

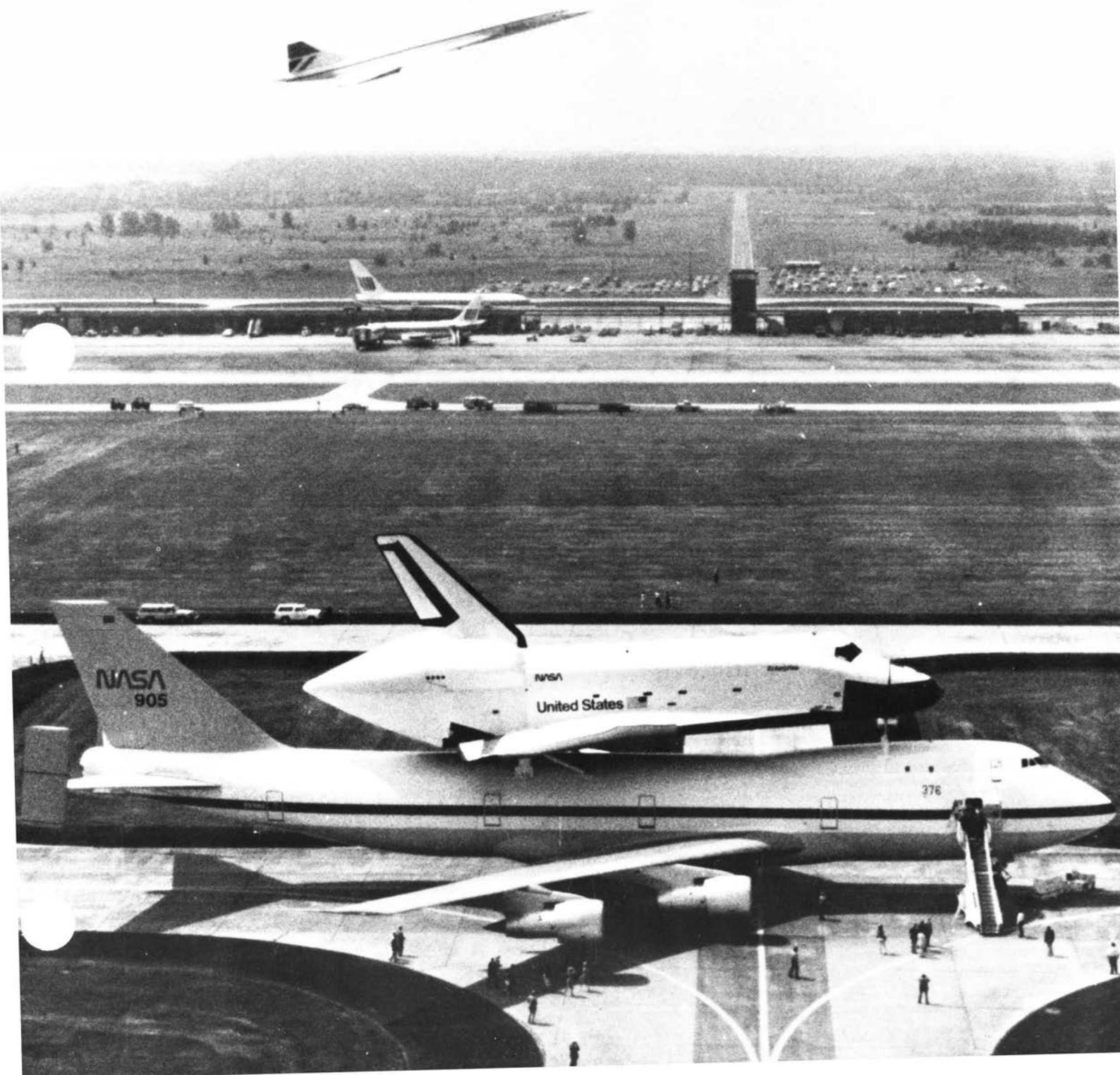
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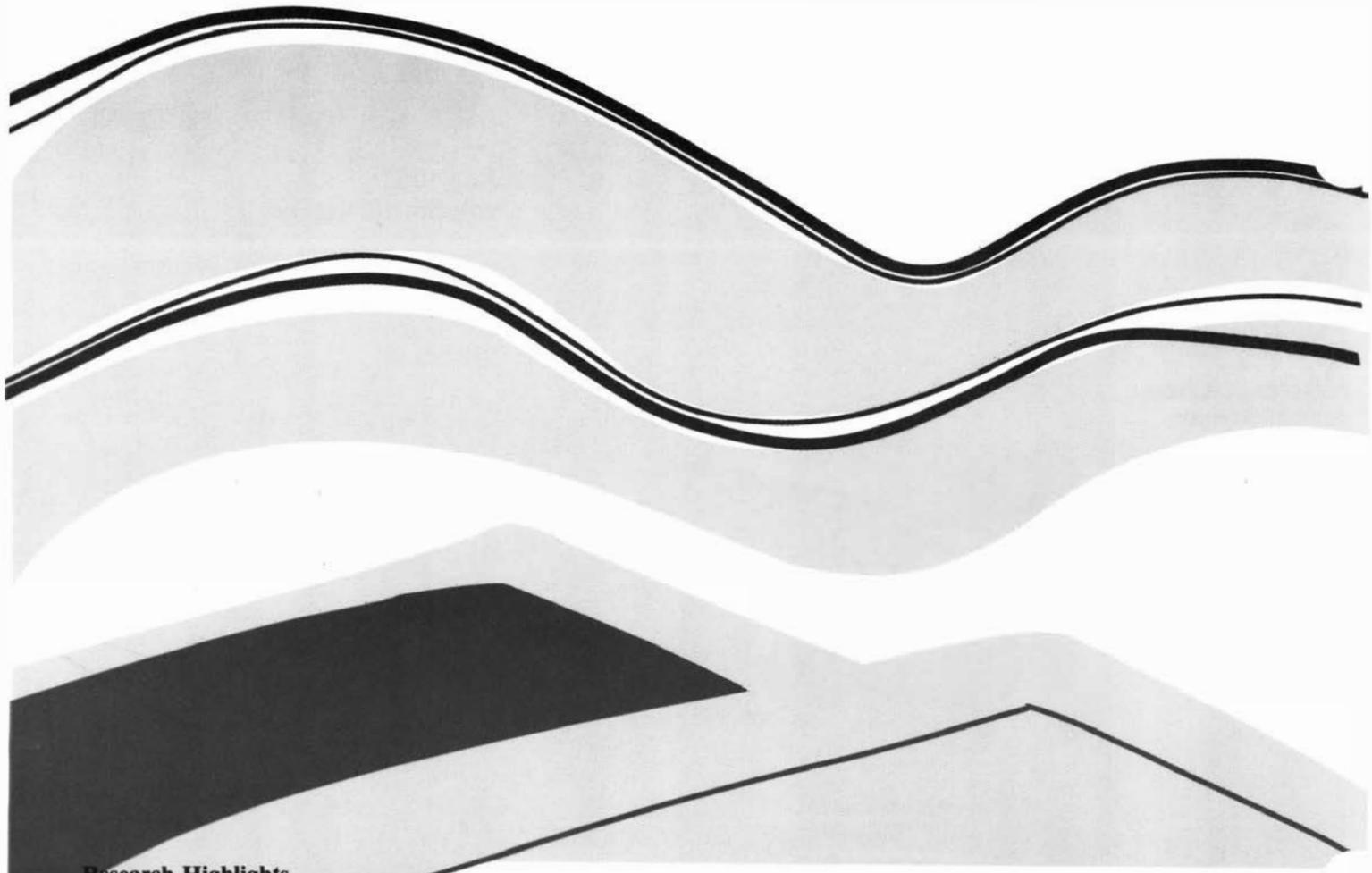
July 1983
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US Department
of Transportation

**Federal Aviation
Administration**





Research Highlights

Do pilots have difficulty in holding their assigned altitude when flying in mountain waves—turbulent air caused by wind sweeping up and over the mountains?

FAA Technical Center controller Richard J. Regan, Systems Analysis Branch, spent two weeks at the Denver, Colo., ARTCC monitoring traffic in sectors noted for atmospheric turbulence over the Rocky Mountains. He compared the assigned altitudes of high-flying traffic with their altitude readouts on a radar display.

The project is part of the vertical-separation-standards program that is looking at reducing the separation of traffic above 29,000 feet from the present 2,000 feet to 1,000 feet.

Regan paid special attention to those flights that had large differences in altitudes. In these cases, Denver controllers queried the pilots about the atmospheric effects they experienced.

Besides logging data, Regan recorded pertinent voice communications between pilots and controllers in his sector. In addition, the traffic on radar displays was recorded by a unique radar data recorder, developed at the Technical Center, that was installed earlier by Edwin Mack, also of the Systems Analysis Branch. This equipment recorded all Mode C pressure-altitude returns from aircraft above 29,000 feet in the pertinent areas.

The information gathered is being analyzed at the center. ■

“FAA’s mission is to promote the safe and efficient use of the nation’s airspace, facilities and the vehicles that travel the airways. To achieve this objective, we should control but not constrain aviation; we should regulate but not interfere with free enterprise of competitive purpose; and we should recognize that most air travelers do so by means of scheduled air carriers.

We have a responsibility to consider their priority but not to the extent that it excludes the single individual from enjoying man’s greatest achievement—solo flight. Above all, we must remember that the airspace belongs to the users and not the FAA.”

—J. Lynn Helms

The cover: *The space shuttle “Enterprise” landed at Dulles International Airport near Washington, D.C., last month piggy-backed on NASA’s specially modified Boeing 747, returning from display at the Paris Air Show. A rare moment was captured when another state-of-the-aviation-art vehicle—the Concorde—took off above the shuttle to return to Europe.*

Photo by James Gilliam
Dulles Tower ATCS

Correction

The photo of Capt. Robert S. Johnson on page 9 of the May 1983 issue was not during World War II but after the war, and the aircraft depicted was a Republic F-84 Thunderjet.

World



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A Controller Dynasty

When the strike hit, a retired controller came back to his job and is still there. He has three sons, going on four, who are controllers, and a grandson is talking about joining up.

4

Cool and Professional

Life and separated is Air Traffic's goal, but when disaster impends, controllers can provide the TLC service that makes the difference. This is the story of two such flights.

10

Learning These ABCs Saves Lives

Every day there are new stories on the value of cardio-pulmonary resuscitation. FAA WORLD attends a headquarters training session.

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The Way To Go!

Arapahoe County Airport in Colorado is a boomer. Though it's growing fast—with a new automated FSS and a new tower being designed—it's a model of consistent and good planning.

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Cool and Professional

Two Tales of How Controllers Handle the Tough Ones

“Got an emergency for you,” James Ferguson of the Indianapolis ARTCC announced to Gregory Karam of Greater Cincinnati approach control—“Air Canada 797.”

With that handoff began an 11-minute drama in which calm professionalism on both sides of the microphone landed a burning airliner and saved half the lives on board.

It was 7:09 on the evening of June 2, 1983, when Ferguson raised Karam in the TRACON after the DC-9 pilot announced electrical problems and called “Mayday,” the first such call the 30-year veteran had heard.

The Air Canada flight from Dallas-Fort Worth to Toronto had a fire of unknown origin in its rear washroom that was pouring smoke into the cabin and against which fire extinguishers had proved useless.

Ferguson selected Cincinnati as a possible landing site for the stricken airliner in that it was the closest by three minutes.

Karam acknowledged the handoff of the Canadian plane, which was at 33,000 feet and 25 miles southwest of the airport, and immediately called local control to arrange for crash trucks.

“Approach,” the co-pilot called. “Air Canada 797—we’re on Mayday; we’re going down.”

Karam, a controller for nine years, an attorney and a flight instructor, was ready: “Air Canada 797, Cincinnati approach—altimeter 3003, ident, plan runway 36 ILS. The wind



Administrator Helms (left) congratulates Cincinnati controller Gregory Karam for a job well done, as Mrs. Karam beams.

The Eastern Air Lines pilot had already cut short his flight from Miami, Fla., to Nassau in the Bahamas on the morning of May 5, 1983. He had trouble in one engine of his three-engine L-1011 and thought it best to shut it down.

Now, at 9:23, headed back to Miami, he radioed the Miami ARTCC that he had lost oil pressure in all three engines.

Despite the fact that one engine had already been shut down as a precautionary measure, the pilot seemed unworried. He advised Miami that he suspected the problem was “faulty indications.” Anyway, the plane could fly on one engine, if necessary.

His confidence that it was the

gauges—based on the fact that the three engines’ systems were totally independent—was misplaced. Although no one knew it at the time, critical oil seals had been left out of all three engines during overnight maintenance.

The result was a heart-thumping drama during which the aircraft lost all three engines and fell more than 10,000 feet. A water-ditching seemed imminent, and the 172 passengers and crew donned their life vests and began earnestly studying the emergency-procedures material in the seat-back pockets.

Miami ARTCC controller Martin Lauth had long since learned how to be calm and reassuring in his 26 year with FAA, a good many of them at O’Hare Tower.

at Cincinnati 220 at four, and we are VFR.”

While pilot Donald Cameron handled the controls, co-pilot Claude Ouimet explained about the fire and the clouds of smoke.

Karam: All right, sir. When able, turn right 090 vector for the ILS 36 approach and maintain 5,000, Air Canada 797.

DC-9: Air Canada 797, right turn, heading 090.

Suddenly, Karam lost the plane’s alphanumeric from the radar screen, and he asked the co-pilot to squawk a new transponder code, but nothing happened. He now had to work the plane on primary radar only. He called for the plane’s altitude and a confirmation of its heading.

DC-9: OK, we check. . . . We don’t

have any heading any more. All we have is a small horizon. [artificial horizon that shows banks and vertical attitude]

With most of the aircraft’s navigation instruments gone, Karam had to steer the aircraft by radar. “Air Canada 797, if able, turn left,” he said. In fact, pilot Cameron was to use that very term later, saying, “We were steered to the airport by the most capable air traffic controller whose voice I have ever heard.”

“Air Canada 797 turning left,” the co-pilot responded.

Karam: Air Canada 797, this is a no-gyro surveillance approach for runway 27 left. Descend and maintain 3,500. Can you hold that altitude?

DC-9: Air Canada 797, that’s affirmative.

Karam: 797, thank you. Stop turn. Your position is 12 miles southeast of Cincinnati Airport. A no-gyro surveillance approach to runway 27 left. You’re cleared to land on that runway. The wind 220 at four.

Watching his artificial horizon, Cameron leveled his wings and stopped the turn.

Between these exchanges, Karam tersely worked two Piedmont Airlines flights.

Karam: Air Canada 797, the minimum descent altitude for runway 27 left is 1,280 feet, and the weather is good VFR here. You should have no problem picking up the runway at that altitude.

The added difficulty under these stressful conditions was that the pilots



Miami ARTCC controller Martin Lauth.

Lauth, following the announcement of loss of oil pressure: OK, fine, why don’t you turn right about 15 degrees. We’ll give you direct to Miami. Maintain flight level 200—whatever altitude you wanna maintain—and we’re just gonna have the equipment standing by anyway for ya.

Though they wanted the higher altitude, the pilots

never regained it. Eastern Flight 855 had begun its descent to Nassau from 23,000 feet when it shut down its No. 2 engine in the tail and turned around, because Nassau did not have adequate maintenance facilities. Lauth regained contact with the returning flight at 13,600 feet, and it descended from there.

After five minutes of perfunctory exchanges, with the flight at 12,000 feet and midway between Nassau and Miami . . .

L-1011: Eastern 855, we’ve just lost our number two engine, sir. [The pilot called it wrong—he meant the No. 1 engine on the left wing.]

Lauth: OK, losing number two. You still got two turning.

L-1011: Negative. We only have

were landing at an airport they had never used before.

DC-9: Canada 797, we have no contact.

Karam to local control: Stop the traffic off the airport. Give me full approach lights and runway lights for 27 left. That's where he's coming.

Karam: Air Canada 797, turn left.

DC-9: Air Canada 797, we're turning left.

Karam: Air Canada 797, confirm altitude.

DC-9: Air Canada 797, 2,500 feet.

Karam: Air Canada 797, roger. You're 14 miles southeast of the airport. Continue your left turn.

DC-9: Continue left turn. We don't see the airport.

Karam: Understand, sir. Advise me when you're VFR conditions.

Co-pilot Ouimet was to recall the next two minutes as the worst moments when they couldn't spot the airport.

DC-9: We're VFR now—we do not see the airport.

Karam: Understand. I'm turning you to the airport, Air Canada 797.

Karam: Air Canada 797, stop your left turn.

DC-9: We have an airport at one o'clock. Is that it?

Karam: Air Canada 797, fly your present heading. Sir, you might be looking at a satellite airport. I want to confirm it's Cincinnati's—12:30 and 12 miles.

DC-9: Air Canada 797, OK, we're

maintaining 2,000.

Karam: Air Canada 797, you are cleared to land on runway 27 left. The wind 230 at four.

DC-9: Cleared to land? We don't see the runway.

Karam: All right, sir. Present heading is taking you to the field.

Karam: Air Canada 797, turn left.

DC-9: Air Canada 797, turn left, and we see obstruction. . . .

Karam: Air Canada 797, stop your left turn.

DC-9: Canada 797, where's the airport?

Ouimet's voice was anxious, but the radar controller's voice came back reassuringly.

L-1011: We need a heading—we'd like to go from 27 left.

Lauth: OK, your position right now is 70 miles southeast of Miami. You're about 14 minutes out, heading 285 for Miami. . . . And you can plan a straight-in 27 left. We're telling Approach about it right now. Equipment will be standing by.

About three minutes later, just as Lauth is giving the aircraft a course adjustment at 59 miles out . . .

L-1011: We're losing another engine . . . [and 14 seconds later] We've lost our third engine right now.

Lauth: OK. Have you got the other one started?

L-1011: Not Yet.

Lauth: Do you have any of them turning?

L-1011: Negative.

Lauth: Just advised the Coast Guard is coming out toward you



one now, and we're gonna restart our number two engine [in the tail].

Lauth: OK, fine; we're listening OK. Cleared direct. Miami's altimeter 2989, and you can descend at your discretion at any altitude you need. You're clear of traffic.

Flight 855 sits on the ramp at Miami International Airport after it made an emergency landing on one engine.

Karam: Twelve o'clock and eight miles, Air Canada 797.

DC-9: OK, we're trying and locate it. . . . advise people on the ground we're gonna need fire trucks.

Karam: The trucks are standing by for you, Air Canada. Can you give me the number of people and amount of fuel?

DC-9: We don't have time; it's getting worse here.

Karam: Understand, sir. Turn left now, and you're just a half mile north of final approach course.

DC-9: Turning left, Air Canada 797.

Karam to local control: Give me full runway lights.

Local control: Full runway lights.

Karam: Air Canada 797, stop turn.
DC-9: OK, we have the airport.

Karam: Air Canada 797, proceed inbound for 27 left. You're cleared to land. Wind 230 at four.

Karam: You're just a little bit north of the final approach course for runway 27 left, Air Canada 797.

DC-9: OK, it's a bad fire and we're getting smoke.

Karam to local control: You're gonna have to have the trucks come right up to him; he's got smoke and fire aboard.

Karam: You need not acknowledge further transmissions from me, Air

Canada 797. You are cleared to land. You're four miles east of the airport.

Karam: Air Canada 797, you're on a three-mile final.

Karam to local control: Do you have him in sight.

Local control: Yes.

Karam: 797, the tower has you in sight, and you are cleared to land. You're on a two-mile final for 27 left. The wind is 220 at four.

DC-9: Air Canada 797, bad fire. OK, get the truck.

A minute passes.

Karam to local control: Let me know when he lands, please.

Local control one second later: He's landed. ■

now. . . . Keep me advised of your intentions, and we'll keep you on here as long as we can. Approach is also watching you at the same time. You're about 20 miles west of Bimini right now. . . . And if it looks like you're gonna have to ditch, just keep us advised. We should be able to hear you at least down to 2,500.

L-1011: [less than 1½ minutes later] OK. We don't believe we can make land.

Lauth: OK. We've got all the help we can coming out as fast as we can.

Coast Guard: We're a Falcon jet coming off the beach flying out of Opa Locka. What's your position, sir?

For the next 3½ minutes, Lauth directs the Coast Guard plane to intercept Flight 855, as the stricken airliner sinks at the rate of 1,200 feet per minute. The tracking plane finally spots the L-1011 only to lose it in the clouds. Just as Lauth is bringing the

Coast Guard plane in behind the airliner at 4,000 feet at 9:39 . . .

L-1011: We have an engine going now, and we believe we can make the airport.

The crew had restarted the No. 2 tail engine on their third try. It's considered likely that this recovery would not have been possible but for the precautionary shutdown of that engine earlier.

Lauth: OK. I'm gonna stop talking, Eastern. You're cleared a straight-in contact approach if you can. 118.1. Don't talk if you don't have to.

L-1011: 118.1, cleared for a straight in; we want 27 left; we are in about pretty good shape for that.

Lauth: Just go on in; we're waiting for ya.

Lauth continues to work the Coast Guard plane behind 855, which repeatedly loses visual contact in clouds and which decides to follow the airliner right into Miami airport. As Miami comes into view . . .

L-1011: Well, we believe we've got it made.

Lauth: Fantastic.

L-1011: Of course, we're cleared to land?

And land they did just shy of 9:45 a.m.

Said Capt. Steve Thompson, one of the two captains of Flight 855, in a letter to Administrator Helms, [The center's and controller Lauth's] "prompt action in coordinating a possible rescue effort, informing the proper personnel I am sure would have been instrumental in saving lives had the outcome been different. It was especially reassuring to hear Mr. Lauth's professional calm voice responding to our calls." ■

**By Morton
Edelstein**

The Great Lakes public affairs officer, he has been a reporter, foreign correspondent, editor, producer on Chicago newspapers, network TV.



A Controller Dynasty

Back at Mike, Family Head May See 3 Generations in ATC

On Aug. 3, 1981—two days after the controllers' strike—Ken Patterson, Great Lakes Air Traffic Division manager, received a phone call from then retired Nick Molsen, Sr. The 62-year-old Molsen, who had spent 33 years as an air controller was blunt: "I don't care when or where you need me," he said, "I'm ready to report for duty."

Patterson took Molsen up on the offer, and he's been back on duty ever since. That's the kind of dedication Nick Molsen had from the time in 1947 when he was hired and assigned to the control tower in South Bend, Ind., to his first retirement in 1980 as chief controller at Chicago's Midway Tower.

Some would say Molsen's FAA loyalty is blood-thick. Three of his seven sons (he also has three daughters) are controllers. And a fourth, Joe—the youngest—graduated from college in May and then, you guessed it, planned to take the controller's exam with hopes of following in his dad's and brothers' footsteps.

Nick Molsen, Jr., a red-haired, beefy, six-foot 37-year-old, is the oldest of the sons. He remembers his father taking him on numerous visits to the Midway Tower when he was a young boy growing up on the South Side of Chicago.

"Things were a little different then," Nick Jr. recalled, "All that showed up on the radar screen was a blip. Today we have alphanumeric computerized readouts that show the call sign of the aircraft, its altitude and ground speed."

Those trips to the tower were enough to whet Nick Jr.'s appetite,



Nick Molsen, Sr., on his second time around, talks a pilot straight in at Midway Airport Tower, Chicago.

and when he was still in his teens he had made up his mind he was going to be an air traffic controller. After spending two years at the University of Illinois, he left to join the army where he became an air traffic controller. Following his discharge in 1969, he was hired by the FAA. Then came a stint at the Academy in Oklahoma City and then duty at O'Hare International Airport, Palwaukee (north of Chicago) and back to O'Hare in 1973.

The father of three sons, Nick Jr.'s middle son has already informed him

Photos by James "Moose" Rood



In 1955, Nick Molsen, Sr. (left) was an old-timer already—a team supervisor. The trainee at the right was a youth named Raymond Van Vuren, now director of the Air Traffic Service.

that he intends to work for the FAA when he graduates from college. So the Molsen line of air traffic controllers looks good for at least a third generation.

Then there are Nick Jr.'s brothers who are taller than he. Peter, 36, graduated from Western Illinois University in June 1969 and was immediately hired by the FAA. After



A controller for 14 years, Peter Molsen (left) works at the Minneapolis-St. Paul International Airport Tower with area supervisor Walfred Anderson.



The senior junior—Nick Molsen, Jr.—works departures at the O'Hare Airport TRACON. He's been at O'Hare 10 years.

training at the Academy, Pete was assigned to DuPage ATCT, Springfield, and finally in 1975, Minneapolis where he is an FPL controller today. He is the father of two girls and a boy and is a do-it-yourselfer who has virtually built his own house in Hudson, Wis.

The third son, Jeff, 35, graduated from Chicago State University in 1972 with honors. It was a couple years after college before he decided to join his other two brothers in the FAA. In 1974, he was assigned to Palwaukee Tower and three years later transferred to O'Hare where he

works today beside Nick Jr. as an FPL controller.

It seems the Molsens never leave their jobs in the towers. "Whenever we get together at mom's (Eunice)," said Nick Jr., "The women go in one room and talk and we go into another and talk aviation—we talk about our jobs."



Jeff Molsen is a full performance level controller at O'Hare Tower.

It's obvious the Molsens enjoy their work. "There's a great feeling of satisfaction that you can move airplanes from one area to another through all kinds of weather conditions," said Nick Jr., adding, "During the stike, I didn't mind working 10 hours a day, six days a week for several months. Naturally, it was more of a mental strain than normal."

What are the toughest conditions to work under? Nick doesn't even think twice to answer that one. "When I'm handling IFR traffic in minimum weather conditions. Parallel approaches and spacing are also tricky."

O'Hare is indeed the busiest airport in the country, handling approximately 800,000 flights a year. And since 1955 when it opened, it has only been closed some five days.

Sure, there's tension in the tower. "But I don't feel it," Nick insists.

There was one day that does stand out in his mind and it just fell short of an Excedrin day. It was May 25, 1979, the day the DC-10 crashed killing nearly 300 persons.

Nick was on the 3 p.m. to 11 p.m. shift and had just walked into the tower to relieve the controller on the previous shift. The plane had crashed just a few

minutes before. "It was the toughest two-hour session I ever worked in 14 years. Everybody in the tower was shook up. That night I didn't sleep well." ■

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 airships, including *Shenandoah Saga*.



Learning These ABCs Saves Lives

Headquarters Builds a Cadre of Employees Certified in CPR

It was the summer of 1977, and Phyllis Burbank of the Office of Personnel and Training was vacationing at an isolated beach in North Carolina, enjoying the sun and resting a bandaged foot on which she had dropped an iron. The only other people there were an older couple and a little girl some distance away.

Her reverie of sun and sparkling ocean vista was suddenly interrupted by the youngster running up to her.

"Please come and help Mr. Henry," she said. "He's sick. Please can you come."

Burbank limped over with the frantic child to the elderly couple. Mr. Henry, who had been fishing while seated in a lawn chair, was incapacitated and making gurgling sounds.

She had never taken cardio-pulmonary resuscitation (CPR) training and it was not yet offered on a regular basis in FAA. She tried to help his breathing through mouth-to-mouth resuscitation, but with him still seated in the chair—something she later learned was incorrect.

Seeing that she wasn't making much progress, she struggled to a realtor's office for help and an ambulance was summoned. She later learned that Mr. Henry had suffered a cerebral hemorrhage but survived the incident.

Burbank felt frustrated from the experience. She hadn't known how to check the victim's condition or how to help him. It also was embarrassing, for her husband worked in Fairfax County's fire rescue service in Virginia.

She found him sympathetic, however. "You can't learn CPR simply by having me show you," he said. "You have to take a course and then practice the techniques regularly."

Now the battalion chief for Fairfax County, Lt. Burbank encouraged his wife to take CPR training in the development where they lived.

Shortly after, Phyllis Burbank, a convert, began talking up the idea of having such training available at the agency to handle emergencies that could arise among the 2,500 people in the headquarters building. Dr. Edwin Westura of the FAA clinic also expressed interest in inaugurating CPR training.

However, it was July 1978 when Col. Don Roberts of the FAA Emergency Operations Staff met with Larry Covington, chief of the Training & Career Development Branch; Jim Strnad of Personnel and Training; and Dr.

Westura to discuss such a program. One impetus for doing something was the American Heart Association's goal of having 20 percent of the District of Columbia's work force certified in Basic CPR.

Burbank, because of her personal interest and her job in personnel and Training, was asked to be the FAA coordinator for the program. And since then, she



Departmental CPR instructor Janet Vizard (left) demonstrates tilting the chin and head back to facilitate breathing on "victim" Gloria Smothers, Program Engineering and Maintenance Service. Charlotte Fesko, Accounting, observes.

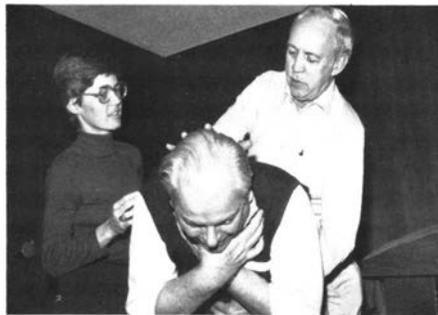
Photos by Dennis Hughes



Switching roles, Jordan ventilates once for every five compressions performed by second rescuer Burbank.



While first rescuer Richard Jordan of the National Highway Transportation Safety Administration administers chest compression to manikin Annie, FAA CPR instructor Phyllis Burbank checks the victim's carotid pulse.



CPR instructor Janet Vizard checks the technique of author Thom Hook as he administers four blows to free a simulated obstruction in the throat of Don Dwyer, Office of Aviation Safety.

homeward-bound bus. CPR saved his life (see separate story). I once watched others applying CPR to a jogger lying prone on the sidewalk, unable to help him myself.

The nine-hour course is not easy—far from it. DOT and FAA instructors show you the causes of obstructions and heart stoppage and the procedures for reviving a victim and provide practice for half-a-dozen possible situations. You are given

(continued on page 14)

A Close Call . . . But for CPR

Charles Collier, a 44-year-old special assistant to the director of Personnel and Training, doesn't neglect himself. He jogs a couple of miles several times a week, is a licensed soccer referee and has ridden his exercycle 9,500 miles in the last four years.

He had jogged two-and-a-half miles the day before. Now, April Fools Day was drawing to a close, and he was homeward bound on a bus to Springfield, Va. He suddenly felt a severe chest pain. Then the book he was reading fell from his hands, and he tumbled, unconscious, to the floor of the bus.

Among the passengers who had boarded at the Pentagon was Lt. Col. John Taylor, Army Deputy Chief of Staff for Operations. He wasn't nearby, but he sensed that this was an emergency for which he had been trained.

Col. Taylor determined that Collier had very weak breathing and a faint pulse. He asked a bystander to summon help and began CPR. A

victim of heart block, Collier could be clinically dead within six minutes unless revived. After a series of chest compressions by Taylor, Collier was revived.

An ambulance soon arrived and rushed Collier to a nearby hospital's coronary care unit. While undergoing tests at the hospital, he suffered another heart block, and this time it was medical personnel who had to use CPR to bring him around.

Tests revealed that Collier, despite his excellent physical regimen, had developed a 40 percent blockage in two arteries. There was no heart damage. Given medication and with an "on demand" Pacemaker implanted, he was brought back to his previous exercise level in six weeks.

But, after being "sportively imposed upon on the first day of April," he was back to work in two weeks, thanks to modern medicine and, even more so, to the fact that someone trained in cardio-pulmonary resuscitation was riding the same bus at the critical moment. ■

has become an emergency medical technician and is on the volunteer rescue squad in her community.

Most people enrolled in the class I took had a personal motivation like that of Burbank for wanting the training. Fresh in everyone's mind was the heart blockage that felled Charles Collier of Personnel and Training only a few days earlier on a

Aeronautical Center

- **Georgetta James**, supervisor of the Computer-Based Instruction System Section, Training Methods & Operations Branch, FAA Academy.
- **Patricia K. Martin**, group supervisor in the Radar Training Facility Section, Air Traffic Branch.
- **Donald L. Shearer**, supervisor of the Aircraft & Avionics Maintenance Section, Aircraft Services Branch, Aviation Standards National Field Office, promotion made permanent.

Alaskan Region

- **Joel Henkelman**, maintenance mechanic foreman in the King Salmon Central Maintenance Facility in Bethel.
- **James B. Hodges**, area officer at the Anchorage ARTCC.
- **Kaye B. McLeod**, area manager at the Bethel Flight Service Station, from the Anchorage FSS/IFSS.
- **Margie E. Morrow**, area officer at the Anchorage ARTCC.
- **Wendell L. Nelson**, supervisor in the Electronics Section, Planning/Establishment Branch, Airway Facilities Div., from the Guam AF Section.

Central Region

- **Raymond I. Fox**, chief of operations in the Programs Section, Program and Planning Branch, Airway Facilities Div., from the Kansas City ARTCC.
- **Ronald G. Kline**, area supervisor at the Cedar Rapids, Iowa, Tower, from the FAA Academy.
- **Jorge E. Pereira**, area supervisor, Special Projects Section—Staging Area, Establish-

ment Engineering Branch, Airway Facilities Division.

- **Luther C. Salmons**, unit supervisor in the St. Louis, Mo., Flight Standards District Office, from the New Orleans GADO.

- **Robert L. Wahlert**, area supervisor at the Cedar Rapids Tower.

Eastern Region

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- **James A. Means**, area supervisor at the Erie, Pa., Tower.
- **Edward P. Ryan, Jr.**, area officer at the New York ARTCC.

Great Lakes Region

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- **Henry E. Engler**, area manager at the Cleveland, Ohio, ARTCC.
- **Clifford J. Essenmacher**, area manager at the Cleveland ARTCC.
- **Charles E. High**, area supervisor at the Detroit, Mich., FSS, promotion made permanent.
- **Rolf A. Hohertz**, manager of the Chicago Midway Airway Facilities Sector Field Office.
- **Allen B. Johnson**, area officer at the Cleveland ARTCC.
- **Daniel E. Koch**, manager of the Carbondale, Ill., Tower.

- **Luther R. Lang**, area officer at the Cleveland ARTCC.

- **George R. Lasko**, assistant manager for systems performance at the Cleveland ARTCC AF Sector.

- **Edward Lefko**, area manager at the Cleveland ARTCC.

- **Theodore V. Linn**, assistant manager for automation at the Cleveland Hopkins Tower.

- **David S. Mezurashi**, watch supervisor at the Chicago O'Hare AF Sector, from the Hilo, Hawaii, AFSFO.

- **William D. Sims**, area manager at the Cleveland ARTCC.

- **Homer E. Stamper**, assistant manager for training at the Cleveland ARTCC.

New England Region

- **Ronald L. Ellis**, manager of the Augusta, Maine, FSS, from the Boston FSS.
- **John W. Wagner**, systems engineer at the Boston ARTCC AF Sector.

Northwest Mountain Region

- **David A. Bennett**, manager of the Hillsboro, Ore., Tower, from the Colorado Springs, Colo., Tower.
- **Woodford R. Boyce**, manager of the Denver Aircraft Certification Field Office.
- **Arthur P. Coleman**, area manager at the Portland, Ore., Tower, from the Operations Branch, AT Division.
- **David B. Isenhour**, manager of the Cedar City, Utah, FSS, from the Seattle, Wash., FSS.
- **David J. Kohn**, manager of the Seattle FSS, from the AT Division.

Photo by Ellis Young



The one-two of Outstanding Handicapped Employees of the Year for 1983 are top winner Cynthia Ann Cunningham of the FAA Academy and runner-up Kenneth Ogden of Washington headquarters. Cunningham, shown with Gary Rose, Radar Training Facility Terminal Unit supervisor, is a "pilot" in the terminal radar training lab and has helped develop a new training manual. Ogden is a public documents assistant in the Public Inquiry Center, Office of Public Affairs, where his productivity and cheerful manner in public contact has been termed exemplary. (right, Administrator Helms presents a plaque to Ogden.

■ **Gaylen M. Larson**, area supervisor at the Portland Tower, from the Las Vegas, Nev., Tower.

■ **Maynard Wemple**, engineering equipment operator foreman in the Portland Field Maintenance Party, from the Denver, Colo., Field Maintenance Party.

■ **Russell P. Williams, Jr.**, manager of the Butte, Mont., AF Sector Field Office, Billings, Mont., Sector, from the Great Falls, Mont., Sector.

Southern Region

■ **Edward S. Bayne**, area supervisor at the Tri-City Airport Tower, Bristol, Tenn., from the Knoxville, Tenn., Tower.

■ **William S. Brown**, assistant manager for program support, Miami Fla., ARTCC AF Sector.

■ **Ronnie O. Farmer**, assistant manager of the Charlotte, N.C., AF Sector, from the Raleigh, N.C., Sector.

■ **Paul J. Greutman**, area supervisor at the Jacksonville, Fla., Tower.



Photo by Dennis Hughes

■ **William D. Hendrick**, manager of the Knoxville FSS, from the London, Ky., FSS.

■ **Kenneth W. Jones**, unit supervisor in the Atlanta, Ga., ARTCC AF Sector.

■ **Marvel K. Kruse**, manager of the San Juan, Puerto Rico, CERAP.

■ **Ralph F. Mason**, assistant manager for program support in the Charlotte, N.C., AF Sector, from the Knoxville Sector.

■ **Douglas R. Messick**, manager of the Charlotte AF Sector, from the Knoxville Sector.

■ **Melville J. Norgart**, manager of the Miami Flight Standards District Office.

■ **Edwin R. Perry**, area supervisor at the Jacksonville Tower.

■ **John R. Perry**, unit supervisor in the Miami ARTCC AF Sector.

■ **Charles R. Pinkerton**, manager of the Greer, S.C., AF Sector Field Office, Charlotte Sector.

■ **Howard Rainey**, area supervisor at the Tampa, Fla., Tower, from the Greensboro, N.C., Tower.

■ **Ronald L. Reading**, area supervisor at the Fort Myers, Fla., Tower, from the Greensboro Tower.

■ **Jose M. H. Suazo**, unit supervisor in the Memphis, Tenn., Hub AF Sector.

■ **John P. Tomkins**, area supervisor at the Jacksonville Tower.

■ **Edward W. Watkins**, chief of the Technical Inspection Group, Evaluation Staff, AF Division.

Southwest Region

■ **Robert T. Allen**, area supervisor at the Houston, Tex., Intercontinental Tower.

■ **Robert L. Bethel**, area supervisor at the

New Orleans, La., FSS, from the Omaha, Neb., FSS.

■ **Carlos C. Cazares**, manager of the Fort Smith, Ark., AF Sector Field Office, Little Rock, Ark., Sector, from the San Antonio, Tex., Sector.

■ **Doyle D. Davis**, assistant manager for program support in the Fort Worth, Tex., ARTCC AF Sector, from the Austin, Tex., Sector.

■ **James K. Eastham**, enroute automation supervisor at the Houston ARTCC.

■ **Jackie H. Girod**, assistant manager of the Little Rock Tower, from the Texarkana, Ark., Tower.

■ **James E. Honeycutt**, area supervisor at the Houston ARTCC.

■ **Arnold L. Hunt, Jr.**, manager of the Houma, La., Tower, from the Oakland, Calif., Tower.

■ **Larry J. Little**, area supervisor at the Fort Smith Tower, from the FAA Academy.

■ **Matthew P. McCorey**, area supervisor at the Fort Smith Tower, from the Fort Worth ARTCC.

■ **Warren H. Morey**, manager of the Russellville, Ark., AF Sector Field Office, Little Rock Sector.

■ **William F. Peugh, Jr.**, systems engineer at the Albuquerque, N.M., ARTCC AF Sector.

■ **James E. Ramsey**, area supervisor at the McAlester, Okla., FSS, from the Midland, Tex., FSS.

■ **Librado Silva**, area supervisor at the Albuquerque ARTCC, promotion made permanent.

■ **Oscar P. Simank, Jr.**, manager of the

The information in this feature is extracted from the Personnel Management Information System (PMIS) computer. Space permitting, all actions of a change of position and/or facility at the first supervisory level and branch managers in offices are published. Other changes cannot be accommodated because there are thousands each month.

Carlsbad, N.M., AF Sector Field Office, El Paso, Tex., Sector.

■ **John H. Smith**, assistant manager for training at the Fort Worth ARTCC, from the Air Traffic Division.

■ **Yale M. Taylor**, area supervisor at the Tulsa, Okla., FSS, from the Ponca City, Okla., FSS.

■ **Ray F. Terry**, manager of the Lubbock, Tex., General Aviation District Office, from the Flight Standards Division.

Technical Center

■ **Anthony E. Severino**, supervisor of the Software Engineering Section, Facility Engineering & Maintenance Branch, Facilities Division.

Washington Headquarters

■ **Roger R. Jones**, staff officer/aviation safety inspector, Flight Standards Staff, Europe, Africa & Middle East Office, Brussels, Belgium, from the Miami, Fla., GADO.

Western-Pacific Region

■ **John A. Bowman**, manager of the Paso Robles, Calif., AF Sector Field Office ARSR site in Atascadero, Calif.

■ **Edward R. Brady**, navajds/communications specialist in the Hilo, Hawaii, AF Sector Field Office.

■ **Edward J. Deville, Jr.**, area supervisor at the Oakland, Calif., ARTCC, promotion made permanent.

■ **Martha B. Landers**, manager of the Oakland FSS, from the AT Service.

■ **Leslie G. Levi**, systems engineer at the Oakland ARTCC AF Sector.

■ **Frederick R. Mauck**, area supervisor at the Coast TRACON, El Toro MCAS in Santa Ana, Calif., from the Orange County Tower, Santa Ana.

■ **Tokiwo Nagata**, systems analyst at the Hilo AF Sector Field Office.

■ **Ellis A. Ohnstad**, supervisor of the Planning Section, Planning and Programming Branch, Airports Division, promotion made permanent.

■ **Derald E. Vanderpool**, manager of the Stockton, Calif., Tower, from the Las Vegas, Nev., Tower.

CPR (continued from page 11)

both a written and "hands on" test.

We used six manikins—all named "Annie"—for practicing CPR, but we used each other for practice in choking and obstruction emergencies. You have to be rated satisfactory in each of the six situations on from four to 14 steps that must be performed in the proper order.

The "ABCs" are kept in mind at the outset of each emergency: Airway, Breathing and Circulation. You have to clear the airway by tilting the head back; check the breathing or lack of it by looking, listening and feeling; and determine if there is circulation by taking a carotid pulse on adults or a brachial pulse on an infant.

Ventilating a victim starts with four mouth-to-mouth breaths, observing the chest rise. If the victim has no pulse, the rescuer gives four cycles of 15 chest compressions and two ventilations and then checks for the return of pulse and spontaneous breathing.

When a second rescuer who knows CPR appears on the scene, the procedure is changed to five chest compressions to each ventilation. The two rescuers switch roles as necessary to avoid undue fatigue, because being a rescuer does involve physical strain.

For CPR, practice makes perfect. So, on the first Tuesday of each month, Burbank has "Annies" available with instructors for certified CPR instructors to refresh themselves on the procedures.

Only by taking these recurrent self-refreshers can these rescuers expect to handle the unpredictable emergencies that can mean life or death. ■



Rescuer Duane Van Etten, of the Office of Aviation Policy and Plans, practices ventilating an infant manikin, which involves proper support for its head and the rescuer's mouth covering the child's mouth and nose.

You've tried the normal channels—your supervisor, the personnel management specialist, the regional office—and can't resolve a problem or understand the answers you've gotten. Then ask FAA WORLD's Q&A column. We don't want your name unless you want to give it or it's needed for a personal problem, but we do need to know your region. All will be answered here and/or by mail if you provide a name and address, which will be kept confidential.

When is an approach lighting system (ALS) required to be illuminated for VFR landing aircraft? Our tower operates less than 24 hours a day, and the associated flight service station does not have control of the ALSs. In addition, the ALSs are not associated with the runway edge lights. When we close, the runway edge lights are illuminated for a runway that has an ALS on both ends of the strip. Disregarding the requirement and effect it would have on IFR approach minimums, is it required for us to illuminate both ALSs when we close the tower at night? The possibility exists that VFR aircraft may land in either direction due to wind shifts, etc. Then the ALS would be serving the landing runway, as stated in Para. 1043 in Handbook 7110.65C.

Approach lighting requirements can be found in the cited handbook, Paras. 1043a(1) and 1050, which apply to IFR and VFR aircraft, since no distinction is made between IFR and VFR operations.

When the tower is closed, the operation of lights should be carried out in accordance with the procedure in Handbook 7210.3F, Para. 1251b. More specifically, runway lights shall be set in accordance with a Letter of Agreement with the airport manager or operator.

I have been searching for an answer to this question for some time, and I am unable to come up with the answer. As a GS-856-12 journeyman technician on a rotating work schedule, what is the regulation number or the order that states that I must stay on duty until properly relieved? Was this statement just "made up" years ago by management?

There are a variety of authorities for the principle. Section 7106 of Title 5 of the United States Code authorizes any management official of any agency, in accordance with applicable laws, to take whatever actions may be necessary to carry out the agency mission during emergencies.

The Comptroller General, in published decisions 22 Comp. Gen. 762 and 44 Comp. Gen. 274, has affirmed management's right to schedule or order an employee to work overtime. Thus, your supervisor may direct you to remain on duty until properly relieved. A "standing" directive may be issued by the supervisor for all future occurrences of this nature.

FAA Order 3550.10, Para. 52, permits retroactive approval of overtime work where operational emergencies or compelling reasons make it impractical to obtain prior approval.

turbulence-hold rule for a Category I or II intersection departure behind a preceding non-heavy Category III arrival, as well as preceding departure.

In reading these paragraphs closely, however, it's come to our attention that the rule only applies to a departure following a departure. Could we have a clarification on the intent of these paragraphs and the reasoning involved?

FAA Handbook 7110.65C, Paras. 1113a and 1114 are based on minimizing the effect of wake turbulence on aircraft. Proven characteristics of wake turbulence show that the wake begins when an aircraft rotates on takeoff and ends when the aircraft touches down on landing. In addition, the larger amounts of thrust and speed during takeoff create more turbulence than with an aircraft that has landed and is maneuvering to clear the runway. Because the wake begins at rotation and is larger with a departing aircraft, the smaller Category I and II aircraft are given extra protection behind non-heavy Category III departures.

As a good operating technique, however, it might be appropriate to provide smaller aircraft with cautionary information if they are departing behind a non-heavy Category III arrival—reference Handbook 7110.56C, Para. 911.

The controllers at our facility have an ongoing discussion about the application of Paras. 1113a and 1114 from Handbook 7110.65C. We commonly apply the three-minute wake-

**By Carol D.
Branaman**

A journeyman controller at the Arapahoe County Airport ATCT, she formerly worked in DOT's Congressional Liaison Office in Washington.



The Way To Go!

Airport's Development a Model of Planning

I had only been away for three weeks, after all. Surprises were not on my list of possibilities when I plugged into local control at Arapahoe County Airport, Colorado, even though I was working at one of the fastest growing airports in the country. In fact, ground will be broken around September for a new 130-foot air traffic control tower slated to be commissioned next June.

But—three weeks? When the inevitable pilot report came through about a couple of coyotes ambling across the runway, I picked up the binoculars to follow their progress. The critters were just then sneaking behind a big, awkward structure that obliterated what used to be a great view of the prairie. It was another hangar that had sprung up—one of six or eight new to Arapahoe in the past year.

Still, the rabbits I chase from under my car seem to belie the fact that Arapahoe, dedicated in 1973, is already the fourth busiest general aviation airport and the fastest growing of its type in the country. But it is precisely because Arapahoe was conceived and continues to grow in harmony with its surroundings that it is so successful. It is a unique model



for accelerated development and has been carefully charted from its inception.

Initial planning began in 1964 by George M. Wallace. Not much of anything was here at that time, save the vision of Wallace. He had the foresight to realize that Stapleton International Airport would need a reliever and that corporate development in southeast Denver would boom with the proper catalyst.

Arapahoe was designed to accomplish these goals, and it has done so in spades! For example, 300 aircraft were based here five years ago, compared to over 1,000 today, including 125 jets. In 1973, Arapahoe saw 150,000 operations; today, despite the recent business downturn, it's 380,000 and climbing.

An artist's conception of the airport hub around a new 130-foot ATCT.

The interesting and uncharacteristic thing is that the growth has seemed to creep in on cat's paws. Planning has paid off. As far back as 1974, both Douglas and Arapahoe counties undertook joint planning efforts to control land use in the "airport influence area." Both counties have since followed the planning recommendations on development. Moreover, proposed development on the airport requires a compatibility review prior to construction approval.

In addition, airport manager Bill Fitzgerald and tower manager Noel Keane have established an informal and effective liaison with the surrounding business and residential community. As a result, noise abatement procedures have been established, and an open forum exists wherein grievances and misunderstandings do not escalate. Communi-

cation forestalls down-the-way roadblocks.

As for the future: A study of the character and rate of development has been projected through the year 2000. The forecast for the growth of the airport and surrounding area is for six times as many offices and four times as many homes.

Now, a major commercial business park lies to the west of the field, and two more are under development. To the east, 35 hangar sites will be available, and the airport's taxiways will

extend to them . . . and to a proposed 18-hole golf course. For those who would rather face south or west, there are two 18-hole golf courses in those business parks as well.

In keeping with the current and projected growth, a new prototype automated flight service station was dedicated on April 10. Manager Wayne Brimmer says his 57 people are delighted with their 10,000 square feet of a clean, bright and cheerful work environment. However, when he sited the station at the airport, his office was intended to have a clear view of Pike's Peak, Mount Evans and Longs Peak. Now, all he sees out his window are hangars, such is the phenomenal growth of the airport.



Opened this spring, one of the agency's 61 automated flight service stations graces the Arapahoe Airport.



Arapahoe County Airport looking north.

The statistic of greatest interest to controllers is a projected traffic count in 1990 of 620,000. The airport planners are trying to help us out with an expansion plan that includes land acquisition for a parallel east-west runway and the lengthening of the north-south parallel runways to 7,000 and 10,000 feet from 5,000 and 8,500 feet, respectively.

That sounds great to us, but what we really want are a tennis court, putting green and a swimming pool, plus a new tower. As the expenses of operation have been offset by growing revenues, the airport has agreed to that last item on the wish list.

Our new 130-foot-high home, for which our total staffing may rise from 21 to 25 people, will represent a unique symbiotic relationship: The tower's base building—which may



The existing Combs-Gates terminal.

end up anywhere from 10,000 to 30,000 square feet in area—will house the administrative complex of the airport authority in addition to the tower offices and may even include FAA offices from elsewhere. The tower also will serve an adjacent airpark whose taxiways will interconnect with those of the airport.

And that's the crux of the success story. Everyone has a piece of the pie: longer runways for corporate aircraft and service for the airpark, increased revenues and an expanding economy as a result of easy access and convenience for business jets, noise abatement for the residential community and even enough territory for the coyotes and rabbits.

But I still think we ought to get that swimming pool. ■

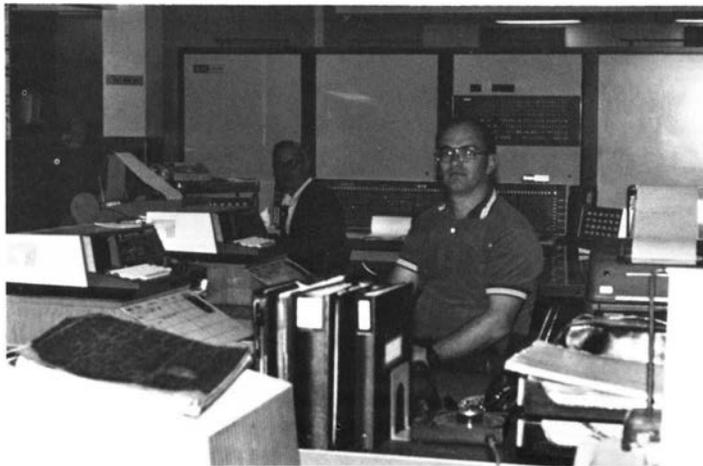
The Communications Hub



Electronics technicians Guy Papetti (left) and Paul Minor check the operation of a printer at the NATCOM.



Charles Henss operates the new Consolidated NOTAM System.



Jim Branham (rear) and Harold Dorsey operate terminals in NATCOM's Weather Message Switching Center.

The center of things is in the center of the country. The National Communication Center (NATCOM) in Kansas City, Mo., is the FAA's communication link among all flight service stations, air route traffic control centers, the National Flight Data Center, the National Weather Service, the military, commercial airlines and many other government and private sector subscribers.

Staffed by 116 Air Traffic and Airway Facilities personnel, NATCOM provides collection and distribution for four existing FAA systems and one still under development:

NASNET, for National Airspace System Network, is an FAA internal two-circuit system used to communicate software program changes and administrative messages between en route center computers, ARTS III computers, Washington headquarters, the Technical Center and regional offices.

NATCOM



Ruth Thompson is a general supply specialist for the center.

BDIS, the Service B Data Interchange System, is a 55-circuit domestic system used by the FAA for the collection and distribution of VFR/IFR flight plans and FAA administrative messages.

AFTN, for Aeronautical Fixed Telecommunications Network, is a 135-circuit international system used as part of the ICAO network for collection and dissemination of international IFR flight plans, NOTAMs and international weather data.

WMSC, the Weather Message Switching Center, is a 350-circuit domestic system used to collect and disseminate domestic NOTAMs and Service A, C and O weather data within the 50 states.

CNS is a new IBM computerized Consolidated NOTAM System that will assume the function of the domestic and international master files that are now in the AFTN and WMSC systems. ■



The manager and assistant manager, respectively, of the NATCOM Airway Facilities Sector are Marion Strickland (left) and Warren Robertson.



Tom Donovan and Kim Klotz (foreground) work the edit and off-line positions of the AFTN international system.



Sitting in front of the BDIS printers is operator Franzis Smith.



Responsible for the comfort of the people and machines are environmental technicians Roger Morris (left) and Richard Anfield.



A McDonnell-Douglas DC-8 Series 70 with advanced technology CFM56 turbofan engines set a long-distance, non-stop record this spring, flying 8,215 miles from

Cairo, Egypt, to Los Angeles in 15 hours and 46 minutes against prevailing winds at 41-42,000 feet. It had 1 1/2 hours of reserve fuel. CAMMACORP, owners of the plane

and program managers for DC-8 reengining, conducted the flight to show the engines' fuel efficiency and noise reduction 30 percent below FAA rules.

Photo by CAMMACORP

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