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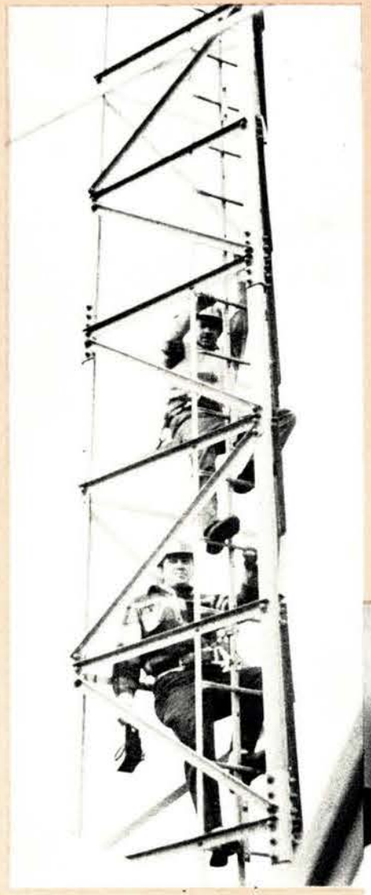

YEAR IN REVIEW

1971

FAA WORLD

YEAR IN REVIEW

The cover: Looking at the past year and its accomplishments in FAA means looking at FAA people and the diverse jobs they do that ultimately lead to serving the public with safety in flight.

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JANUARY 1972

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goals

Our goal of safety in the air every second of the year challenges us to manage both our technical resources and our manpower as effectively as we can. In 1971 the FAA made marked progress towards meeting that challenge.

Certainly, while regional reorganization had a heavy impact on a number of FAA families, it has proven highly effective in enabling the agency to improve its service to the public. I commend you for making the changeover as smooth and as least disruptive to people's lives as possible.

Now we are dealing with an even more difficult problem: employment reductions. FAA people at virtually every level of responsibility are working with program managers to find ways of trimming the agency's workforce—in line with Federal policy for reduced employment—without causing involuntary separations.

But even as we face this uncertainty, we can be proud of our accomplishments in the past year. We took long strides in the center and tower automation programs, due to greatly increased funds from the Airport and Airway Development Act of 1970 and the funneling into the agency of much new equipment that we contracted for in the mid and late '60 s.

Our recruiting and training efforts of the past few years resulted in impressively greater numbers of technicians and controllers at higher levels of skill in 1971 than in any previous period in FAA's history.

We took a major step to improve first-line supervision by establishing the Management Training School. At higher levels of management, decision-making and communications improved, and people stepped up to their responsibilities as more authority was delegated to them. This is the best way to assure timely action at the levels in the FAA where essential tasks must be performed.

The goal of all our efforts is 100 percent safety in the air, and we have shown it to be within our reach. This is our greatest challenge.

JOHN H. SHAFFER
Administrator

people . . .

As the machine is the body, people are the heart of industry.

REGIONAL REORGANIZATION

During the latter part of 1970, the agency's "wheels" began turning to respond to President Nixon's desire for common field alignment of major Federal departments and agencies. The main objectives of this standard-region concept are improved service to the public, efficient and speedy interagency coordination and more-effective assistance to persons dealing with the Federal Government, particularly in cases involving more than one department or agency.

As a result, four new FAA regions were created early in 1971 and four new regional directors were appointed—New England, headquartered in Burlington, Mass., Director Ferris J. Howland; Great Lakes in Des Plaines, Ill., Director Lyle K. Brown; Rocky Mountain in Denver, Director Mervyn M. Martin, and Northwest in Seattle, Director Christian B. Walk.

What did the reorganization do to members of the FAA family? Well, early in the game, the agency made a commitment to assure, wherever possible, assignment-in-grade to employees affected, within their immediate areas of employment or elsewhere in the system. Employees whose jobs were abolished were given top priority for in-grade reassignments and were given the opportunity to make known their preferences for geographic locations. In cases where employees could not accept positions offered to them because they were unable to relocate, FAA manpower offices provided—and are still providing—outplacement assistance to help these employees find jobs in their immediate areas.

In addition to reassignments, the agency employed various methods to avoid in-

voluntary separations and protect employee careers, such as inviting and permitting voluntary retirement.

The new regions opened for business on April 2, and for the first few months of operation, they had only skeleton staffs on board. Most personnel transfers were put off until the summer months for the convenience of those relocating with families. The transfer of functional responsibilities was a gradual process, and the five existing continental regions stood by until new regional staffs filled out enough to take over.

Of course, each new region had different problems getting set up. The number one priority for New England Director Ferris Howland was getting people on board. On opening day, Howland had 17 top-level positions to fill. He first latched on to William E. Crosby, Jr., who had been with the Boston Area Office, for his deputy. He then chose his regional counsel, Larry Sullivan, who had been with the Boston Area Office as well. By September, all but four of the top positions had been filled.

To the west, the Great Lakes Region, with its full complement of 7,000 people on board, became the second largest FAA region—Southern is the largest. The Manpower Division of GL tried its wings on Sept 1. Employees assigned to GL Manpower had spent several weeks on detail in the Central Region and gradually absorbed the responsibilities for their six-state region.

Rocky Mountain got it from both sides—Central and Western. As the work force climbed to the authorized headquarters staff of 260 and as functions were gradually transferred from Kansas City and Los Angeles, quarters became cramped and telephones were hard to come by—a luxury. RM headquarters employees were housed in four buildings as well as four mobile trailers. Ground-breaking for a new two-story building with a garden level took place in mid-summer, and it is scheduled for occupancy early in March.

Up in the Northwest, October 4 was "independence day" for the Manpower Division—the day they completely took over manpower functions for their new region from WE. Initial personnel planning had fallen into the hard-working hands of division chief Lionel Maddeford, personnel specialist Zoe Hermanson and secretary Genevieve Wright. By October 4, the Manpower staff had 18 additional persons to handle the many applications and personnel transactions. And there were plenty of them. The attractive setting of the new region, with its unlimited recreational opportunities, drew an avalanche of applicants.

And so, all four new regions took their first steps during 1971, with many watching and ready to lend a helping hand.

Reading up for reorganization, Jewel Freeman (left), Joyce Quisenberry and Pat Young browse through materials at the Central Region's "Chicago Information Center," which was set up to give CE employees information on the Chicago metropolitan area, headquarters for the new Great Lakes Region.

PERSONNEL

FAA people at both ends of the salary scale began 1971 with bigger paychecks while they planned hard for the year's major event—regional reorganization.

Before the year ended, manpower planners were working to find painless ways of paring down the largest workforce in FAA history and shaving decimal points off the average GS pay grade.

The year began with President Nixon signing an Executive Order on January 8 raising Federal salaries an average of 5.96 percent. In the following months, a 4.5 percent rise in the Federal annuity became likely because the consumer price index was going up. This became reality and all Federal employees who had retired as of June 1 got the increase.

At the same time, eligible FAA people whose jobs were directly affected by regional reorganization were being offered discontinued-service annuities. To create vacancies for people accepting transfers during the reorganization, the agency gave other eligible employees an early-retirement opportunity until October 2. Those with 25 years of government service were eligible to retire regardless of age; those with 20 years, at age 50 or over. Within a short period, more than 600 FAAers tooks advantage of the dual incentives and retired.

The air-traffic-controller career bill, which provides for early retirement, maximum retention age and retraining of controllers, fared well in Congress last year. After transmitting the bill to the House in April, Secretary Volpe, with Administrator Shaffer, Manpower Associate Administrator Bertrand Harding and Air Traffic Service Director William Flener, strongly urged passage of the bill at hearings in June. The House voted favorably, 293 to 0, on October 4. The Senate is expected to act on the bill early this year. The chief aim of the proposed law is to improve the air-traffic-control system by allowing controllers to either retire or turn to new careers when their age lowers their ability to control traffic efficiently.

Discussing the approximately 900 bids received for 29 slots as a result of advertising positions under the Air Traffic Center reorganization are (left to right) Ann Rawlings, Alfrieda Brown, Barbara Larkin, Will Wright and Tony Coney of Central Region Manpower. All but Barbara Larkin have left this office since the photo was taken.

The number of people needed to staff ATC facilities and the stress of control work were studied in exhaustive detail by teams from the Office of Management Systems and the Air Traffic Service, who hopscotched across the country and visited every en route center, 44 towers and 21 flight-service stations. A hallmark of the study was an open ear to the controllers' point of view. Many controllers were upgraded as a result of the study.

In another study, nearly one thousand controllers and flight-service specialists voluntarily took aptitude and psycho-motor tests that were compared by a private firm to confidential performance profiles drawn up by the controllers' supervisors. The idea was to develop tests that accurately reveal the abilities of people who apply for controller jobs. Statistical results will be published this year.

"Up or out" was emphasized in ATC career progression last year, because the agency no longer needed many trainees below full-performance level.

In the regions, wage-grade employees found new opportunities for career progression as they went to work maintaining environmental-support hardware in the en route centers. In addition, 4,000 electronic technicians were upgraded in recognition of their increasingly high level of skills and complex jobs.

At a more rarified level, the agency made plans for an Executive Development Program to identify and groom FAA people for the agency's highest jobs. A similar program may eventually apply to first-line supervisors and middle managers, giving FAA a complete career system.

A thorough review of the Merit Promotion Program, cornerstone of career development in the agency, but dissatisfying to both managers and firing-line employees, was begun late last year by the Office of Person-

NEW FIELD EXECUTIVES

CENTRAL REGION

John M. Cyrocki, Region Director; formerly FS division chief in Pacific Region.
Retiring: **Edward C. Marsh,** region director since 1964.

EUROPE, AFRICA AND MIDDLE EAST REGION

Oscar Bakke, Assistant Administrator; formerly Associate Administrator for Plans.
Retiring: **Raymond B. Maloy,** region Assistant Administrator since 1965.

NAFEC

Cecil A. "Buck" Commander, Director; formerly EU Region Deputy Assistant Administrator.
Robert J. Cannon, Acting Director since August 1970, now Deputy Director.

nel, with much input from the field. Personnel officials hope the review will help solve MPP's problems of long delays, inequities and other difficulties.

The Manpower and Personnel Information System (MPIS) took a great leap forward last year with the installation at the Aero Center of a central computer and the creation of programs to run it. Able to accept, store, update, combine and deliver data almost instantly on every agency position and employee, MPIS will go into limited use next December, and will be fully loaded with employee histories during 1973. In every region except EU, sending/receiving hardware linked to the computer will provide fast, accurate information for the management of the FAA workforce.

If MPIS were in full operation now, it would be particularly useful for statistical sleuthing, because. . . .

On August 15, President Nixon announced to the nation "The Challenge of Peace." From that speech resulted the wage-price freeze and reductions in Federal spending, to wit: grade de-escalation, employment/budget cutbacks and requested postponement of a Federal salary increase. FAA and other government agencies were asked to reduce their average GS grade by .15 this fiscal year and another .15 in FY 73. The 90-day wage freeze halted higher pay for all within-grade and quality-step increases, but promotions with increased pay were allowed. Within-grade pay increases were put back into effect when the freeze ended Nov. 14, but not retroactively for those due during the freeze. The freeze did not affect the waiting period for future step increases.

The staffing cutback in the FAA worked out to 2,330 fewer employees by this June 30. A hiring freeze thus went into effect last September 27, and in November the agency renewed the opportunity for early retirement (until June 30). Manpower planners are still sifting every method to reduce the FAA workforce and average pay grade through attrition only.

	TOTAL WORKFORCE As of 30 Sept 1971	NEW HIRES 1 Jan - 30 Sept 1971
ATCS	25,010	1,322
ETs	8,994	696
FS Inspectors	2,187	205
Wage Board	3,018	448
Engineers	2,492	140
All Other	12,961	1,975
Total	54,662	4,786
SEPARATIONS		3,142
PROMOTIONS		11,164

TRAINING

FAA people chalked up more than 36,000 enrollments in 1971 at the FAA Academy, Management Training School, Transportation Safety Institute and in regional training, correspondence courses and general training.

"Customized" was the by-word and the big change in the training of air-traffic controllers from en route centers. Starting in the last weeks of 1970, the new National En Route Training Program took a large part of the controllers' qualification training out of the en route centers and put it into simulation labs at the Academy and NAFEC. Both labs can re-create or "customize" the air-traffic flow of any center; controllers practice non-radar techniques at the Academy and radar control at NAFEC—and the traffic looks just as it does at work.

Nearly 600 controllers from 13 centers took the three-week radar course at NAFEC in 1971. Plans for installation of a modern radar simulator at the Academy in about a year will bring total simulation training of en route controllers into one integrated laboratory.

New Academy training in terminal air-traffic control will start early this year, supplementing general courses, and will help qualify controllers for work at three distinct levels—VFR, non-radar and radar. Training will also be offered to people who transfer from a lower to a higher level. The new en route and terminal training efforts will ease the field's burden of on-the-job training and reduce the OJT time necessary for full qualification of controllers.

Electronic-technician training continued at a high rate in 1971. Several new courses reflecting the automation boom, particularly ARTS III, were added to the Academy's curriculum.

In 1971, the agency considered plans for the first formal training program for Flight Standards people who test aircraft of new or changed design and review the data as part of FAA's continual program of aircraft certification. Most such inspectors have been hired from among highly experienced members of the aviation industry, but the new courses—tentatively slated to start early in 1973—are intended to fulfill the agency's need for career training of newly hired flight-test people.

Flight Standards inspectors began enrolling last year in two FAA courses in accident investigation at the new National Transportation Institute, located at the Aero Center, which runs the institute for DOT.

The agency enhanced the career opportunities of Academy instructors by offering them additional training and cross-training in other skills and requiring their attendance at the new Management Training School in Lawton, Okla.

With ARTS III the latest thing in terminal automation, Jim Dea of the Phoenix tower teaches a course in the new system at the FAA Academy in Oklahoma City.

Highlighting the 1971 training year, the agency mustered the money and people to begin central training of supervisors and managers at the Management Training School at Cameron College. As did the new air-traffic training, MTS grew out of strong recommendations by the Air traffic Controller Career Committee (Corson Committee), which suggested that supervisory training is as important as technical training. The three-week courses for supervisors and middle managers are mandatory for everyone in those positions. MTS uses the latest techniques, such as closed-circuit TV, as well as thoroughly professional instructors. It will train 3,600 people each year. Since April, when classes began, more than 2,500 students have been graduated. One-week refresher courses will begin this year.

There were other training programs as well. The Academy's "150 Program" prepared nearly that many students—most of them minorities—for entry into air-traffic and electronic-technician training courses.

The Alaskan Region made an agreement with the Bureau of Indian Affairs for training of Alaskan Indians for entry into the Academy as General Facilities and Equipment Technician trainees—with the goal of their returning to jobs in Alaska. Classes began in August at a BIA school in California; now the Rocky Mountain Region is planning a similar program with the BIA in North Dakota.

The Western Region opened air-traffic schools in Los Angeles and Oakland to prepare people headed for centers, towers and flight-service stations as on-the-job trainees. The Eastern Region launched a school for air-traffic trainees next to the New York ARTCC.

LABOR RELATIONS

Despite cancellation of formal union recognition last July, the number of employees represented by unions continues to grow. The total now represented is approximately 16,500. While the actual number of units of recognition decreased from about 350 to 260, unit sizes increased. Nearly 2,000 more FAA employees are now represented by exclusive recognitions than there were a year-and-a-half ago.

The trend toward larger units is reflected by the two petitions for nationwide bargaining units now pending before the Department of Labor.

In one such petition filed last year by the National Association of Air Traffic Specialists, NAATS sought to become a single negotiating voice for all nonsupervisory flight service station specialists. The question as to the unit's appropriateness went to a hearing in April 1971. The National Association of Government

Deputy Administrator Kenneth Smith responds to a question at a DOT labor seminar in Annapolis, Md. On the panel at the right are (left to right) David W. Oberlin, Administrator of the St. Lawrence Seaway (partly hidden); James Beggs, Under Secretary of Transportation; Vice Adm. Thomas R. Sargent, Asst. Commandant, U.S. Coast Guard, and John H. Shaffer, FAA Administrator.

Employees and the American Federation of Government Employees intervened, hearings were completed in May and a DOL decision is expected in the near future.

The other petition in the same vein was filed by the Professional Air Traffic Controllers Organization (PATCO), seeking to represent all air traffic control specialists in towers and centers. Because of an amendment requesting inclusion of evaluation-and-proficiency-development specialists (EPDSs), a decision is not expected for another six months.

A notable first in 1971 was the granting of three region-wide recognitions to deal with all electronics maintenance technicians as well as wage-grade employees at airway facilities sectors. Also, one region-wide recognition was granted to all non-supervisory Flight Standards people. With this increase in the size of the bargaining unit, a wider area of matters can now be considered and at a higher agency management level.

Further growth and activity by unions, particularly to test provisions of the recently amended Executive Order 11491, is anticipated. This will include more citing of alleged unfair labor practices, unit hearings, negotiation impasses, appeals to the Federal Labor Relations Council and negotiated agreements.

In 1971, nine new agreements became effective, for a total of 50 agreements now in effect in the FAA.

Executive Order 11491, as amended by EO 11616 and effective in November, increased the scope of negotiations with labor unions—particularly in negotiated grievance procedures and costs of dues withholding for unions. Also, employees representing the union can use official duty time for the negotiation of agreements, as negotiated on an individual basis. These changes will be reflected in an upcoming revision to the FAA's new Labor Management Relations Order 3710.7B, issued in February, 1971.

In adverse actions, appeals and grievance programs, the agency issued a new FAA order 3770.2A, incorporating Civil Service Commission regulations that provide additional benefits to employees.

Most recently, the FAA has issued a new directive clarifying agency policy on the misuse of alcohol and drugs. A careful review of the conflict-of-interest program was made, and information was disseminated to insure that all employees are familiar with its provisions. Rules also are being clarified against acceptance of gifts, entertainment and favors.

During the past year, approximately 8,000 FAA supervisors and managers were given training on the labor-management-relations principles. In addition, at the new Management Training School in Lawton, one entire day is being devoted to LMR programs.

To give the very top managers knowledge of what lower-level managers must know to handle labor matters in the field, a special DOT Labor Relations Seminar was held (see FAA WORLD, November).

CIVIL RIGHTS

Overall minority hiring for 1971 exceeded the Administrator's "one out of five" goal set for the year. Despite regional variations due mainly to earlier fixed employment ceilings and numbers of slots, FAA as a whole achieved a 21.6 percent mark for minority hires.

Training and promotion accomplishments were much improved in the second half of the year, with training goals for the entire year very nearly reached. However, minority promotions show room for much improvement.

The agency's program in civil rights moved along in many directions. A 13-member Civil Rights Committee was formed to assist the CR director in assuring equal-employment-opportunity successes. This fall saw the first class of the EEO Counselor Effectiveness Training Course. Four more are slated to tool up for the balance of the 150 EEO counselors. FAA has also launched a minority-outreach program to assure consideration for minority and female candidates for GS-14 and 15 positions. A program for GS-7 through 15 levels was also initiated.

Meanwhile, Civil Rights Staff member Richard Desautels was detailed to the Office of Logistics and Procurement Management to see to the fullest participation of minority business in DOT procurement. As a result, the Aero Center awarded the largest DOT contract to a minority business under Section 8a of the Small Business Act. This fall, the first Transpo-72 contract to a minority firm was awarded.

In its efforts to achieve greater participation in securing minority contracts, particularly in construction, the Great Lakes Region opened a booth at the Chicago "Black Expo-71."

The Northwest Region quadrupled its EEO counselor staff during the year, which is working with the Airports Engineering Branch on EEO compliance for contractors engaged in FAA-assisted airport development. NW Manpower staffed all of its placement and recruiting positions with minorities soon after reorganization to better reach minority candidates.

An Effectiveness Course for FAA's Equal Opportunity Counselors was developed last year by Course Manager James Pennington (left), assistant manager/communications expert G. Frank Roberts and staff member Anthony Amato, all of the Office of Training. The 40-hour course will be given at Headquarters to the agency's 150 EEO Counselors from all the regions.

To reduce the communications gap on EEO, the Eastern Region's Civil Rights Staff, at separate conferences, briefed newly selected AF sector managers, AT facility chiefs and FS field personnel on the program.

A number of significant people changes highlighted the year's accelerated pace in opportunities for minority groups.

Quentin S. Taylor, director of Civil Rights at Head-

The first woman tower chief in the Northwest Region and only the second in the nation is Delphine Aldecoa, who took over the Portland-Hillsboro, Ore., tower. She spent the previous year as assistant chief of the Boise, Ida., tower.

quarters, became deputy director of the Alaskan Region. After his departure, Leon C. Watkins became CR's director.

In the Eastern Region, William L. Booker and Roland Jenkins were promoted to sector managers of the Newark, N.J., and New York ARTCC sectors, respectively, both GS-15 positions. The appointment of Arthur Varnado as deputy chief of the Newark tower was the first such of a Black in EA and possibly in the country. Another first was the selection of the first Black AT facility chief in EA for the Erie, Pa., flight service station, Norman Hopkins.

The Western Region's Marion C. Davis became the only other Black AT facility chief in the nation at the Torrance, Calif., tower, and WE picked DeWitte Lawson, Jr., as a branch chief in its Airports Division.

Many other Blacks moved up this year into GS-14 and 15 slots. Promotions to GS-13 and 14 were also garnered by American Indians and Orientals in FAA. In Alaska, hiring of Alaskan natives also meant a million-dollar savings in avoiding the transfer of families from the "lower 48."

The 1 in 5 EEO hiring objective and the 16 percent hiring objective for females have been continued indefinitely by direction of the Administrator because of the significant improvement it has made in our minority-group and female accessions.

To make better use of FAA's female resources, the agency set 1971 goals for placing women at GS-13-and-above levels.

The year saw the promotion of Ellen Wormser, the Special Assistant to the Associate Administrator for Manpower, to a GS-15 grade. Gene D. Sims became the first woman tower chief in the nation at the Cuyahoga County tower near Cleveland, while Ruth Dennis was chosen as the first woman flight service station chief for San Diego. Southwest got its first female as FSS chief, Earla Martin, Rockwell, N.M., and Northwest selected Delphine Aldecoa to head up the Hillsboro, Ore., tower.

A November Civil Rights Chiefs' Conference held in Atlanta, Ga., provided a vehicle to emphasize the action-oriented people approach of the Civil Rights Office in their present and future planning.

COMMUNICATIONS

People in the FAA put their heads together, made trips, traded places and used pen, paper and electronics this year in a vigorous effort to narrow the agency's communications gap.

The new regions moved quickly to spark in-house communications: Northwest Region held its first field supervisors' conference in September, while New England Region held its first air-traffic-chiefs' parley that same month. The Rocky Mountain Region convened a facility-chiefs conference and began air-traffic "How Goes It" meetings. Great Lakes Region Director Lyle K. Brown flew to more than 100 facilities in his region, accompanied by several division chiefs.

Nor did activity lag in the agency's informal Communications/Work Environment program, which relies on local spunk and not national directives.

Teams of FAA people from facilities and regional headquarters in the SW Region made the rounds to harvest employee views for consideration during later decision-making that would affect the field. Alaska went in strongly for team action between Manpower and Civil Rights and sponsored a Management Team Action Seminar.

Western Region tried out a slew of local programs, starting in regional headquarters where division and branch chiefs switched jobs for short periods in the "Management Jump Seat." Airway Facilities and Air Traffic traded off a manager, and some AF headquarters and field employees changed places temporarily to look at how the other half lives. The AF Division asked 400 employees to give their opinions about the organization and the job—and got a big response. An *ad hoc* committee of non-supervisory AF people formed the opinions into recommendations and several changes were made. First-line supervisors at the L.A. Center AF sector sat in and participated in the workings of the sector manager's office.

The Central Region went on record with a taped two-and-a-half minute telephone message to air-traffic people called "CE Notes." Changed twice a week, it includes the latest on personnel actions, recognition and awards, flight assists, new procedures and policies and personal news.

National programs didn't stand still either, as the first flight service station workshops (FSSCOM) were held, including Eastern Region's in Philadelphia and Southwest's in Fort Worth, prior to the national FSSCOM.

Flight Standards workshops for GADO, ACDO and SWAP inspectors improved their work and the relationship of the different FS elements.

Towers and en route centers throughout the regions inaugurated the agency's Civil Service-approved plan to assign each supervisor to a group of controllers and schedule them as a team.

En route centers, the most populous kind of FAA facility, put out the welcome mat for personnel specialists last year. The job was created at each center to give the chief a full-time professional who could work with employees to keep nitty-gritty personnel problems down to manageable size.

Appraisal Staffs were set up in each region to sniff out both the strengths and weaknesses of agency activities and to report them to regional directors and to the Administrator. At the same time, Western Region pioneered the ombudsman idea in a six-month test for the agency. Bruce Chambers, the ombudsman, heard employees' grievances and complaints and had

Manpower and Civil Rights got together in the Alaskan Region last year for Team Action to improve the EEO program. Talking over plans are Paul Colbert, Manpower Evaluations Officer (left) and Paul Richards, EEO Program Officer.

access to every level of FAA management to dig into and try to resolve the problems. He got positive results in 98 percent of the 200 cases he handled.

The Administrator himself huddled with his top managers at a retreat in October to discuss controversial agency issues and to pinpoint areas needing study or action.

The more traditional media produced by the Employee Communications Staff saw many changes in 1971. The newspaper *Horizons* changed its identity and format on the first of the year to the magazine FAA WORLD. New also was *Executive Digest*, a newsletter for field and Headquarters managers, and *Pendulum*, an informal newsletter for regional public affairs officers.

Vidicom, a monthly videotape program designed to address agency issues in the form of panel discussions, question-and-answer sessions and coverage of FAA events, was a new and very-promising communications device.

The Communications Staff began issuing "Direct Line" supplements in the same format as in FAA WORLD. These were posted on News Center bulletin boards.

And a final note—the Alaskan Region began its own Q and A column in its regional *Intercom* called "Everything You Always Wanted to Know About Personnel But Were Afraid to Ask." The answers were given in an offbeat manner by one "Charlie Potato."

AWARDS

Numerous FAAers were singled out for outstanding service last year. Twenty-one were honored by the agency in the Annual Awards Ceremony, including a collection of top officials as well as Hazel McKendrick Jones, an ATCS, who received a Meritorious Service Award. Among that number was also electronics tech-

FACILITY AND SECTOR AWARDS

presented in 1971
for performance in 1970

Air Traffic: National Facility of the Year Award
Lubbock, Tex., CS/T
Fairbanks/Barrow, Alas., FSS
Chicago ARTCC

Airway Facilities: Sector of the Year Award
Lafayette, La., AFS

Flight Standards: National Field Office Award
Battle Creek, Mich., FIDO

nician Enoch Wright, who earned the "Suggestor of the Year Honor Award," topping 648 suggestion awards that saved the FAA some $300,000 in 1971.

For expediting traffic safely through McCarran International and Nellis AFB, Las Vegas, as well as for contributions to his community, James McClenahen of McCarran tower garnered the Western Region "Air Traffic Controller of the Year 1971" facility award.

Several FAAers were distinguished in the Fourth Annual Awards of the Department of Transportation. Given the Award for Valor was ATCS Ronald Livaudais of New Orleans. Awards for Meritorious Achievement went to James Heath, chief of the Aero Center's Safety Staff; Oscar Bakke, EU Assistant Administrator; Mary Healy, manager, Headquarters Operations; George Moore, Associate Administrator for Operations, and Phillip Swatek, PC director. Benjamin Darden, director of Aviation Policy and Plans, received the Arthur S. Flemming Award from the Junior Chamber of Commerce as one of the 10 outstanding young men of the year.

Many FAAers were cited by outside organizations for doing a job-and-a-half. Sharon Hardwick, a clerk-steno in the Los Angeles ACDO, was presented an honorary award by the executive director of Sports Spectacular for her community work with underprivileged children. The Honolulu Pacific Federal Executive Board cited Honolulu FSS Chief Joseph Hao as "Manager of the Year"; Leonis H. Karratti, Honolulu ACDO supervisory clerk-steno, as "Lady Employee of the Year," and AF Division electronics engineer Dai Chin Chang as "Man of the Year." Pruitt Helm of the Denver FSS received an award as one of the 10 finalists in government as the "Handicapped Employee of the Year."

James Daniels, ATCS, Spartanburg, S.C., was twice named "Controller of the Year" for his work in promoting air-traffic control and safety—by the Air Traffic Controllers Association in 1971 and by the Aircraft Owners and Pilots Association the previous year. ATCA selected Percy Mero, Jr., and Ronald Levesque, controllers at the Tampa, Fla., tower, as co-runners-up for 1971.

The National Association of Air Traffic Specialists singled out Frederick Gackenheimer and James Locklair of the Key West, Fla., FSS for the "Outstanding Specialist Award."

The AOPA "Award for Outstanding Performance by FSS Specialists" went to Hal Schuler and Erwin Mockler of the Blackstone, Va., FSS. AOPA's Air Safety Foundation awarded a commendation to St. Petersburg, Fla., GADO Chief Frank Wignall for advancing aviation safety.

A special award in recognition of her efforts as a community worker with underprivileged children was made to Sharon Hardwick, Los Angeles ACDO clerk-stenographer, by James Hawkins, of Pacific Telephone and Sports Spectacular.

COMMUNITY ACTIVITY

At their facilities, offices and training sites—everywhere they work—FAA people translated their community spirit into action this past year.

Graduates at the Management Training School at Lawton were chipping in for remembrances of their classes—usually recreational equipment—until Billy Templeton, St. Louis FSS chief, thought of an even better idea: a scholarship fund to help deserving students complete their educations at Cameron College, the site of MTS. All in his class agreed and created a kitty of $150. In the first three weeks after the establishment of the fund in September, more than $1,000 had been donated by other classes.

A committee coordinated the effort with MTS Superintendent Al Thurburn, the Office of Training and college administrators. Others assisting in the plan, which has no official connection with FAA, were John R. McCaw, GC; Southern Region's Joseph E. White, AT; James E. Sheppard, Airports, and Jay Taylor, AF.

Also in the educational vein, the Aeronautical Center worked out a plan in cooperation with New York City to put disadvantaged youths in an aircraft-mechanic on-the-job training program. In all, 90 youths were hired in 1971.

At Headquarters, needy young people in the Summer-Aid Program worked 40-hour weeks during the summer to earn money to permit their return to school in the fall. This past summer, after passing CSC exams, 22 of 37 minority, financially disadvantaged student trainees received career-conditional appointments.

Stay-In-School participants at HQ are seniors who work 16 hours a week prior to graduation. There are now 24 employees in training in this program.

Vocational Opportunity Training is a third HQ program for academically outstanding students, not necessarily needy. An additional 24 young people in this program are being recruited for eventual full-time employment.

At the other end of the nation, FAAers in the Alaskan Region have renovated buildings into Community Service Facilities (COMSERFACs) to improve life at "bush" stations like Bettles and Farewell. A COMSERFAC serves as a gathering place for station personnel, for FAAers and members of surrounding communities, a briefing place for pilots, an emergency shelter, a movie house, a party room and a cold-weather game site for teenagers.

With the tenuous grip that plant life has on the PC Region's Wake Island, Arthur H. Dalton, chief of the Labor Relations Branch, searched for and found two

FAA's Wake Island chaplain, the Rev. Jerome F. Larson, sweeps off the bees and collects honey from hives obtained for pollinating purposes in the island's beautification program.

At Kotzebue, Alaska, the COMSERFAC in the left half of this building provides space and equipment for recreational activities, pilot briefings and community meetings.

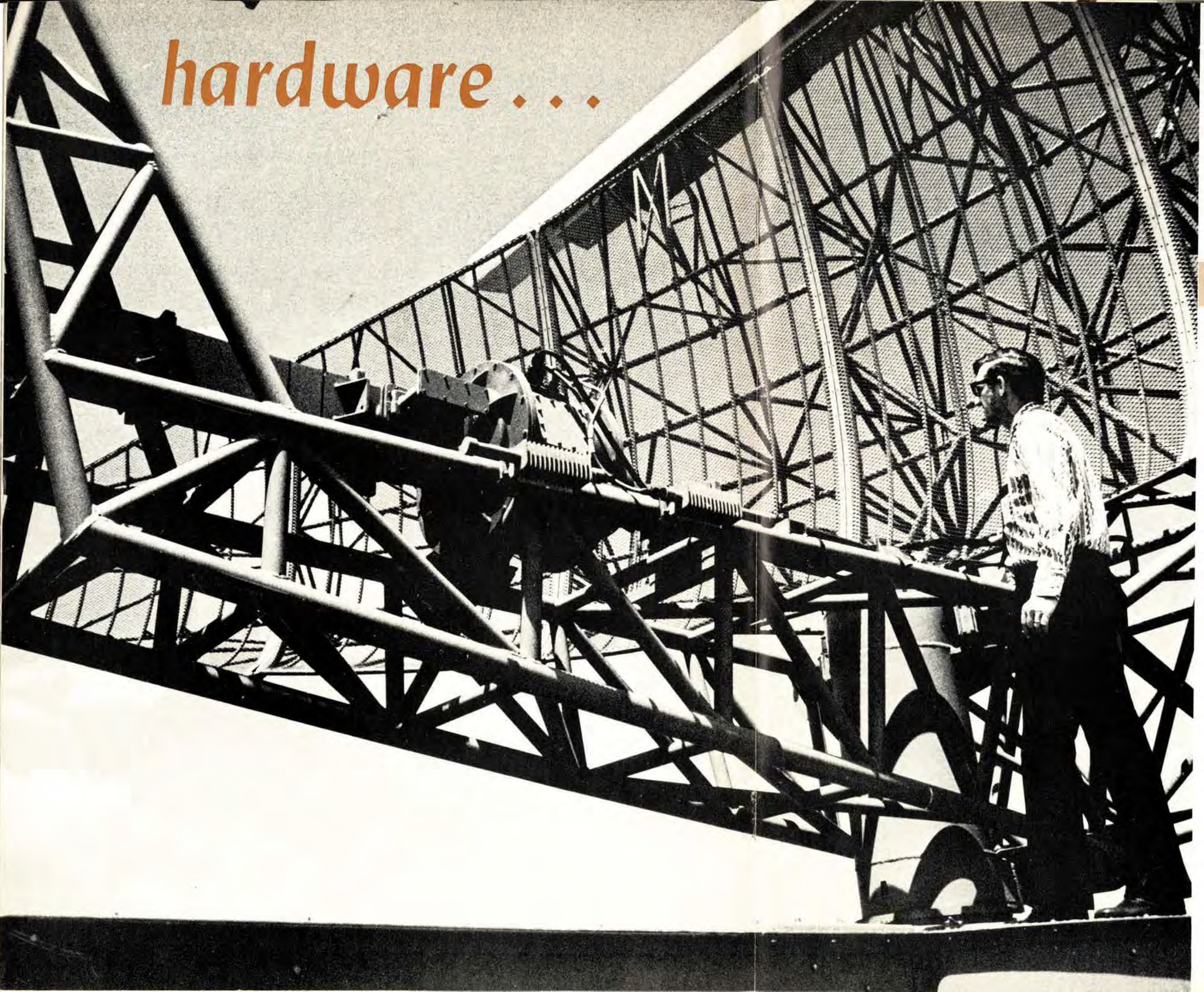
hives of bees that could be flown to the coral atoll to help pollinate newly planted shrubs, which are part of a horticultural effort to beautify the island. Now, the plants are doing nicely, the two hives have grown to nine and the islanders are reaping 100 pounds of honey each month. Heading up the beautification committee is FAA's chaplain, the Rev. Jerome F. Larson.

People in need are often the beneficiaries of FAAers' community spirit. After Charles Hull, an ATCS at McChord RAPCON (Tacoma, Wash.), retired to his Christmas-tree farming last spring, he and his wife, Terry, were seriously injured in an auto crash. At the time of the accident, about 8,000 trees had to be sheared and shaped. Hull's RAPCON friends—Jim Bechtal, Darrel Grommert, Jeff Hull, Jim Litzen, Arnie Scarburry, Dave Shupp, Carl Storkson, Mike Whitman, Jerry Wigode and Steve Zandell—went into his forest and readied the trees for market. The Hulls recovered, and were still one of the largest wholesalers of Christmas trees in the Seattle-Tacoma area, thanks to their FAA friends.

When the worst earthquake in 38 years struck southern California last February, Van Nuys tower emergency crews were back in operation in one hour, but more than 100 FAA people suffered losses ranging up to complete destruction of their homes. FAAers from all over came to their aid, offering money, time, labor and skills to help in rebuilding damaged homes. Contributions to an earthquake fund totaled over $8,000. Eastern Region personnel alone kicked in $2,419. One FAA earthquake victim wrote:

"I wish I could meet all who contributed to the fund and tell them how grateful I am for their most generous assistance in helping me to recover from the loss of my home. Such an overwhelming response from so many people I don't know and, chances are, may never meet make it indeed a pleasure to be associated with the FAA."

hardware . . .



A tool is but the extension of a man's hand, and a machine is but a complex tool. He that invents a machine augments the power of a man and the well-being of mankind.

AUTOMATION

Automation of the agency's air-traffic facilities continued at a brisk pace in 1971, thanks to the efforts and extraordinary skill of FAA's technicians and controllers. By the end of 1971, IBM computers were in place at 17 of the 20 continental Air Route Traffic Control Centers in the NAS Stage A en route automation program.

FAA technicians and computer experts actually moved three IBM 9020 computer complexes from old quarters into new automation wings during the year—without so much as a hiccup from the computers after their reinstallation. The icebreaker was at Oakland in July, and it took 62½ hours. Next was Seattle in August, and the FAA team did it in 42½ hours. Then on to Denver in October, and they did it in less than a day—21 hours and 45 minutes. The next stop is at Boston in March.

Fifteen of the 20 en route centers are now able to perform automatic flight data processing—that is, their computer systems and other equipment automatically receive, store, and send flight-plan data to all the control positions in the center, to adjacent en route centers and to selected airport control towers in the area. This spares controllers much pencil pushing and telephoning among themselves and gives them more time to concentrate on controlling aircraft. When the remaining five en route centers (Miami, Memphis, Albuquerque, Minneapolis and Salt Lake City) complete "shakedown" testing of their equipment by the end of this year and link up with adjacent centers, the computer network will automatically transfer flight information from center to cen-

ter for all controlled aircraft flying within the "lower 48" states.

Last June, Southern Region's Jacksonville Center became the first en route center to begin operations in the second phase of NAS Stage A—high-altitude beacon tracking portion of automatic radar data processing. This function automatically tracks all appropriately equipped aircraft and displays the information —most importantly, altitude—on the controller's radarscopes. Radar data processing also includes automatic aircraft "handoffs" from one controller to another.

Jacksonville serves as the NAS Stage A operational test site and, since 1966, has pioneered many steps in the program, using prototype equipment. Implementation of Phase II during 1972-1974 at all centers will integrate the radar data processing (RDP) functions into the system. The computer software necessary to support the RDP phase is presently in system test at NAFEC. With the delivery of this software and the display subsystem hardware to the first field site early this year, the final phase of automating the en route centers will be on its way. Los Angeles is the first center that will receive this final configuration. The last one to attain the full Stage A automation is Miami, where the initial operating capability is scheduled for December of 1974.

The Great Lakes and Central Regions shared in bringing the first ARTS III system into operation at Chicago O'Hare Airport's new tower last year. ARTS III (Automated Radar Terminal System) is cousin to the en route automation system, providing similar information about aircraft approaching and departing airports, while relieving controllers of many manual chores. O'Hare's hardware was delivered in December 1970, when the terminal "belonged" to the Central Region; the system was commissioned last October under the Great Lakes Region. During that period, the O'Hare controllers and technicians became expert at operating and maintaining the equipment. In December 1971, the second ARTS III went into operational service at Denver.

ARTS III deliveries to FAA terminal facilities throughout the year piled up an impressive track record. Twenty-seven systems had been delivered by the end of 1971 and 16 of them began initial operation.

This year, the ARTS III installation program will be completed with the deliveries of 37 remaining systems, for a total of 64, three of which will be used for training, R&D and support. About 45 of the ARTS III systems will be commissioned this year, and all should be operational by May 1973.

The en route and terminal-automation programs are

Automation's highlight of 1971—ARTS III—glows in the darkened IFR room of Chicago's O'Hare control tower, the first terminal to use the new system. Controller Pete Salmon (foreground) keeps track of aircraft with the aid of alphanumeric symbols on the scope.

Updating equipment and facilities is an ongoing process in the agency. Soon after the creation of the Great Lakes Region in April, the Rockford, Ill., control-tower cab was modernized to reduce clutter, as these before and after photos show.

expected to result in a three-percent-per-year productivity increase for the air-traffic control system. In addition to the initial benefits, the automation effort is also establishing a "baseline" for future improvements, such as automatic flow control, automatic conflict detection and avoidance, metering and spacing of aircraft and data link to aircraft—all of which are now in the early stages of development and testing.

CONSTRUCTION

While automation marched forward in 1971, so did construction and modernization of FAA facilities. Most notable and sizable were the automation wings (Phase I of en route-center expansion). Eleven automation wings were completed last year, along with the expansion of the New York Center's control room, and the remaining seven will be finished this year. The wings provide space for computer equipment and additional space for classrooms, cafeterias and new medical clinics. By year's end, clinics staffed by a doctor and a nurse were in operation at 12 en route centers to provide annual check-ups and other medical services for the controllers and center staffs. Room for cafeteria expansion was available at eight centers.

Major environmental improvements for the centers under Phase II construction began at Houston in November. Phase II will be completed at the twentieth center by early 1974. Its benefits include cleaner, quieter, cooler, handsomer surroundings as well as new conference and ready rooms, cafeterias and other conveniences.

The Cleveland Center control room got a head start and was completely refurbished last year with carpeting, acoustical materials, air conditioning, new lighting and comfortable chairs. The regions undertook many "bootstrap" improvements for their facilities in 1971, including IFR room modernization, acoustic treatment for FSSs and new equipment for tower cabs.

A "turnkey" contract for installation of prefabricated control towers at low-activity airports bore fruit in 1971 at three locations: Owensboro, Ky.; Parkersburg, W. Va. and Columbus, Ohio (Don Scott Field). "Turnkey" means that every stitch of construction and installation is done by the contractor, allowing the buyer—the FAA—to put the key in the door and go to work.

Another design was approved for a separate national turnkey contract for some 50 towers throughout the country, with commissioning of the first group scheduled for early 1973.

Slim concrete tower shafts sprouted last year at several major airports, both new and old. The Administrator broke ground in July for a 180-foot-high tower at the sprawling construction site of the Dallas-Fort Worth Regional Airport. Chicago O'Hare's concrete tower, rising 200 feet above the world's busiest airport, was com-

Making way for air-traffic automation, the Kansas City Center sprouts a new automation wing. All 20 ARTCCs are undergoing major construction and renovation to house the people and equipment of air traffic's computer age.

A new regional headquarters for the Rocky Mountain Region is taking shape at Stapleton Field, Aurora, Colo., near Denver. The building is expected to be ready for occupancy by March of this year and will cost approximately $1.3 million.

missioned in May under GL after its completion under the Central Region. The world's highest tower—the 280 footer at Boston's Logan Airport, which is a Massachusetts Airport Commission project—grew toward completion this year, and the 120-foot Indianapolis tower prepared to start operations next month.

Pacific Region dedicated the new Kona Combined Station/Tower at Ke-ahole Airport, Hawaii, and fanfares were heard for several smaller towers throughout the regions.

Bricks and mortar appeared in other parts of the FAA world, including the Western Region where a new headquarters building was started in Los Angeles (in addition those begun in the RM, NW and GL Regions). Dirt was pushed up at two construction sites at the Aero Center: one for a new multi-purpose building, the other for an Environmental-Support System building, where technicians will train in the maintenance of emergency power and other support systems for the en route centers.

NUTS & BOLTS

FAA's 45 DC-3s—the mainstay of the agency's aircraft fleet—were built not long after cloth and wire departed from the airplane construction scene. The agency has maintained and virtually rebuilt the aircraft over the decades, but last year top management decided to replace the DC-3s and FAA's other aging propellor aircraft with a far more efficient jet fleet. Each jet will replace two DC-3s, and by 1976 the last FAA DC-3 will have gone to that great hangar in the sky.

A major step in improving continuity in air-ground-air communications between enroute center controllers and pilots was taken in 1971. Delivery of computer-controlled transceivers to be installed in each center and long-range radar site began in June. In November, the Oakland Center, as the system field-evaluation site, had its installation completed. This program is identified by the acronym "BUEC", backup emergency communications system.

The first phase of the program, which will provide partial coverage for each of 20 centers via 75 radar sites, is due for completion this year. The program was initiated as a result of the inadvertent cutting of a telephone company cable which carried 22 circuits connecting the Washington Center remote air-ground sites. Center operations were seriously hampered for four hours.

The Uninterruptible Power System campaign continued in 1971 with the commissioning of a new system at the Kansas City National Communications Center and another to be installed at New York's Common IFR Room early this year. As part of the en route-center expansion program, the agency will install new UPS equipment at the 20 en route centers, including Jacksonville and New York where early versions of such systems are already operating. There will also be one for training at the Aero Center. The first new center UPS is slated to become operational in mid-1973 and the twentieth in mid-1974.

Scores of new electronic aids for navigation and landing were commissioned in 1971 by facility-establishment people throughout the regions and by the former Facility Installation Service (now part of the Airway Facilities Service). A partial list shows: 82 VORs converted to VORTACs (navaids); 10 ILSs (instrument landing systems); 25 approach-light systems; 12 direction-finding facilities.

Eastern Region's Airway Facilities installation and maintenance people gave one of the field's many virtuoso performances when they put in 22 of 25 TACANs (navaids) on a short schedule after the end of contractor delays that left them with much hardware and little time.

Taking five years from the drawing board to operation, the "four-corner posts" surrounding the Dallas-Fort Worth terminal area began filling the air with radio signals last year. The four VORTACs in a rectangular pattern allow controllers to give more precise guidance to arriving and departing traffic and to direct en route traffic around the busy airport area. The installation was designed especially to handle increased air traffic when the Dallas-Fort Worth Regional Airport opens in mid-1973.

Thirteen airports welcomed ASR-7s (airport surveillance radar) in 1971. Transportable, of solid-state design and able to clear away much weather clutter from the controllers' scopes, this state-of-the art radar will be installed by the agency at 23 more airports this year.

Controllers at the Binghamton, N.Y., tower last year began using the first TPX-42 numeric decoder acquired by the agency. The first what? It's an altitude-and-identity reporting system for radar control at low-or-medium-activity airports. Aircraft must have certain equipment that transmits the information. Like the ARTS and en route automation systems, but to a lesser degree, TPX-42 has the ability to display vital information directly on controllers' radar scopes. Twenty-six systems will be commissioned in 1972, including Binghamton's.

Working on one of his 14 engine generators is Dan Boynton, general facilities and equipment specialist, located in Presque Isle, Me., in the Bangor Airway Facilities Sector.

The antenna used for training technicians in long-range radar at the FAA Academy arches white-laced into a cold Oklahoma sky.

And to test all of the above hardware—and much that hasn't even been mentioned—FAA bought more test equipment in fiscal year 1971 than in the preceding five years put together. Most of it was bought between April and June. Excellent coordination between the Logistics and Airway Facilities Services resulted in procurement of all but one requested item. The reasons for the supermarket sweep involved budgeting, appropriations and authorized spending amounts, but it added up to a great coup for test equipment during a great year for hardware.

And a final note . . .

Leaving nothing to chance, the FAA is testing an automatic window washer for control-tower cabs (which have much glass) at the Panama City, Fla., ATCT. This eliminates a safety hazard. The window washer can wash any or all windows in bad weather down to 20 degrees-below-zero Farenheit under control of the ATCS from inside the cab.

service . . .

With your active cooperation, we can provide both the general public and the aviation industry with the level of public service to which they are entitled.—John H. Shaffer

OPERATIONS

AIR TRAFFIC

Tighter control of airspace emerged as an important safety bonus to the flying public in 1971. The lower limit of airspace under "area positive control" was dropped in October from 24,000 to 18,000 feet over the Southeastern chunk of the United States, completing the agency's effort to put all the busy jet airspace over the continental U.S. between 18,000 and 60,000 feet under the control of air-traffic facilities. The standard airspace boundaries make flying safer within them and eliminate the chance of confusing pilots.

Three new terminal control areas (TCA) —that is, controlled airspace around airports—went into effect last year in addition to those already in effect in Atlanta and Chicago. Washington, D.C., New York and Los Angeles were sheathed in TCAs to reduce the chance of mid-air collisions in their busy skies. Now, all aircraft flying into these areas must have certain equipment, identify themselves and follow controllers' instructions.

Both the Eastern and Western Regions cranked up major educational efforts to prepare pilots for the TCA changes and were successful. FAA plans to wrap more TCAs around the nation's other heavily trafficked airports, including Boston, Dallas, Miami and San Francisco.

But private pilots and aviation-industry groups have at times objected to some of the TCA restrictions, resulting in 1971's "Boston Corridor" test. The agency chose Logan Airport in that city for simulation of airspace-control plans favored by aviation groups, and last July the New England Region Air Traffic Division, working with other parts of the FAA, ran the tests with clockwork precision.

FAA and the military began a program in June to whittle down the number of military and civil flights using visual flight rules—essentially, eyesight navigation. The goal is the greatest possible use of instrument flight rules, and since the program began, military IFR flights have increased considerably.

After the Southern Region reviewed its low-altitude, high-speed military-training routes in a test effort to reduce them, agency managers asked the other regions to try the same thing. The regions also established new communications rules for flights over such routes.

On a person-to-person level, Southwest Region's Fort Worth tower controllers met regularly last year with their counterparts in nearby towers to talk over approach procedures, and the meetings begat improved aircraft "handoffs."

Flight-service specialists and air-traffic controllers were the comforting voices in over 3,500 flight assists

With clouds hanging low and dark over a mountain range behind them, controllers Panfilo Valentino (left) and Bob Albers (pointing) work the traffic at Honolulu International Airport.

during the year, answering flustered and somewhat frightened pilots who were lost, bucking the weather, experiencing equipment problems or running out of fuel. This month the agency honored six specialists and controllers for outstanding, life-saving assists in 1971. (See inside back cover.)

The agency precipitated several efforts to get the weather to pilots quicker than in the past, including automatic recording and rebroadcast of pilot weather reports, tested in the Eastern Region; start-up of the computerized Weather Message Switching Center in the Central Region and approval of the Flight Service Station En Route Weather Advisory Service, which will eventually place specially trained flight-service specialists in 44 FSSs across the country, beginning with the Western and Northwest Regions early this year.

When people leave the weather behind altogether and go to the moon, they pass through airspace, which has to be secured. Southern Region did it for the Apollo 14 and 15 launches, as well as seeing to the safety of thousands of private aircraft which brought visitors each time. Pacific Region informed aviators and then kept vigils with their radar eyes for "intruding aircraft" during each Apollo re-entry. (Service to man in orbit?)

AIRPORTS

Passage of the Airport and Airway Development Act in 1970 laid the financial groundwork for major efforts by the states, airport sponsors and the FAA to plan, develop and expand the airports so badly needed across the nation. The Airports Service, which has the responsibility to see that Federal money for airport development is prudently spent, launched the Airport Development Aid Program (ADAP) and made 231 grant agreements in fiscal year 1971, amounting to four cents less than the authorized total of $170 million. The agreements obligate money that will actually be spent over a period of years.

Two of the biggest development grants under ADAP were Southern Region's $14 million to Atlanta International Airport and Southwest Region's $16.5 million to the huge Dallas-Fort Worth Regional Airport.

This fiscal year, the legal ceiling for airport development grants is a whopping $280 million—and Washington and regional people in the airports program hope once again to get their full money's worth out of the law to provide the maximum possible aid to the nation's airports, both large and small.

Airports Service gave high priority to developing airport certification and safety rules during 1971. The Airport/Airway Act, as amended last November, requires all airports serving airlines certificated by the Civil Aeronautics Board to have an FAA-issued airport-operating certificate by May 21, 1972.

The Airports Service also continued to work out standards for airport design. These standards are coordinated within FAA, with other government agencies and with the aviation industry. They serve as guidelines for the public and are applied by FAA people carrying out the ADAP program in the field.

In addition to ADAP, which provides money for actual construction, the Airports Service also runs the Planning Grant Program. Money for PGP is provided by the Airport/Airway Act and goes to public and planning agencies which prepare airport master plans (for a single airport) and airport system plans (area-wide). Among last year's many PGP grants, the Southern Region made a notable one for the South Florida Jetport Study to find a suitable jetport home to replace the controversial and unfinished Miami Dade-Collier Airport in the heart of the Florida Everglades.

More secure in their homes, Federally owned and

BUDGET

SUMMARY OF FISCAL YEAR 1972 APPROPRIATIONS

(dollars in thousands)

General Funds	Budget Requested	FY 1972	FY 1971
Operation, Maintenance and Construction—National Capital Airports	16,397	16,397	15,100
Safety Regulations	164,408	160,000	138,319
U. S. International Transportation Exposition	—	—	2,800
Airport and Airway Trust Fund			
Operations	991,574	989,074	895,390
Facilities and Equipment	252,009	301,809	238,000
Research and Development	73,361	63,361	62,420
Grants-in-Aid for Airports:			
Planning Grants	15,000	15,000	10,000
Development Grants:			
Obligations	(280,000)	(280,000)	(170,000)
Liquidating Cash	92,000	92,000	60,000
TOTAL	1,604,749	1,637,641	1,422,029

FAA-operated Washington National and Dulles International Airports began reporting to the streamlined National Capital Airports office in 1971. Thriving Washington National celebrated its 30th anniversary last June and growing Dulles Airport will be 10 years old this November.

FLIGHT STANDARDS

Flight Standards continued to upgrade the air-and-crashworthiness requirements for both commercial and private aircraft. Particularly with the advent of the jumbo jets, there was increased emphasis on fire protection and overall equipment reliability. Airworthiness standards were boosted for air-taxi and executive airplanes, so that new aircraft of that type meet the same standards required for aircraft used by the commercial airline companies.

Western Region's Aircraft Engineering Division offered one of the year's highlights in Flight Standards when they completed the type certification for the DC-10 jumbo jet airliner last July. Administrator Shaffer was on hand to present the certificate to the manufacturer in California.

Throughout the country, flight inspection—the checking of air-navigation facilities for accuracy—became still more efficient as flight hours were reduced and total savings for the past five years rose to $400,000.

In the spring of 1971, the Flight Standards Service sponsored a Wake Turbulence Symposium that drew more than 1,000 aviation representatives from both the U.S. and abroad for a valuable exchange of ideas, experiences and plans for future research.

So successful was the symposium that FS is sponsoring another one—on area navigation—this month in Washington.

But the biggest news in Flight Standards was the General Aviation Accident Prevention Program. It got started officially in 1971 in all 11 U.S. regions after

Providing instructions to an applicant for the written exam for aircrew members are (left to right) Ellen Doody, clerk-typist; Mary L. Sowa, operations clerk; Maeme Yee, maintenance clerk, and Ginger Yactor, administration clerk, of the Chicago ACDO.

a two-year test run in the Central and Southwest Regions. FAA Accident Prevention Specialists went to all 84 General Aviation and Flight Standards District Offices (one to each office) to begin wide-ranging educational efforts for the benefit of everyone in the aviation community, but especially for pilots.

More than 1,200 experienced members of the aviation industry throughout the country agreed to serve voluntarily as Accident Prevention Counselors to assist the specialists in the field. Hundreds of meetings, seminars, flight demonstrations, counseling sessions—all these methods and more were used by the specialists and counselors to help pilots and airmen understand accident-producing problems and to raise their awareness of safe practices. With more than 730,000 private, commercial and student pilots in the country, the Accident Prevention Program is essential to safe flying, and reports from regional coordinators to National Coordinator James W. Campbell show excellent public acceptance of the specialists' efforts in large turnouts for meetings and many favorable letters.

AIRWAY FACILITIES

Two major changes last year improved maintenance for the agency's electronic hardware and 14,009 facilities for air navigation and traffic control—most of which operate 24 hours every day. First, the regions reorganized their Airway Facility sectors in line with a new agency policy. Sector size and workload became more uniform throughout the regions; sector managers and their staffs received more authority to take independent action, and opportunities for the technicians' career development increased. Agencywide, the number of sectors went down to 165 from 375.

Second, the Systems Maintenance Service absorbed the functions of the Facility Installation Service last September, and the combined Washington office was named the Airway Facilities Service. The merger brought closer working relationships between the two specialties, cut costs and improved communications with the regions, where maintenance and installation were already teamed up in the Airway Facilities Divisions.

The Great Lakes Region set a good example of showing sector reorganization's benefits when their AF people responded to the ever-present problem of noise in VORTACs by having "quiet rooms" built at some facilities and acquiring trailers that were parked outside others. Technicians working with the equipment found the quiet places far better for thinking and problem-solving.

Sometimes more than a tube blows out. . . . A pre-dawn lightning bolt apparently touched off a power explosion in the Northwest Region's Hoquiam VOR in Washington last fall. The fire department couldn't save it from the flames, but the Northwest Region's Airway Facilities team quickly moved a VOR test van to the site and fully restored navigation and communications service within a month. Northwest's response to the hardware emergency was typical of the fully professional work of FAA's electronic technicians and mechanics, but most of the agency's 1971 maintenance activity was, fortunately, more routine. Continual preventive maintenance made it so.

With a firm grip on cold steel, maintenance foreman Walter Christiansen of the Eastern Region Airway Facilities Division checks out a microwave relay tower. Last year he began a tour as an instructor at the FAA Academy.

Crews and technicians at the agency's mammoth hardware store—the FAA Depot at the Aero Center—kept Airway Facilities people in all the regions supplied with new, modified or replacement components and equipment. In 1971, they shipped, received, stored and fixed 148,000 items worth $80 million.

RESEARCH & DEVELOPMENT

Approximately three percent of FAA's total work force was directly engaged in the vital R & D effort of 1971, yet achievements and milestones encompassed all facets of aviation. Much of the credit is due to the agency's in-house activity and reorganization of the overall approach, but with increasing emphasis on carefully managed contractor activities improving air safety, communications, navigation, air-traffic control, flight service, environmental aspects and even the weather itself.

Increased funding in 1971 invigorated FAA's efforts to improve hardware and operational characteristics of the system.

Gen. Gustav Lundquist directed the diversified 1971 engineering-and-development program, his multi-pronged complex including: Systems Research and Development Service for improving the National Airspace System; the National Airspace System Program Office for implementing enroute and terminal ATC system automation; NAFEC at Atlantic City, providing test and experimentation; the Office of Systems Engineering Management for technical program direction and guidance, and the newly formed V/STOL (Vertical/Short Takeoff and Landing) Special Projects Office, to lead the way in orderly development of a national short-haul system.

An important accomplishment was organizing the Office of Systems Engineering Management (OSEM) under David R. Israel's direction. OSEM's main task is to provide a focus on goals. The structure for the technical program was redefined into 21 major program areas. The main thrust was to get people thinking "system" rather than only "equipment."

Much effort of the V/STOL Office went into assisting the state of Florida in establishing the "first true statewide STOL operation" in the U. S. Studies are underway on the feasibility of STOL at various sites, including San Francisco, Chicago and Los Angeles. The agency also is exchanging information with the Canadian government on establishing STOL systems.

The National Aviation Facilities Experimental Center was reorganized to make it more responsive to the needs of the development offices in Washington. An Engineering Management Staff was created, and NAFEC's Test and Evaluation Division abolished. Instead, divisions were created to perform test and evaluation within their own areas of specialization.

The vast NAS enroute and terminal automation-program implementation continued in 1971 under the direction of NASPO, with system-shakedown testing and the development of computer-program functional specification. Human-factors experts at NAFEC measured the impact on controllers when air-traffic facilities are automated. The workload on controllers before and after Automated Radar Terminal Service (ARTS) installation were compared, and in months to come, a 10-man team will visit half-a-dozen facilities to improve controller techniques.

Maintenance diagnostic procedures were developed at NAFEC for the IBM 9020A computer and sent to ARTC Centers. NAFEC personnel did the operational shakedown at O'Hare tower for the newly installed ARTS-III and will do so for each of 62 operational terminals as they get the new system. The center installed a new digital simulation facility on which 24 operators can control up to 240 simulated airplane targets so controllers can work out air-traffic-control problems.

A modified octagonal tower cab for high-activity airports was tested among the center's numerous proj-

Don't you think it's about time we got a bigger garage? As you can see, it's really a slightly used DC-7 fuselage, acquired last year, that NAFEC researchers will outfit with a self-contained fire-extinguishing system to be developed for possible future use in airliners.

ects. The test was directed by the Systems Research and Development Service and aimed at improving hardware and operational characteristics. Pilot weather reports were automatically recorded and rebroadcast from the Millville, N.J., FSS in FAA's efforts to give pilots more timely weather information.

AT NAFEC's STOLport, two newer types of instrument-landing systems (MODILS and TALAR) for guiding STOL planes were tested. New instrumentation to measure wake vortices was tested, with the goal of determining optimum intervals of landing and departure for air traffic. Other work included testing gelled fuels and measuring runway rollout friction.

Systems Research and Development Service continued investigation to extend the automation program to lower-activity air terminals and achieve greater capability at high- and medium-activity terminals. One example was the work with an associative-processor computer and the ARTS II at Knoxville, Tenn. (*See "Another Pair of Eyes," FAA WORLD, September 1971*). Conflict prediction with this system will greatly aid controllers, and an additional potential is providing automated VFR advisory service, relieving the controller from that service to concentrate on IFR control.

A test bed at the Minneapolis-St. Paul airport was in use in 1971 to study add-on features to ARTS, beginning with digitized radar tracking, later multiple radar display, weather contouring, final-approach sequencing and multiple-runway feeding. A terminal metering and spacing program at Atlanta was field evaluated to get more value from ARTS through increased software (programming) capability.

A unique air-traffic display at the Oakland, Calif., center generated by flight information fed into a computer via automatic data link was used to track planes when out-of-radar reach crossing the Pacific. Preliminary work leading to establishing an automated data link via oceanic satellite relay was done in 1971. This could provide a much-needed method of aircraft-position surveillance at all times when crossing the oceans. Work on improving the domestic VOR/DME navigation system continued during the year.

To achieve unrestricted low-visibility approaches and landings, a C-141 Starlifter is being used through a joint FAA/USAF agreement for flight testing in Category III weather, making approximately 500 approaches under simulated and real Cat III operating conditions.

Modernizing and automating FSSs is another top-priority item. The goal is to reduce the workload for specialists meeting the ever-increasing demands for flight services, without becoming too "impersonal." An FSS mock-up was constructed at NAFEC, detailing the latest design in consoles, solid-state equipment and automation. Atlanta FSS was chosen as the site for feasibility testing in 1972.

A sophisticated computer was in use at Kennedy Airport to determine the best runway use to avoid constant noise over a particular area. The results of analysis were expected with the year's end. Extensive contractual efforts are underway to determine the technical feasibility of "jet-engine retrofitting" of the existing fleet to achieve meaningful noise reductions.

At Oklahoma City, medical research needed by civil aviation continued. The know-how of the Civil Aeromedical Institute also was used in railroad-accident investigation for the first time in 1971. An air-carrier aircraft-evacuation simulator at the Aeronautical Center is in use to study jumbo-jet-evacuation problems.

The DOT Transportation Systems Center at Cambridge, Mass., is engaged in extensive technical support for the agency's research and development program.

Happy landings! At the Aeronautical Center, FAA researchers test emergency evacuation devices for wide-bodied jetliners, with the help of volunteers, an old C-124 fuselage and the Civil Aeromedical Institute attitude positioner.

Climbing over the Dallas skyline, a tri-engine 727 jetliner illustrates the airlines' campaign to stop smoking—and polluting the air. The left engine runs clean with a new burner can; the right and center engines will soon be modified with the new equipment.

The SST program came to a halt in March last year when Congress voted to discontinue funding for development. Ninety-five people in the SST Office, which used to be part of DOT and now is part of FAA, were placed in or guaranteed positions elsewhere in DOT and the Federal service. The SST Office is currently terminating contracts with industry and making data on significant engineering advances from the program available to other Government agencies and to industry.

ENVIRONMENT

The year dawned with the creation of the Office of Environmental Quality in response to the growing concern about the environment. The spurs were the recently enacted amendments to the Clean Air Act, the new National Environmental Policy Act and the environmental statements required by the 1970 Airport and Airway Development Act.

FAA moved out in a number of directions. The joint government-industry program to reduce jet-engine emissions moved along smartly in 1971 and is expected to be substantially finished by the end of 1972.

Currently, the Office of Environmental Quality and the program offices are working with the Environmental Protection Agency to develop air-pollution standards consonant with safe aircraft operation. During 1971, SRDS added the Noise Abatement Division to its organization. Its research projects, under the guidance of EQ, include reducing noise at the engine, developing techniques for reducing the noise impact on people and encouraging compatible land use around airports.

Aircraft noise is seen by the agency as one of the major constraints on the future development of the aviation system and thereby affects the chances of success of other FAA activities. Thus, programs are underway to investigate the feasibility of reducing aircraft noise through engine modifications, or retrofits. Final decisions on rulemaking are due the first half of this year.

Airway Facilities is in the act on the ground, looking to control air and water pollution through improved designs of new and existing facilities. The Airport and Airway Development Act detailed environmental study of airport projects prior to submission of applications for Federal aid and opportunities for public hearings. During the past year, FAA received 381

environmental-impact statements for airport projects, of which 80 have been cleared, 28 are still in review and the remaining 273 were negative impact statements.

An example of FAA's work in this area is that of the Airports Division with the Dallas-Fort Worth Regional Airport. FAA personnel assisted in creating a Joint Airport Zoning Board. At the same time, the Airports Planning Branch has prepared "Sound Exposure Forecasts" to guide the development of surrounding communities so that residential-area development will not be encouraged where residents would unnecessarily be bothered by noise. Additional ordinances will be worked out with the North Central Texas Council of Governments for proper land use to insure continued compatibility between the airport and its environment.

The Department of Housing and Urban Development is also assisting by encouraging better land-use planning. If the land in the vicinity of the approaches to airports is restricted to appropriate industrial usage and noise-compatible activities and buildings are acoustically protected, airports can achieve acceptibility.

AIR SECURITY

By mid-year, the Customs Service's sky marshals had replaced the military air guards that were protecting flights from air piracy, and FAA assumed operational control of the entire program.

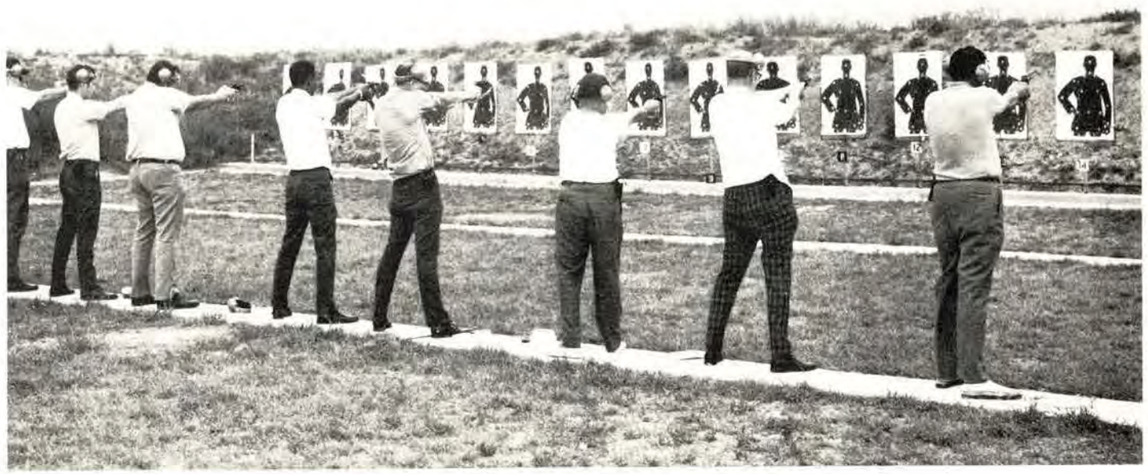
As part of this program, the Office of Air Transportation Security formulated five basic concepts for screening passengers boarding aircraft—the gate plan, the airport plan and the profile-only plan for domestic flights; two plans covered international flights, one involving the use of the magnetometer, the other not. International screening requires the same processing for all passengers, while domestic flights depend greatly on the hijacker profile.

The agency's goal is 100 percent domestic passenger screening at the nation's 531 air-carrier airports. To improve the consistency of screening, FAA is establishing security offices at 33 key airports, and the Department of Justice has increased from 100 to 230 the number of U.S. marshals assigned to the screening program. Since the majority of airports are of low activity, precluding the assignment of Federal marshals, FAA issued two Notices of Proposed Rulemaking that would put the burden of providing security on airports and the air carriers serving them.

A new Part 107 of the Federal Aviation Regulations would require an airport operator to submit a security program that shows how air-operations areas are protected and that identifies persons and vehicles authorized in these areas.

Last year, the Office of Air Transportation Security also established an Operations Liaison Staff to exchange information with other government agencies and assure the timely distribution of threat information. Such warnings may also be passed to interested foreign governments.

FAA sky marshal coordinators get in some target practice, taking two-hand aim with revolvers, at a training course at the Border Patrol Academy in Port Isabel, Tex. The 40-hour course also included instruction in unarmed self-defense and procedural matters.



Top Flight Assists of the Year

Walter Harris and Norris Jacobson

The three top flight assists for FY 1971 will be honored this month with the National Outstanding Flight Assists Award. Secretary of Transportation John A. Volpe will make the presentations to six FAAers from the Anchorage ARTCC, the Cleveland Flight Service Station, the Cleveland Hopkins Tower and the Parkersburg, W. Va., Fight Service Station.

Walter Harris and Norris Jacobson of the Anchorage ARTCC aided a non-IFR-rated pilot who became disoriented in unexpected IFR conditions near his destination.

Richard F. Fagan and Edgar C. Evans of the Cleveland FSS and Keith R. Alves of the Cleveland Hopkins Tower talked in a disoriented and nauseous student pilot who couldn't look from the window of his plane.

At the Parkersburg FSS, ATCS Richard B. Cox fell heir to five requests for help in a period of 46 minutes and was instrumental in the planes' safe landings.

Edgar C. Evans

Richard B. Cox

Keith R. Alves

Richard F. Fagan