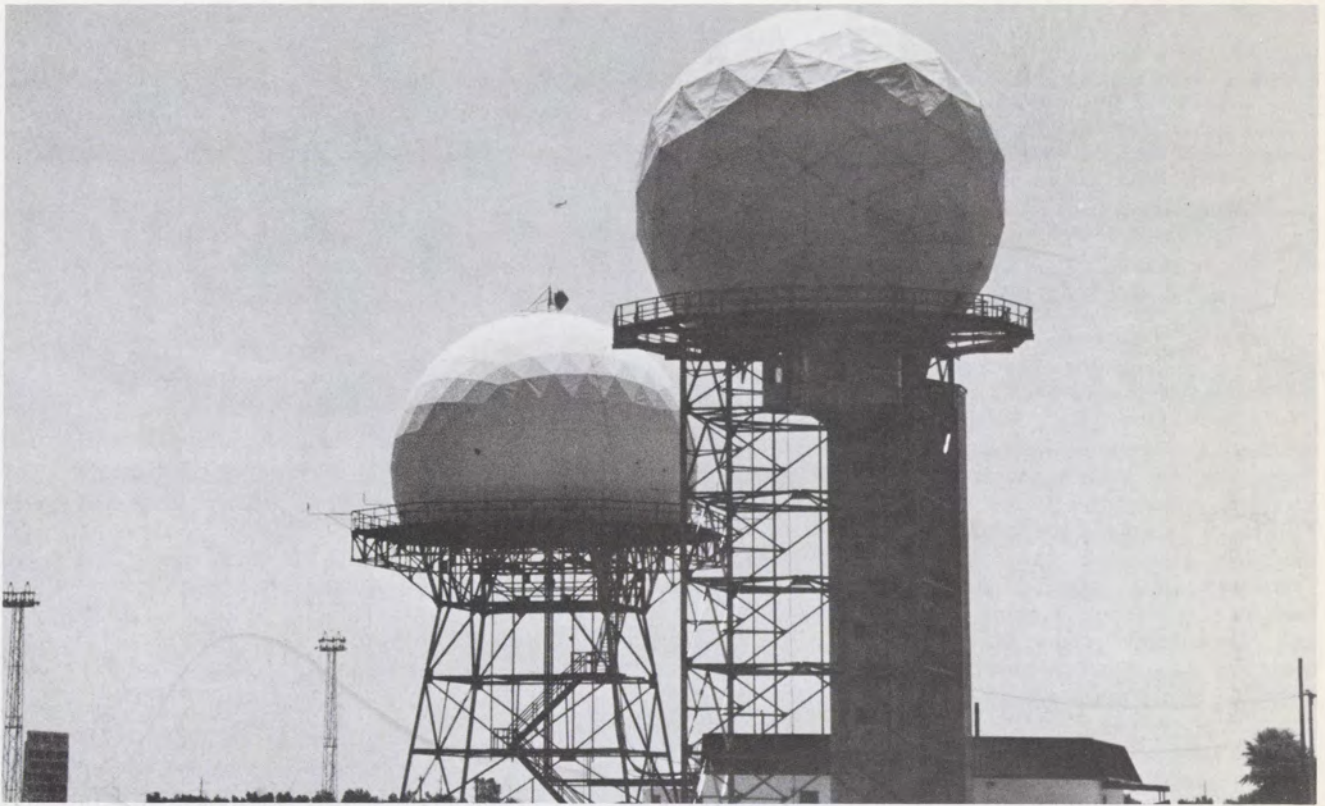
"My travel and work schedule became so heavy in 1977 that I dropped out of Toastmasters," says Polly Bryan, a training programs manager at Washington headquarters. "I soon found that I missed the people, giving my reactions to other speakers and listening to people whose ideas were sometimes quite different from my own; so I rejoined two years ago."

Toastmaster Bryan also enjoys the "mix" of the members, who come from many different offices and services, as well as from agencies nearby.

The consensus of those who have participated in the Toastmasters and Toastmistresses activity is that the FAA receives tangible benefits from its investment in money to pay national dues.

If you feel you know all you need to know about public speaking, try combining "Vocal Variety" with a "Persuasive Speech," while working in plenty of "Body Language" at your next meeting.

That's harder to do than you think. ■



The new ARSR-3 long-range radar at McCook, Ill.—dwarfing its predecessor,

which will serve the Minneapolis Center—will provide improved coverage within a

200-mile radius for the Chicago Center next year.

Photo by Neal Callahan

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