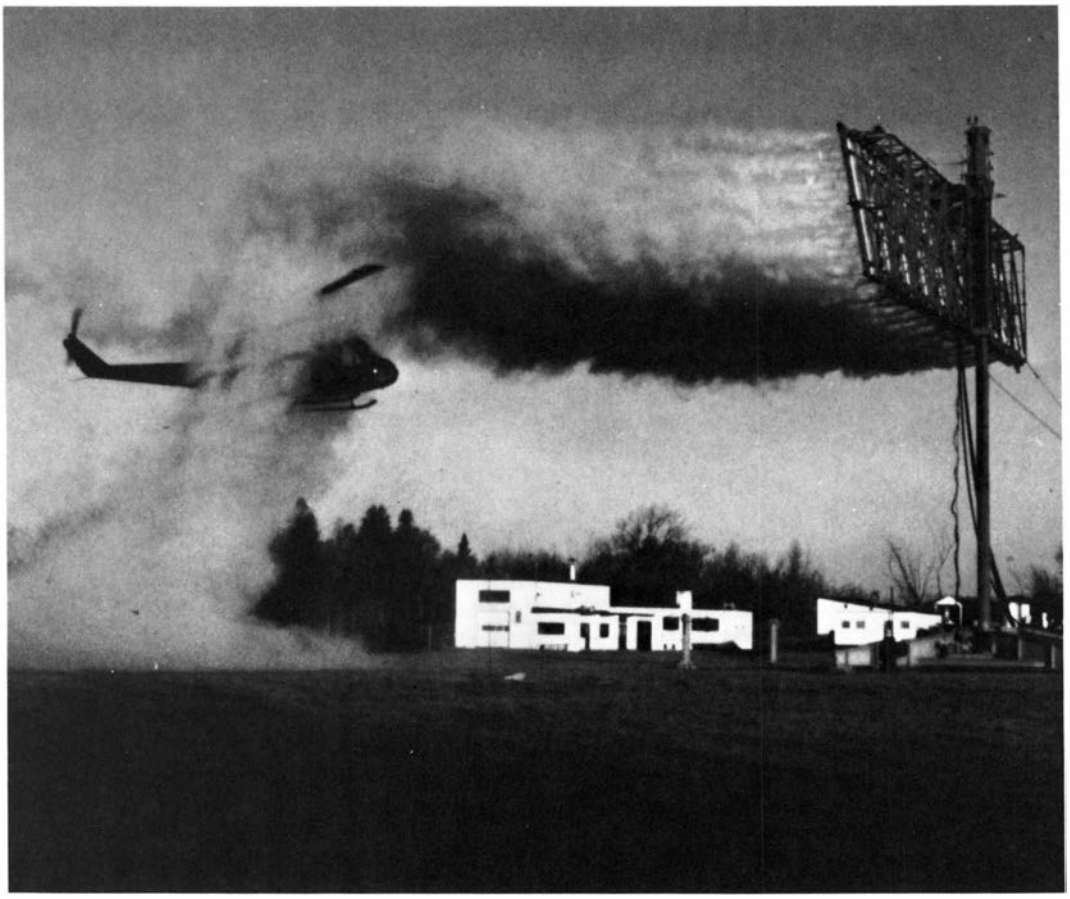
World

July 1980
Volume 10 Number 7

U.S. Department
of Transportation

**Federal Aviation
Administration**



Research Highlights

As the first helicopter seeks certification to fly under limited icing conditions, FAA Technical Center Director Joseph Del Balzo sees "others waiting in the wings." As a result, the Technical Center is taking a leading role in a cooperative effort with the Department of Defense and the National Aeronautics and Space Administration to develop an icing test complex.

Conferences and investigation have shown that such a facility will have to include an icing tunnel and chambers, ground-based and airborne simulation capabilities, analytical prediction models and, possibily, a new, airborne rotary-wing research vehicle.

Program manager Richard Adams, who is also a consultant to the Eastern Region's certification team for the Boeing Vertol 234 helicopter, has been checking on the U.S. Army's tests of the Vertol CH-47D, the counterpart of the 234, in St. Paul, Minn., and their improved Helicopter Icing Spray System (HISS), for which the Technical Center has funded research.

He's also looked at the Army's specially equipped JUH-1H chopper being used to test ice-phobic coatings and which has an electrothermal ice-protection system in its rotors and at the Canadian Government's Ottawa Spray Rig (photo above) used to test ice-repellent coatings on a UH-1 helicopter. ■

The Cover: **The May 18 explosion of Mt. St. Helens leveled everything for 15 miles around. Here, an entire forest was lost.**

Photo by Judith Calson, *San Francisco Examiner*

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J.M. PERRY INSTITUTE
2011 W. WASH.
WAIT TIL DARK
PLAYING HERE
OPENING MAY 8
STOP

By John Wichels, Jr.
Chief of the Northwest Region's Airway Facilities Division, he joined the agency in 1950 as an electronics technician in Nome, Alaska.

Chronicle of a Cataclysm

Good Planning and Quick Action Keeps FAA on the Air

May 20, Seattle, Wash.
''Mount St. Helens in the Cascade Range, 9,677 feet high, 45 miles north of Portland, 100 miles south of Seattle, 33 miles east of Interstate 5 at Kelso, Wash., volcanically dormant since 1857, began venting steam and ash on March 27, and blew off its top at 20 minutes to nine this past Sunday morning.

''As of yesterday, the mountain's summit is now 8,300 feet high, or about 1,400 feet lower than is still shown on the maps and charts.

''The explosive shock wave leveled very tree, or anything else standing, north of the mountain for a radius of 10 to 15 miles. For the benefit of the Washington people, the effects would be the same if everything from the Washington headquarters building 15 miles west to Fairfax or Vienna had been literally leveled to the ground.''

With that, Jack Wichels, chief, Airway Facilities Division, Northwest Region, began a series of reports to Washington headquarters on the effects on FAA facilities of the May 18 eruption of Mount St. Helens.

Over the next several days, Wichels, along with virtually everyone else in the region, would be caught up in the aftermath of that stupendous explosion—500 times greater than the force of the atomic blast at Hiroshima—which blew a cloud of pulverized rock 12 miles into the atmosphere and literally changed the face of the landscape for miles around.

Awesome and humbling was the way one FAA employee from the region described the widespread devastation.

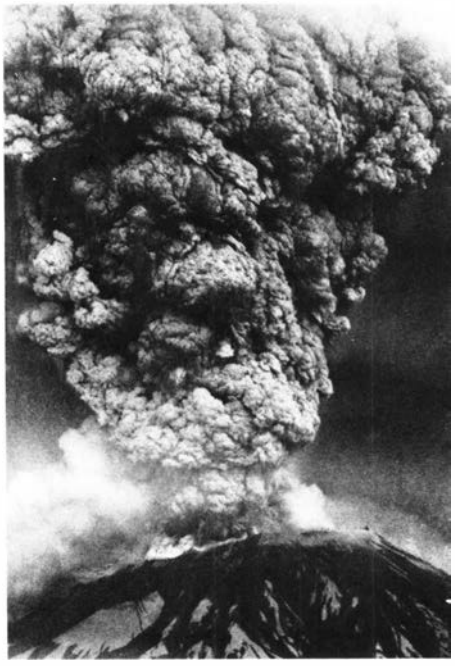
As the cloud of volcanic ash moved across country, countless personnel, from meteorologists at the Systems Command Center in Washington to air traffic controllers and flight service specialists throughout the system, would be involved in tracking the cloud, informing pilots of its whereabouts and advising them what to do if they contacted it.

But, the Northwest Region was most immediately affected by the eruption, which closed airports, highways and in some cases shut down whole cities throughout the three-state region and beyond. Since Jack Wichels' job was to keep track of FAA facilities and make sure they continued to operate, he had a unique perspective on the effects of Mount St. Helens. We, therefore, pick up his report of May 20:

''No FAA facilities to the north, west, and south of Mt. St. Helens have been damaged, nor are any of these in any danger at the moment.

''The FAA has set up a mobile air traffic control tower at Kelso, Wash., to control the military helicopter traffic going into the area around the mountain on search and rescue or reconnaissance missions.

''On a map, if you connect the cities of Wenatchee, Ellensburg, and Yakima on the west, and Spokane and Pullman on the east, you have an area where everything has come to almost a complete halt in any activity whatsoever because of half an inch or more of volcanic ash. Trains aren't running. . . . The airports in this area are closed. . . . And the Washington state patrol has either closed all highways in this area or severely restricted highway travel because of low visibility from blowing ash.



. . and darkness came at noon Sunday as volcanic ash clouds swirled around the Yakima, Wash., control tower.

Photo courtesy of *Yakima Herald Republic*

''This ash is extremely fine . . . resembling powdered sugar or talcum powder in consistency . . . grayish in color . . . and is really nothing more than real fine carborundum or pumice. From a health standpoint, people who do venture outside their homes are warned to wear breathing masks to avoid throat and lung irritation. . . . Even makeshift breathing masks made from coffee pot filters and rubber bands will help.

''We in Airway Facilities here have taken the following precautions with the

emphasis on protecting engine generators or mechanically rotating machinery. We have locked out all the standby engine generators where they are readily accessible. We are shutting down wherever possible all non-essential blowers, fans and air conditioning systems that draw from the outside air. And we have told the sectors to check and clean the air filters regularly. Before restarting any of this equipment, we've told them to clean it well with vacuum cleaners, compressed air or other techniques.

"All travelers, including FAA personnel going to and from duty, are being stopped by the Washington State Highway Patrol, but FAA people are generally permitted to pass when they show their FAA ID card and give the patrolman some story about having to keep the aviation facilities on the air.

"We have experienced no equipment failures or outages whatsoever because of the ash fallout thus far, except for a direct lightning strike on the Moses Lake compass locator late Sunday afternoon. This facility was restored using the tube-type equipment that had recently been replaced, but was still in storage at the sector.

"The big problem with the ash in eastern and central Washington is how to get rid of it from airport runways. Thus far, efforts at sweeping or blowing or plowing the ash from runways seems merely to get the ash airborne, and it eventually settles back on the runway. All of the airports in the area still remain closed because of the ash-on-the-runway problem."

A force of 24 helicopters was based at the Toledo, Wash., Airport to provide search and rescue service. A water truck wets down the ash-covered field to prevent blowing from helicopter rotors.

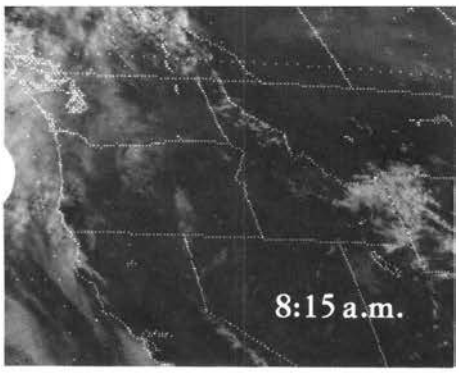
May 21

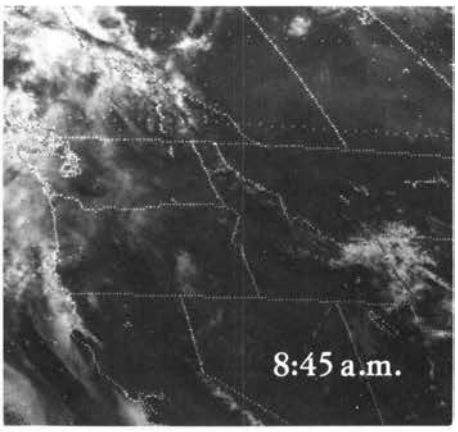
. . . "Our big potential danger from the mountain right now—barring any additional major eruption—is from a potentially catastrophic mud or water flow down the Toutle River. According to reports last night, there is a mud and ash dam some 20 stories high, which is causing water in what used to be Spirit Lake to back up behind this eruption-caused dam.

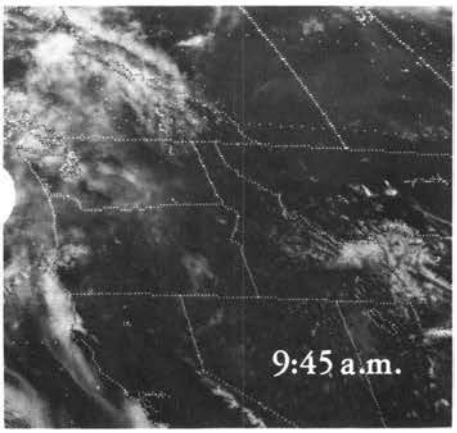
"Because of this potential flood, the mobile ATCT was moved last night from Kelso to Toledo, Wash., where we have an FSS and where I understand the military Search and Rescue operations are being moved. The Toledo Airport is well out of the potential flooding and danger zone. . . .

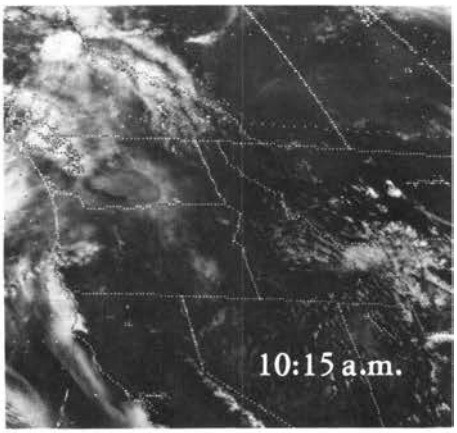
"In the Pasco AF Sector, the State Highway Patrol still has severe restrictions on highway travel because of heavy ash clouds that result anytime a vehicle

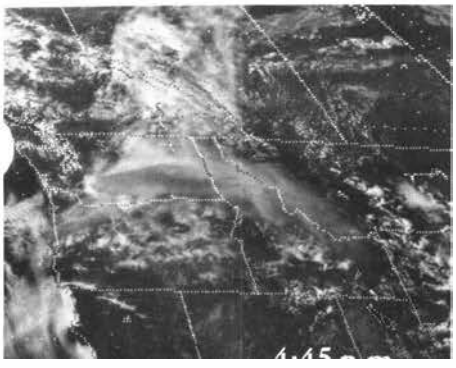
A volunteer fireman hoses off corrosive ash from the communications antennas atop the mobile control tower at the Toledo, Wash., Airport.











National Weather Service satellite photos show a normal pattern at 8:15 on Sunday morning, May 18; then, at 8:45, a dark blotch appears southeast of Puget Sound as Mt. St. Helens explodes. It grows larger through the day. By late afternoon, the ash cloud covers eastern Washington, northern Idaho and western Montana.

moves on a street or road.

''At Grant County Airport in Moses Lake, the ash depth averages about four inches on the runways. The instrument runway there is covered with 50,000 cubic yards of ash—a lot of ash to move when you don't know where to put it! A typical dump truck holds 4 to 5 cubic yards of dirt. I understand they've tried to remove some of the ash at Moses Lake, but gave up in frustration yesterday!

''At Yakima, they now have about one inch of ash still on the airport runways and are trying to clean this off the best they can with snowplows and graders. They think it will still be into this coming weekend before that airport is open, meaning ''safe enough to get a jet in and out of there without damage.

''Based on the information the sector field office chiefs give us from this area, we are relaxing to a certain extent our instructions to lock out the standby engine generators, particularly at en route aids such as high-altitude VORTACs and RCAGs. The sector manager over there feels that if the wind is calm so that this ash is not blowing around in the air, the standby engine generators are okay to run, if necessary. In addition, they will wet down the immediate area around the VORTAC and RCAG engine generator air intakes, ports and vents, to help keep the dust and ash down.

''I didn't mention it yesterday, but we are concerned to some extent about the Radar Microwave Link (RML) system for Mica Peak to the Seattle Center, which generally parallels Interstate 90 through the ash-affected area. Our concern stems more from the fact that we have not been able to get to some of these RML repeaters yet, even to inspect for possible damage. So far, we have not experienced any outages of the RML repeaters nor any other facility (except for the lightning strike at Moses Lake on Sunday).

''At the Fairchild RAPCON, the sector field office (SFO) chief did turn the airport surveillance radar (ASR-5) antenna off yesterday, not because there was any damage to the rotary joint but because Air Traffic there had no airplanes to control.

''We do have AF technicians stationed at Wallace, Ida., who maintain the Mullan Pass VORTAC. They were able to make one trip to Mullan Pass two days ago on Monday, but coming back down the access road from the mountaintop VORTAC, the visibility was so bad because of blowing ash on the road that their vehicle went off the road in a couple of spots, although no damage was done.''

May 22

''If this ash and mud dam lets go in the next few days, or while the water level behind this dam is still high, the resulting mud flow or flooding could very well take out the twin Interstate bridges, as well as the main Seattle-Portland Burlington Northern Railroad bridge, where these bridges cross the Toutle River. If these In-

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Volcano: Government at Its Uncelebrated Best

At 8:37 last Sunday morning in Seattle, 120 miles from Mount St. Helens in the Cascade Range, a federal bureaucrat was jolted by a sudden ominous sound. As he reported to his headquarters in Washington:

"In case you're interested in what an exploding mountaintop sounds like from about 120 miles away, it's exactly like a strong sonic boom. From that distance, no prior warning nor following rumbles—just a good solid sonic boom. No lava flows have appeared yet. The damage in the immediate vicinity of the mountain was due to heavy mud flows and high-temperature gases in the explosive shock wave which leveled every tree, or anything else standing, north of the mountain for a radius of 10 to 15 miles. For the benefit of the Washington office people, the effects would be the same if everything from the Washington headquarters building 15 miles west to Fairfax or Vienna had been literally leveled to the ground."

Not long after that, an Air West DC-9, enroute from San Francisco to Calgary, Canada, and flying at 31,000 feet, unwittingly moved directly into the cloud of volcanic ash rising into the heavens. The plane was in the cloud only four minutes before the pilot made an abrupt 180-degree turn and headed for an emergency landing in Phoenix, Ariz. But those few minutes were traumatic.

Once on the ground, the pilot reported the plane's extensive damage. His windshield was heavily pitted, the leading edges of the wings were sandblasted, the engine oil was contaminated, the engine compressor blades received significant abrasive action, and all the air conditioning system filters had been impaired enough to require replacement.

That was the first known incident of what happened when an airplane encountered the effects of the Mount St. Helens eruption, a volcano that had been dormant since 1857. Soon that information was being dispatched by the government throughout the country with a warning that all planes avoid the cloud of ash. "The significant damage to that flight was an important part of the data we had to pass on to airlines," a Federal Aviation Administration official recalled in Washington. "There are many channels of communications. We wanted to hit them all. We hit them all. Our concerns were that we capture every aircraft in the system interested in flying, in addition to pilots coming to flight services to get their normal briefings. We wanted to make sure they were aware of the damage to that flight and other information we were able to pass on and alert them."

In recent years, and particularly in recent days, many Americans have come to believe that nothing works, especially the government. Foulups and failures are almost expected. Yet what we've seen this last week—or have failed to see—in the extraordinary aftermath of the natural disaster in the West, is an example of the government performing spendidly, quietly, competently, and efficiently. The way the Federal Aviation Administration handled the threat to aircraft provides a case study of government at its uncelebrated best. For this crisis at least, the government was well prepared and reacted promptly.

As soon as the volcano began stirring in March, an emergency crisis team was put together. Contingency plans were adopted in the event of a volcanic eruption. Experience gained from similar disasters were studied—what happened to aircraft when volcanoes erupted in Alaska, Japan and Italy. Prevailing wind patterns were examined, and predictions made of where the ash would go if the mountain blew. These proved to be correct.

What the government couldn't foresee was the magnitude of the explosion or the damage wrought. As one official said, "We never had anything like this before."

Once the volcano erupted, the emergency plans were put into effect. Flights around the volcano already had been banned, and now the extensive monitoring of all information began. From the FAA's command center on Independence Avenue, telephone conference calls were conducted with stations around the country and overseas. Meteorologists studied satellite photographs of the ash cloud. Reports from pilots around the country were passed on. ("I'm getting a smell of sulfuric acid," a pilot said over Pittsburgh. "But then again I get that over Pittsburgh most of the time.") A federal radioactivity task force, used to monitor such things as atomic tests in the past and the nuclear accident at Three Mile Island, was reinstituted. Special aircraft, including U2s, flew into the cloud to collect samples.

Government scientists found the ash contained both abrasive and corrosive materials such as sulfuric acid and fluoride and chloride salts and acids. Depending on the location of the volcanic ash fallout, the particle sizes ranged from as small as 5 microns to as large as 100 microns. Most aircraft filters screen out material as small as 15 microns. But tinier particles pass through the filters and cause damage.

With the report of damage to the Air West flight and other potential hazards, the FAA wrestled with whether to ground all flights. Some bureaucrats worried lest reports of aircraft damage from ash be played up sensationally in the press. "I could just see the headline, 'Killer Cloud Girdles Globe,' setting off a panic," one of them said.

Grounding all planes was not necessary. Aircraft could avoid the cloud by flying above, below or around it. But maintenance problems remain. Now the FAA has issued special instructions to all aircraft owners, and all airlines, on procedures to take for any plane exposed to the ash. The cost of maintenance is going to be extremely high—and essential. Monitoring of the situation continues throughout the country.

This story is not over. The long-term impact to both equipment and people remains unknown. And another explosion of similar magnitude could still occur at Mount St. Helens. But for citizens there are lessons, and for once some comfort. "I don't think we've done anything unusual," an FAA official said. "You have to have systems that will deal with things like this. And this shows us the system works very well."

Which is not what many of us had thought. ■

By Haynes Johnson

A 1966 Pulitzer Prize winner, he spent more than 20 years with *The Washington Star* before joining *The Washington Post* in 1969.

Continued from page 7

terstate 5 bridges are washed out, this would require about a 200-mile detour by way of Astoria and U.S. 101 along the coast back into Interstate 5 at Chehalis.

"After the mud flow from Mt. St. Helens hit the Columbia River the other day, newspaper reports estimate the depth of this channel is now only 10 to 15 feet, compared to its normal 40-foot depth. They estimate about ten million cubic yards of mud has been deposited in the Columbia River at this point. This amount of mud, roughly converted to something more conceivable, would make up a cube about 65 stories high and 650 feet along the horizonal sides. No matter how you slice that, that's an awful lot of mud to have to dredge out of the Columbia River!

"Photographs of the devastated area north of Mt. St. Helens show utter devastation for about 15 miles out from the mountain! While I haven't yet seen a figure on the density of this ash which fell on Central Washington, if you figure about 100 pounds per cubic foot as being a typical figure for heavy dirt, the 50,000 cubic yards of ash I mentioned yesterday on the instrument runway at Moses Lake would figure out to be about 75,000 *tons*! (Just so I can have a better feel of the density of this stuff for my own amazement, I'm asking the Pasco and Spokane sector managers if they will have somebody go out with a bucket and weigh this stuff!)

"The only unusual thing Spokane has noticed in the last 24 hours, particularly since the rain has fallen, is that there is an unusually high number of short commercial power failures. The sector says that they do not yet know the specific cause of these power failures, but it could be either from the power company shutting down this or that substation to blow the ash off insulators or it could be from the ash getting wet from the rain and shorting out insulators. On Spokane International Airport itself, they had between 10 and 20 momentary power failures just this morning.

What the well-dressed bride and groom are wearing this season! The former Gloria Lane and Tim Cravens of Yakima, Wash., weren't traveling to their honeymoon incognito but were trying to avoid breathing Mount St. Helens' volcanic ash.

UPI photo

"Other than that and the fact that Air Force One with President Carter is due to arrive at Spokane in the next hour or so from Portland, the Spokane Sector reports that they are almost back to normal operation again."

May 23

"Since things seem to be settling down after last Sunday's eruption, here are a few bits of 'volcanian trivia' I've picked up from various local TV or newspaper coverage.

"If last Sunday's Mt. St. Helens eruption is compared with past major eruptions, Mt. St. Helens may be a piker.

"The local geologists have estimated that the amount of solid material ejected from Mt. St. Helens last Sunday was about three cubic kilometers. This would include the ash thrown up into the sky and the ejected mud and other debris which stayed on the ground. One cubic kilometer is about one quarter of a cubic mile.

"Some volcano expert quoted on TV last night said that at least three other volcanic eruptions each ejected over 10 times as much material: Mt. Mazama, which formed what is now Crater Lake, Oregon, about 7,000 years ago, is estimated to have ejected 40 cubic kilometers of debris; when the island of Krakatoa blew up in the Sunda Strait West of Java in Indonesia in 1883, and when Mt. Tambora on the island of Sumbawa in Indonesia erupted in 1815, each of these is

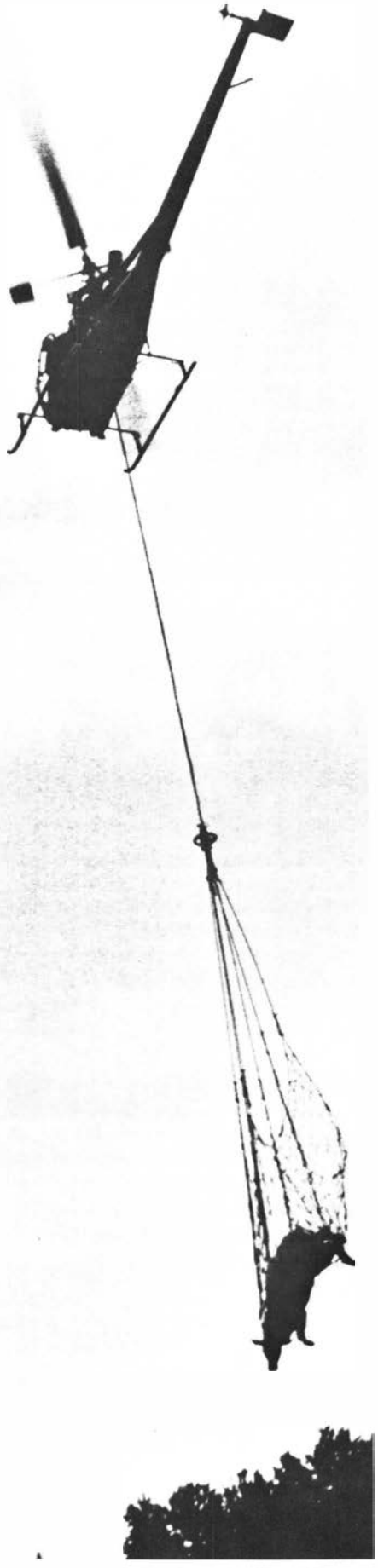
estimated to have ejected between 30 and 40 cubic kilometers of stuff.

"Another bit of trivia is that there are volcanos, such as Kileaua in Hawaii, that bubble or spew molten lava when they erupt but very little ash is sent into the stratosphere. On the other hand, the volcanoes in Alaska, Washington and Oregon are the type that erupt with significant amounts of ash thrown into the sky, but very little lava comes forth. And just think—you didn't even have to ask me for this information!

"Back to the more immediate and local concerns, however. The local geologists have studied the mud and ash dam formed at the base of Mt. St. Helens, and they say it is appearing to stabilize. They do not feel the risk of this mud and ash dam collapsing is very likely now that they've had a chance to look at it more closely. I hope they know what they're talking about!

"Some personnel at Spokane, particularly those susceptible to respiratory problems, are experiencing breathing problems because of the ash, and we are letting some of them go home on either annual or sick leave. The emergency organizations in Spokane are still encouraging the continuous use of breathing masks, as a general rule, whenever people go outside of buildings.

"Localized inflation—sometimes called 'all the traffic will bear!'—appears to have struck breathing mask and air filter retail prices. Where some of these breathing masks could have been purchased a few weeks ago in drug stores for about 35 or 40 cents a piece, the price these days runs about a dollar each. The price of carburetor air filters for automobiles has tripled in some stores, going from $5 to $15 a piece—when you can find any available!



"Don Dotson, the SFO chief at Moses Lake, lives in Ephrata some 20 miles away across the open prairie. Dotson said yesterday that when he drove home, the wind was blowing so hard he found himself in a white-out, and he pulled over to what he thought was the side of the road and stopped until visibility improved. When the visibility picked up, Dotson said he found himself in the center of the road!

"Moses Lake had also been requested yesterday to wet down or clear a sufficient area on the airport for the possibility of President Carter coming by helicopter into Moses Lake, but that idea went out the window yesterday when the wind picked up and white-out conditions reoccurred.

"In response to my request yesterday, the folks in the ash-affected area of the Pasco Sector made some weight measurements on the ash. They used a two-gallon bucket, which by itself weighed half a pound. Filled with water, this bucket weighed 20.5 pounds; filled with dry ash, the bucket weighed 25.5 pounds. With this ash sample, the density would be 1.25, and a cubic foot of the stuff would weigh about 80 pounds. Because the heavier ash would probably fall closer to the mountain, and the lighter ash would fall further away from the mountain, it may well be that the ash density would be greater closer to Mt. St. Helens and less

A bull is rescued from a ranch inundated by mud from the Toutle River caused by the Mt. St. Helens eruption. UPI photo

over toward Spokane, for example.

''We have received a laboratory report of the chemical analysis of the volcanic ash that fell on eastern Washington. It appears to be chemically neutral without any sulphur content, with the ash being composed mainly of silicon, calcium, and iron.''

May 26

''When I left the office last Friday afternoon, I commented to the other folks, 'Let's have a real calm, uneventful, dull boring and completely ho-hum weekend this time . . . not like last weekend!' Well, that didn't quite happen!

''About 2:40 a.m., Sunday, May 25, Mt. St. Helens again lost its cool, this time sending ash over most of western Washington State and parts of northwestern Oregon. For a change, central and eastern Washington State were spared. Although the ash rose to some 40,000 feet this time, this weekend's eruption was not as devastating as that of a week ago.

''FAA facilities were ''hit'' this time to some degree. The mobile tower located at Toledo, Wash., was abandoned, as was the helicopter search-and-rescue command center there, because of an inch or two of ashfall. More significantly, the Mt. Brynion RML repeater—on the dual RML system from Keno and Laurel Mountain (Salem) long-range radars (ARSRs)---went automatically on standby engine-generator, having lost commercial power yesterday morning. Even as late as this morning, the technicians from the Olympia Sector were unable to get as far as Mt. Brynion to check out the repeater because of ash clouds on Interstate 5.

''Incidentally, I've failed to mention one special Facilities & Equipment action we took about three weeks ago. When Air Traffic set up its special restricted airspace around the mountain a month ago, they requested a discrete RCAG (air-ground) channel which would be well out of any eruption area. It would provide the needed coverage and be connected to the Seattle ARTCC. Over the weekend of May 3-4, we put this channel atop Larch Mountain near Olympia in the existing RCAG there. It's been working out fine. This is the type of thing that, if the mountain had never erupted, we could have been criticized for wasting overtime money and a few other things; as it turned out, we obviously exhibited highly intelligent and precognitive planning!

''A little more volcano trivia. To us folks out here not geologically inclined, that Mt. St. Helens would be the dormant Cascade volcano to blow its top came as a surprise. For the past year or so, off and on, it has been Mt. Baker (10,778 feet MSL, 80 miles north of Seattle and 30 miles east of Bellingham, Wash.) that has sporadically puffed steam and made earth-groaning noises. Mt. St. Helens has merely sat there quietly, posing for picture postcards . . . until two months ago.

''Of course, for those who want to play 'What if. . .?', most of the major peaks and mountains in the Cascade Range—which reaches from Mt. Baker near the Canadian Border down into northern California at Mt. Lassen (50 miles east of Redding, which erupted in 1915)---are all volcanic in origin. This would include Mt. Rainier, Mt. Adams, Mt. Hood and, of course, Mt. Shasta.

''The geologists say one major factor in last week's Mt. St. Helens eruption that caused the completely devastated area north of the mountain was that the cone inside the mountain which ''aimed'' the eruptive force was not vertical, but instead was tilted towards the horizontal to the north at about a 45-degree angle or so, causing a tremendous horizontal component of force and energy.''

Mount St. Helens blew again on June 12, its third major eruption in less than a month. Nobody, including volcanologists and geologists who have been keeping a close eye on the mountain, will predict what it will do next, but some of them expect intermittent activity from it for many months, if not years.

Wichels admits that ''waiting around to see what it will do next'' is somewhat difficult, but he says the region is well prepared.

''Besides,'' he says, ''it's no more difficult out there than it is in the Southern or Central Regions where they have to worry about hurricanes and tornadoes.'' ■

People

Aeronautical Center

■ **Theodore T. Higa,** supervisory electronics technician, Office of Flight Operations, Flight Standards National Field Office.

Alaskan Region

■ **Verne B. Braman,** proficiency development and evaluation officer, Juneau Airway Facilities Sector, from the Anchorage Sector.
■ **Deborah A. Foster,** supervisory electronics technician, Maintenance Project Section, Maintenance Operations Branch, Airway Facilities Division.
■ **James R. Free,** team supervisor, Anchorage ARTCC.
■ **Orah F. Howard,** chief of the Dillingham Flight Service Station, from the Anchorage FSS/IFSS.
■ **Dennis J. Marth,** chief of the Engineering Branch, Airway Facilities Division, from the Headquarters Management Engineering Branch.

Central Region

■ **John F. Keuhn,** chief of the Burlington, Iowa, Flight Service Station, from the Chadron, Neb., FSS
■ **Clifford C. Kurth,** chief of the Omaha, Neb., Airway Facilities Sector Field Office, from the Grand Island, Neb., Sector.
■ **Willie R. Moore,** team supervisor at the St. Louis Tower.
■ **Gene T. Schumacher,** chief of the North Platte, Neb., AF Sector Field Office.
■ **William F. Stringfield,** chief of the Salina, Kan., FSS, from the Burlington FSS.
■ **Robert A. Supplee,** team supervisor at the Cedar Rapids, Iowa, Tower, from the FAA Academy.
■ **Daniel E. Williams,** assistant chief at the St. Louis Tower.

Eastern Region

■ **Raymond P. Butkiewicz,** team supervisor at the Philadelphia Tower, from the Buffalo, N.Y., Tower.
■ **John T. Koch, Jr.,** chief of the Middletown, Pa., Airway Facilities Sector Field Office.
■ **Rudolph V. Meyer, Jr.,** team supervisor at the Washington Flight Service Station, from the Teterboro, N.J., FSS.
■ **Arnold J. Palumbo,** team supervisor at the Islip, N.Y., Tower, from the LaGuardia Tower, Flushing, N.Y.

Great Lakes Region

■ **Timothy G. Bailey,** team supervisor at the Crystal Airport Tower, Minneapolis, Minn.
■ **James R. Callahan,** assistant chief at the General Mitchell Field Tower, Milwaukee, Wis.
■ **Martin T. Husar,** team supervisor at the Fort Wayne, Ind., Tower.
■ **Lawrence H. Kant,** assistant chief at General Mitchell Field Tower, Milwaukee.
■ **William W. Kribble, Jr.,** team supervisor at the Flint, Mich., Tower, from the Indianapolis, Ind., Tower.
■ **Vincent J. Langlois,** watch supervisor at the O'Hare Airway Facilities Sector, Chicago.
■ **Thomas J. Oelkers,** chief of the St. Paul, Minn., AF Sector Field Office.
■ **Leroy J. Reeve,** team supervisor at the South Bend, Ind., Tower, from the Champaign, Ill., Tower.
■ **Phillip M. Reichart,** assistant chief at the General Mitchell Field Tower in Milwaukee.
■ **Arnold W. Torguson,** assistant systems engineer at the Minneapolis ARTCC Airway Facilities Sector.
■ **Ronald E. Wise,** team supervisor at the Columbus Ohio State University Tower, from the Port Columbus, Ohio, Tower.

New England Region

■ **Armour W. Brown,** chief of the Houlton, Maine, Flight Service Station.
■ **Joseph A. Egan,** team supervisor at the Portland, Maine, Tower.
■ **Howard R. McGlauflin,** deputy chief at the Logan Tower, Boston, from the Bradley Tower, Windsor Locks, Conn.
■ **Robert E. Newton,** unit supervisor at the Burlington, Vt., Airway Facilities Sector.

Northwest Region

■ **Charles R. Bird,** team supervisor at the Everett, Wash., Tower.
■ **Larry W. Foster,** team supervisor at the Hillsboro, Ore., Tower, from the Portland, Ore., Tower.
■ **Thomas A. Lemmons,** chief of the Pendleton, Ore., Tower, from the Portland Tower.
■ **John W. Smith,** team supervisor at the Everett Tower.

Pacific-Asia Region

■ **Donald M. Best,** chief of the Southeast Asian International Field Office in Finegayan, Guam.
■ **William J. Coelho, Jr.,** team supervisor at the Kahului Tower in Maui, Hawaii.
■ **Roy T. Kuratani,** supervisor of the Electronics Engineering Section, Engineering & Establishment Branch, Airway Facilities Division.
■ **Leon Y. I. Lum,** assistant chief at the Honolulu ARTCC.
■ **Seijiro Matsuoka,** maintenance mechanic foreman in the Maui Airway Facilities Sector.
■ **Albert H. K. Nam,** chief of the Lihue Tower in Kauai, Hawaii, from the Honolulu Tower.

■ **Robert C. Woodruff,** assistant chief at the Guam CERAP (center/radar approach control) at Andersen AFB, from the Honolulu ARTCC.

Rocky Mountain Region

■ **Charles W. Cayce,** unit supervisor at the Pierre, S. D., Airway Facilities Sector, from the Kansas City Municipal Airport AF Sector Field Office.
■ **Walter E. Emmons,** team supervisor at the Billings, Mont., Flight Service Station.
■ **Michael L. Moss,** team supervisor at the Colorado Springs, Colo., Tower, from the enver Tower.
William M. Rhode, team supervisor at the Denver FSS.
■ **Michael L. Short,** team supervisor at the Casper, Wyo., Tower, from the FAA Academy.
■ **W. Harold Upton,** team supervisor at the Livingston, Mont., FSS, from the Great Falls, Mont., FSS.

Southern Region

■ **Charles T. Brion,** team supervisor at the Greenville, S. C., Downtown Tower.
■ **Earl F. Bryan,** team supervisor at the Jacksonville, Fla., Flight Service Station, from the St. Petersburg-Clearwater, Fla., FSS.
■ **Angel F. Cordero,** team supervisor at the San Juan, P.R., International Flight Service Station.
■ **Robert F. Curtis,** team supervisor at the Tampa, Fla., Tower, from the Atlanta Hartsfield Tower.
■ **Gerald B. Gordon,** team supervisor at the Sarasota, Fla., Tower, from the Pensacola. Fla., Tower.
■ **Curtis P. Hathaway,** chief of the Materiel Management Branch, Logistics Division, from the Services Branch of Logistics.
■ **Garrett D. Huskins,** watch supervisor at the Miami, Fla., Hub Airway Facilities Sector, from the San Juan CERAP Sector Field Office.
■ **Ralph F. Mason,** chief of the San Juan AF Sector, from the San Juan AF Sector Field Office.
■ **William F. Price, Jr.,** chief of the Greenville Downtown Tower, from the Gainesville, Fla., tower.
■ **Mortimer J. Sams,** assistant chief at the Atlanta FSS.
■ **Pete C. Signorelli,** team supervisor at the Panama City, Fla., Tower, from the Savannah, Ga., Tower.
■ **Stanley Zylowski,** team supervisor at the Miami, Fla., Tower, from the Memphis, Tenn., Tower.

Southwest Region

■ **Ramon D. Belshe,** chief of the Program & Planning Branch, Airway Facilities Division from the Electronic Engineering Branch.
■ **Dagoberto Cisneros, Jr.,** team supervisor at Truth Or Consequences, N.M., Flight Service Station, from the El Paso, Tex., FSS.
■ **Frank W. Johnson,** chief of the Electronic Engineering Branch, from the Maintenance Operations Branch, Airway Facilities Division.
■ **Charles D. Jones,** chief of the El Dorado, Ark., FSS, from the Shreveport, La., FSS.
■ **Martin C. Noteboom,** manager of the Fort Worth, Tex., ARTCC AF Sector, from the Program & Planning Branch, AF Division.
■ **Orlando E. Sanchez,** team supervisor at the Albuquerque, N.M., ARTCC.

Technical Center

■ **Caesar A. Caiafa,** chief of the Crashworthiness Branch, Aircraft Safety Development Division.
■ **Thomas J. Owen,** chief of the Supporting Services Branch, Logistics Services Division, from the Building Program Management Staff.
■ **Anita K. Tripp,** chief of the Management Analysis Branch, Management Services Division, from the Management Systems Division.

Western Region

■ **Jack V. Huffman,** chief of the Edwards AFB, Calif., RAPCON Airway Facilities Sector Field Office, from the Ridgecrest West Sector Field Office, Lancaster, Calif.
■ **John L. Manuszak,** team supervisor at the Fresno, Calif., Tower, from the San Diego TRACON.
■ **David Miles,** chief of the Oakland, Calif., AF Sector Field Office, from the Establishment Engineering Branch, AF Division.
■ **Gary D. Stinebaugh,** team supervisor at the Oakland, Calif. Tower, from the Las Vegas, Nev., Tower.
■ **Otis M. Tindell,** chief of the Ridgecrest West AF Sector Field Office, Lancaster, Calif., from the Edwards AFB RAPCON Sector Field Office.
■ **Charles J. Walker,** team supervisor at the Sacramento, Calif., Municipal Airport Tower, from the Las Vegas, Nev., Tower.

The writer retired from the Labor Department last fall after 25 years in federal service.

Three Views of Federal Annuities

Why Should Retirees Get More?

Pressures to balance the Federal budget are likely to be strong for years to come. Traditionally, much of the budget has been considered untouchable. These are the parts that grow automatically, such as pensions and social security, when the cost of living goes up.

Now, there is more and more talk in Washington of extending the budget squeeze to these areas as well. The most serious challenge thus far, now being debated in Congress, is the elimination of one of the two annual annuity cost-of-living increases.

FAA retirees and potential retirees may be interested in reading this guest column from the *Washington Post* by a Labor Department retiree and the responses it drew from readers of the *Post:*

It's that time of year again. Beginning with the April 1 checks, retired military and federal civil servants will receive a boost in their annuities to compensate for rising living costs. This time the increase will be 6 percent, covering the six-month period from June to December 1979. Six months ago, the bonus was 6.9 percent. Next time, in view of the most recent price reports, who knows?

Don't misunderstand me: How can I object when I am one of the almost three million benefiting from the system? Besides, the increases are not designed to give the retired any advantage, just to help them keep up with inflation by adjusting their annuities in line with increases in the Consumer Price Index (CPI). Yet, from time to time, I can't help thinking that someone (taxpayers?) should be raising a few questions:

1. Why are federal retirees entitled to bonuses every six months while Social Security recipients receive their cost-of-living hikes only once a year? There is a real difference, both to the beneficiary and to the taxpayer, between a single annual increase and two semiannual increases. When a proposal was developed to put the two systems on the same (Social Security) track, the budget savings were projected at about $200 million the first year and over $800 million in each subsequent year.

2. How accurate are living conditions of federal retirees measured by changes in the CPI? In the past, there may have been times when the CPI understated price changes for the elderly because rapidly rising food and medical costs fell more heavily on them than on the "average" family. With Medicare, however, this is no longer true of medical-care costs. Also, because a large proportion of the elderly own their homes, they are protected against the rising costs of new mortgages, a major factor in this year's CPI rise. Nor do they depend so heavily on the automobile and the price of gasoline.

3. Can the country continue to afford full protection for retirees against rising prices? In the old days when the economy was more productive, inflation less menacing and the international scene more tranquil, this protection was a valuable way to maintain equity between the active and the retired population. More recently, with inflation far more serious from sources far more difficult to control, many well-accepted policies have had to be reconsidered. If, as seems likely, the country must devote a higher proportion of its output to defense needs, this puts even greater strain on the uses to which the civilian economy is devoted. As for maintaining equity with the working population, in 1979 workers were asked to limit their increase in wages to 7 percent annually, and the comparable target for 1980 will almost certainly be 7 1/2 percent to 9 1/2 percent, still well below this year's expected inflation rate. Should retirees be entitled to more?

Obviously, it is much easier to ask than to answer these questions, and a full discussion of them would require a far more detailed investigation. Let me merely suggest one approach worth considering. The generous nature of the federal retirement system is well known; it encourages early retirement—by the military beginning in their 40s, for civilians beginning at age 55. Many of the younger retirees continue in the labor force. That is good; the country can use their contribution. But do these relative youngsters require full protection against any upward creep of the CPI? Might it not be sufficient to protect this group against, for example, only half the rise in the CPI, assuming that they are young and active enough to supplement their annuities by their own efforts? Some exceptions might be in order—the fully disabled, for example. Then at a later age, perhaps 65 or 70, all retirees would be

[Editor's Note: While Mr. Henle stated the wage guidelines, many private industry wage increases exceeded them. The average non-farm income increase for 1979 was 8.7 percent, and the cost-of-living rose 13 percent, according to the Bureau of Labor Statistics. Also, BLS figures show that over the last eight years, average wages and salaries have increased only very slightly over the cost of living.]

given full protection against CPI increases.

The savings generated by this proposal could be substantial, but more than money is involved. If belt-tightening is to be the order of the day, the retired should also make a contribution.

Peter Henle

The Readers Write

Because the 1979 increase in the average level of wages and salaries was less than the increase in the cost of living, it is being suggested that the cost-of-living adjustments for government payments to retirees should also be less than the percentage increases in the cost of living. While Peter Henle suggests doing this to Civil Service retirement annuities, there are also proposals for doing it to Social Security benefits.

If there is to be a real all-out war on inflation, it doesn't seem to me unreasonable for us annuitants to make this contribution to it. However, this is far from being the whole story.

Over the years, because of the increasing productivity of the U. S. economy, wages and salaries in real terms have greatly increased. That is to say, average wages and salaries, in dollars, have increased by very much greater percentages than the increase in the cost of living. And even though this wasn't the case in the year 1979, it is certainly likely to resume in the future.

If adjustments to annuities and Social Security benefits are to be less than the rise in the cost of living during periods when the increase in other people's incomes are less, then fairness requires that these annuitants should also participate when the economy is providing larger increases in other people's incomes.

The following, I suggest, would be a fair solution: Stop using a cost-of-living index for adjusting these benefits and annuities, and instead use an index of wages and salaries in the economy. The plan should provide for adjusting the annuities periodically by a percentage equal to the average percentage by which the average level of wages and salaries has changed.

What the annuitants would lose in periods like the present, when the country is making no overall economic progress, should thus be compensated by their sharing in the prosperity when the national economy is producing higher levels of real income.

Lewis N. Dembitz

Peter Henle's article was an outrageous assault on the 50,000 Maryland retirees and the thousands living in the metropolitan Washington area.

Apparently Mr. Henle receives a generous retirement due to retiring from a high-level position. So for him inflation is not too much of a problem. This is not the case for almost half of the federal retirees [who] receive less than $500 per month. About nine-tenths of all retirees receive less than $1,000 per month. Is that living high on the hog, as Mr. Henle implies? Incidentally,more than 75 percent of survivor annuitants receive less than $500 per month, with more than one-third trying to exist on the munificent sum of less than $200 per month.

Mr. Henle hasn't done his homework on many things. Federal retirees receive two cost-of-living adjustments per year because Congress felt that those people who for many years received less pay than their counterparts in industry should be able to maintain a decent standard of living. The Social Security Advisory Council, which has made a complete study of Social Security, recently recommended that Social Security recipients also receive adjustments twice a year.

Medicare coverage decreases every year and now covers only about 38 percent of costs. It is true that many older citizens own their homes and have no worries about the increasing cost of mortgages. But many retirees have had to give up their homes because of the constantly increasing property taxes, the high cost of repairs, plumbing work and other services.

Mr. Henle asks, "Should retirees be entitled to more" than active workers who have been limited to 7 percent increases?" Simple arithmetic would tell him that 7 percent of a $40,000 to $50,000 salary is considerably more than even 13 percent of practically all retirees' annuities. His implication that most employees retire at age 55 is completely false; they cannot afford to live on their annuities. The majority of federal employees retire at age 60 or later, with the exception of disabled workers.

Daniel Jaspan
President, Silver Spring Chapter
National Assn. of Retired Federal Employees

By Fred Farrar

A public information specialist in the Office of Public Affairs, he is a former Washington correspondent for the *Chicago Tribune*.

Planning for Aerial Drug Busts

. . . and Tales of Dirty Tricks

They talked about square Groupers, the most lawless area in Florida, a hijacked airport and the pilot who was shot down between court appearances. The subject of not smiling also came up.

The "they," in this instance, were representatives of the Drug Enforcement Administration, the U.S. Customs Service, FAA and civil aviation officials from more than a dozen countries in the Caribbean and Central and South America. Their recent meeting at Miami Beach marked the first time the governments involved had gotten together to discuss the aviation safety problems created by the widespread use of aircraft in narcotics smuggling.

The conference was sponsored by FAA's Southern Region in cooperation with the Drug Enforcement Administration and the Customs Service. It was intended partly as a get-acquainted session and partly as a forum that the officials could use to exchange ideas and discuss the safety threat that airborne smugglers pose.

There was a general consensus that one of the first steps should be the establishment of an effective communications system that would allow each of the countries to inform the others what they were doing. The conference ended with the selection of a committee to establish the communications system and search for workable solutions to the other problems.

During the formal sessions, they discussed such problems as the use of unairworthy aircraft, violation of air traffic control regulations and alteration of registration numbers. Informally, they mused about the cause of the problems.

For example, the conferees noted the 88,144 pounds of marijuana and the 528 pounds of cocaine confiscated from the 180 drugcarrying aircraft that crashed on smuggling missions in 1979 but conceded that this was only a small percentage of drugs smuggled into the U.S. last year by air.

Some of that, they said, came in as square Groupers.

The Grouper is a prized game fish that is found in the waters off Florida, and sport fisherman go after it eagerly. The square Grouper also is found off the Florida coast, but a differnt kind of fisherman goes after it. Square Grouper is the name law enforcement officials have given to bales of marijuana that have been wrapped in plastic and dropped into the water from the air to be fished out later by people who know where to look for them.

The most lawless area in Florida was identified as the northwest part of the Peninsula about halfway between Tampa and Tallahassee, and one law enforcement officer told of one of the tricks the lawbreakers in the area use to discourage pursuers.

"There are lots of trails through that swamp, and they know them all. At preselected spots they hang triple fish hooks on monofilament and stretch it across the trail like a net.

"You can't see the nets at night, but they know where they are. So they stop just short, stand off from the trail a little ways, and let that guy that's chasing them run into the net.

"It sure takes the fun out of hot pursuit."

Another officer cited the example of a plane that crashed in the area earlier this year and the lengths to which some people

Customs agents patrol the southern Texas desert low and fast looking for suspicious aircraft and ground facilities. FAA controllers often provide tips on unconventional radar targets.

Photo by Ken Fell, *The Washington Post*

went to conceal the wreckage. He speculated that the people who found the wreckage stole the cargo and then wanted to keep the owners in the dark about what happened. So they laboriously turned the aircraft over on its back and painted it green and brown to match the vegetation of the surrounding swamp.

The hijacking of the airport took place in the early morning hours of Sept. 6, 1978, near the town of Almyra in east central Arkansas. A mechanic was working the night shift alone at about 1:30 a.m. when five armed men wearing ski masks took him prisoner and bound and gagged him.

Then they sat down and waited until about 4 a.m. when another car arrived. After a quick conference, the men released the mechanic and left.

It was discovered the next morning that an aircraft carrying 14 tons of marijuana had crashed in nearby Louisiana shortly before 4 a.m. The best guess is that the men had hijacked the airport so that the plane could land, unload and take off undetected. They left, the speculation goes, when they heard about the crash.

The pilot who was shot down had been standing trial on a narcotics charge in Providence, R.I., earlier this year. The trial been adjourned for the weekend on Friday, April 4. When the court was called to order the following Monday, the defendent, who was out on bail, was con-

At a clandestine airstrip in Colombia, drug smugglers were preparing to transfer their merchandise to this aircraft when they found it unflyable. They were about to set a torch to the plane when the airborne approach of law enforcement officers routed them. DEA photo

U.S. Coast Guard helicopters foiled an attempt to transfer a fortune in marijuana from the PBY amphibian to an innocent-looking yawl off the Florida coast.

spicuously absent—for good reason, as things turned out.

On Sunday, he had been shot down by ground fire from Colombian army troops while trying to break off an approach to a clandestine landing strip. The strip was in a part of the country that the Colombian government had placed off limits to foreign aircraft in an effort to curb the flow of marijuana from that country.

The troops had the landing strip under surveillance and, when the pilots spotted them and tried to break off his approach, they brought the plane down with small-arms fire, wounding both the pilot and a companion.

Both wounds were minor, and the men were quickly patched up, charged with illegal entry into the country and thrown into a Colombian jail. They are not expected to show up for trial in the U.S. on the original charge anytime soon.

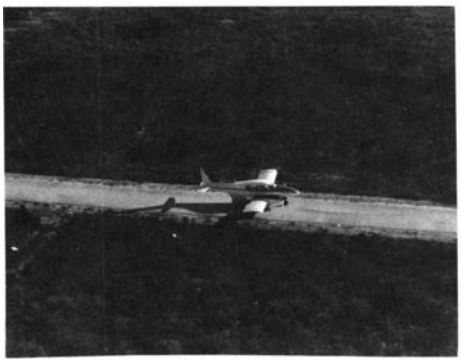
The subject of not smiling was brought up at one of the formal sessions, and it surfaced in the form of a complaint leveled at the FAA.

The agency's accuser was an official from a Central American country who had taken his flight training in the United States and earned his pilot's certificate here.

"You FAA guys always take things much too seriously," he said. "I've never seen any of you guys smile.

"The FAA to me has always meant real tough people—the law. And that written test, it had to be put together by tough people!"

Several of the FAA people present smiled. ■



These photos were taken from a U.S. Customs plane tracking a Piper Aztec used in smuggling, which makes an impromptu landing on a road in the Florida keys, then ground loops off the road. Even though the smugglers dumped cocaine when pursued, Customs found $5 million worth of Quaaludes aboard the abandoned plane. Photos by Robert Coram

Tennessee police and FAA medical examiner Robert Lash (with beard) get a whiff of still-burning marijuana after the crash of a smuggler's airplane. DEA photo

Q&A

What are the regulations that permit a government employee to drive or travel in a government vehicle when in a non-duty status—that is, a non-pay status? Can an employee be required to drive or ride in a government vehicle to and from a work area when in a non-pay status? In the event of an accident where the employee is injured and has to take a medical retirement, is it job-connected disability or not? Is it different if driver or passenger? In an accident, what are the liabilities of the employee and the government, and what is the employee's eligibility for workmen's compensation?

Order 4670.2A, Motor Vehicle Management, states that government vehicles are to be used for official purposes only. The general rule is that the use of a government vehicle that is properly authorized and essential to the operation of an agency activity is official use, which may include transportation between domicile and place of employment. An employee may also drive his or her own vehicle when it is considered advantageous to the government.

The government will pay compensation for the disability or death of an employee resulting from personal injury sustained while in the performance of duty. The administration of Federal employee compensation for injury is vested with the Department of Labor, which allows or denies payment. Under the provisions of the Federal Tort Claims Act, the United States is liable for acts or omissions of its officers or employees that occur while they are acting within the scope of their employment. The law provides that where suit arises from the operation of a motor vehicle by a government employee on official business, the exclusive remedy is a suit against the United States. Once the Department of Justice has determined that an employee was on official business, the injured party has no right to sue the employee personally.

The sole determining factor for injury compensation or liability is not whether the employee was in a pay status but whether the travel can be considered part of the performance of the employee's duty or within the scope of his or her employment. This depends on the specific circumstances, purpose and authority for traveling in a government vehicle.

What prohibits the proprietor of a non-controlled airport from establishing his own traffic patterns, including appropriate qualifications, such as altitude, for an airport? Which Service would issue the waiver and of which rule? Who would enforce compliance with such a pattern?

The FAA has the authority to establish regulatory airport traffic patterns. When such action is taken, the special air traffic rules for operating aircraft in those patterns are prescribed in Part 93 of the Federal Aviation Regulations. If no action of this kind has occurred, there would be no Federal restraint that would prevent the proprietor of an uncontrolled airport from establishing appropriate traffic patterns for that airport. Those patterns, however, must be consistent with Part 91 of the FARs. Guidance on this matter is in Advisory Circular AC-90-66, "Recommended Standard Traffic Patterns for Airplane Operations at Uncontrolled Airports." The establishment of traffic patterns should not require the waiver of any Federal Aviation Regulation. Unless operations in the airport traffic patterns are conducted contrary to the FARs, any enforcement of noncompliance with those patterns would be the business of the airport proprietor.

What criteria does FAA use to determine where ARTS II equipment will go? Our regional "Intercom" announced recently that one of the last three ARTS II will go to an airport in a neighboring state. According to the Terminal Area Forecasts published for 1980-1991, our air carrier emplanements, air carrier operations and instrument operations currently far exceed and are forecast to remain well ahead of that airport. My airport is in an area of mountainous terrain with high MEAs (minimum enroute altitudes) and MVAs (minimum vectoring areas). When ARTS III was first delivered, it went to major airports—those with the greatest passenger emplanements and instrument operations. Now, why do the busier airports have to struggle by on outmoded TPX-42, while facilities with less need get the latest FAA has to offer?

In 1969, criteria that combined instrument operations and annual passenger emplanements were used to determine which radar facilities qualified for ARTS III. These criteria were used only for the original selection. The next highest ranking facilities were chosen to receive a numeric decoder (TPX-42), which was the next best equipment available at the time. The ARTS II was subsequently selected for use at medium- to low-density radar facilities and any future facilities qualifying for radar. Our budgetary planning includes the upgrading of all TPX-42 facilities to provide them with automated capability. In the interim, any existing unassigned ARTS II systems are being assigned to TPX-42 locations in a priority set by the annual instrument count.

Update

The Tin Goose Flies Again

After a mid-life crisis that came close to ending its career, N7584 is back on the job at age 51. That job is carrying passengers for the "world's shortest airline," one that N7584---a Ford Tri-Motor built in 1928—held from 1936 to 1977.

Then it tangled with a telephone pole. Its nose was completely destroyed, its mid-section severly damaged and its wings battered and bent. It was a candidate for the scrap heap. But its owner, Island Airlines, Inc., of Port Clinton, Ohio, decided it was worth saving.

So the remains were shipped to Kal-Aero, Inc., a fixed-base operation in Kalamazoo, Mich., with considerable experience in restoring old aircraft. There, with tender, loving craftsmanship and under the watchful eyes of FAA inspectors from the Grand Rapids, Mich., GADO, the aircraft was slowly and painstakingly rebuilt (FAA WORLD, July 1979).

When the job was done last March 14, the Tri-Motor was rolled out of the hangar for its first flight, which lasted only nine minutes, because one of the engines developed an oil leak. However, the pilot, Harold Hauck, who had put in thousands of hours in the Tri-Motor before the crash, said: "It was as if nothing had ever happened to it."

Subsequent flights were uneventful, including the three-hour trip from Kalamazoo to Port Clinton so that the Tri-Motor could go back into service with Island Airlines. There it has resumed the 35-mile, 45-minute round trip that provides the only year-round passenger, freight and mail service to the residents of five small islands in Lake Erie.

And nobody's betting that it won't still be doing so 50 years from now. ■

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