

# RELATIVE



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## GAR impacts ATCO flights

### General aviation reservation system (GAR) begun Oct. 19

By Nancy E. Johnson first week of GAR.

The good, old days of walking up to your local air taxi operator, asking to be flown across the state, and jumping into the plane as quickly as it was ready seem to be moving into history. Not because of lessened demand, but because of restrictions on the air traffic control system mandated by the controllers' strike.

It seems there were few problems in the North Dakota airways after the strike, but this wasn't the case everywhere. General aviation pilots were being squeezed out of the system, according to the Federal Aviation Administration (FAA). To help solve the problems of some congested control centers, the general aviation reservation system (GAR) was implemented on Oct. 19.

While GAR is quickly becoming another of the numerous abbreviations in the world of aviation, it probably isn't one of the most popular in the state. As originally sent down, GAR applied to all general aviation aircraft except emergency flights and air taxi commuter flights with assigned two- or three-letter designators.

Each of the four flight service stations in the state was allowed one IFR flight per hour. This flight slot had to be reserved between 16 hours and one hour before departure. This affected flights between 6 a.m. and 10 p.m. Some local variances were available, such as flights between Grand Forks and Fargo, which could be handled with approach control coverage.

In the western part of the state, covered by the Salt Lake City center, no reservations were needed during the first week of the new system, according to Harold Vavra, director of the N.D. Aeronautics Commission. But, this led to some of the complaints heard about the system.

Vavra explained an oil company needed a drill bit flown from Wyoming to the Williston Basin and requested this service from a Bismarck air taxi operator. There were no slots open in the system, so the operator missed this job. However, a three-letter designated air taxi operator out of Wyoming brought in the drill bit because this operation was exempt from the system during the

When it was found the traffic by the three-letter designators had increased 450 percent under the system, revisions were made. Now, these operators are only exempt for their regular routes. Since there are no three-letter designators in the state, this doesn't have a direct effect on North Dakota operations.

When the GAR system went into effect, the first day of operations was a miserable day. Vavra summed up the first week of GAR operations by calling it "pretty disastrous."

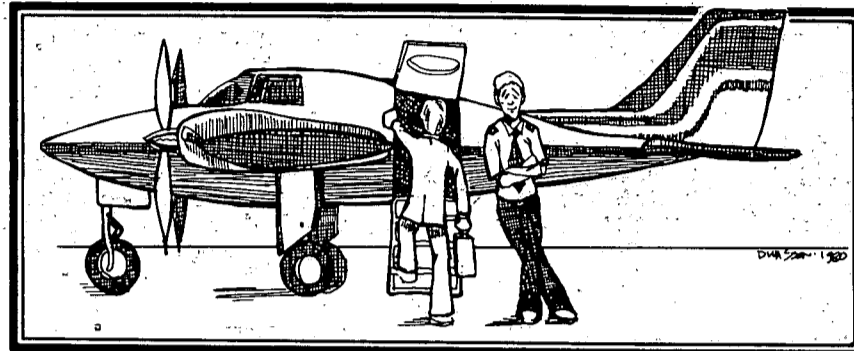
Since the system wasn't cast in concrete, there have been several modifications. Reservations are now needed between 6 a.m. and 8 p.m. and two slots open each hour. This now applies to flights controlled by Salt Lake City, as well as the Minneapolis center. Reservations can now be made from 24 hours to 30 minutes in advance.

High performance corporate jets have been exempted from the system if they fly above 29,000 feet, which cleared a lot of slots for general aviation, Vavra said. But, the weather has been exceptionally good since GAR was put into effect, and the system has yet to be really tested.

Airlines in the state haven't been affected by the controllers' strike, but have had to file flight schedules through the FAA. This was to insure 20 percent of the commercial flights had been cut back. Most of the cuts were made between bigger centers, where there were multiple flights, Vavra said.

GAR has been costly to Jack Daniels of Servair Accessories, Inc. at Williston. He estimated that first day of bad weather cost \$4,000 in gross revenue to his air taxi service. About 25 to 30 percent of his business is walk up or on demand. There is no pre-planning with this on demand service, so it is difficult to make reservations for slots in the system.

GAR has definitely been bothering Daniels and his operation but he also feels bad weather will make it that much worse. Daniels returned recently from meeting with the FAA in New Orleans about the problems facing the



air taxi industry, and he reported they are trying to work something out for this segment of the industry. However, the biggest problem with GAR to date has been abuse of the system, and a method for plugging on demand service into the system could bring about more abuse. This had made the FAA move very cautiously.

Air taxi and corporate pilots have been the most impacted by the GAR system, Daniels believes. But, the corporate pilots have had some relief with the 29,000 foot exemption and there is the

possibility of some preplanning of corporate aircraft use.

In economic terms, the air taxi operators are receiving the biggest economic impact, Daniels said. While the system has only so many slots, he said "We are hoping the bag can take more slots after it is better organized. Then, it might open up room for the on demand service."

Vavra reminded pilots the FAA will continue to evaluate the GAR and make changes as the system is tested.

## AOPA asks for review of GAR restrictions

"The ATC system is in an obvious mess," said AOPA President John L. Baker, who has asked Congress to investigate the FAA's allocation of the nation's airspace since the air traffic controller walkout.

Baker, who sent the request to the Public Works and Transportation Committee of the House of Representatives, said, "All users and localities must be assured of equal access and commensurate with the capacity of the system."

The AOPA call for a hearing was prompted by the inability of the FAA's General Aviation Reservations (GAR) system to solve the problem of utilizing present IFR system capacity in a way that is fair to all users.

Baker said excessive ATC system restrictions have a serious economic impact on the association's members and on the thousands of communities that depend on general aviation for transportation, goods and services.

The GAR program has been ineffectual since it was prematurely implemented last month before pilots and controllers had been fully informed on procedures. Further, additional burdens were placed on flight service stations at the same time they were being cut back in personnel and equipment.

Recent changes in the GAR are nothing more than a Band-Aid approach, said Baker, who pointed out that general aviation is suffering because the government is trying to solve a unique problem in a few specific locations by imposing an unworkable system everywhere. Baker emphasized, however, that the association was not

advocating the rehiring of fired air traffic controllers.

"We have been cooperating with the FAA to make its plan work and are pleased that some changes have been made," Baker said, but added, "I am optimistic that there is a better way to return air service to communities that have been virtually isolated."

A congressional inquiry is the best means at this time to provide constructive recommendations that may bring relief from airspace restraints that are excessive even with a reduced controller workforce.

### FAA reports on GAR

By November 2, FAA, Washington, D.C. said the number of general aviation and on-demand air taxi flights accounted for 39 percent of aircraft flying in the ATC system, down from 43% level reached after the PATCO strike. In early November the length of delays of 30 minutes or more dropped to 464 nationwide per day from as high as 778, FAA said.

FAA reported that the percentage of airlines using the system is 44%. The percentage of military flights has been a constant at 17%.

Beginning December 1, the FAA latest round of hourly flight reductions at the nation's 22 busiest airports goes into effect. The FAA said it wants to cut airline flights from their current 83 to 84 percent of their operating level before the strike to about the 77 to 78 percent of pre-strike levels.

# Living with winter flying woes

Poor weather conditions, fast-moving fronts, strong and gusty winds and icing conditions. Winter is here again. And in many parts of the country, operating in the winter environment requires special operating procedures.

Winter flying is not particularly hazardous. It's just that the pilot must use a little extra caution and exercise good judgment in analyzing weather conditions.

Let's start with the aircraft. Install winterization kits, baffles, winter fronts and oil cooler covers if they're recommended and approved by the aircraft manufacturer. Make certain, too, that the oil breather is free of ice, and check all hose lines, flexible tubing and seals for possible deterioration or loss of insulation.

Many aircraft are equipped with cabin heater shrouds that enclose the muffler or portions of the exhaust system. A thorough inspection should be made of the heater system to guard against deadly carbon monoxide gases from entering the cabin.

Make sure you use the proper viscosity oil and grease for the temperature range in which you'll be operating the aircraft. And remember to keep wet cell batteries fully charged to prevent loss of power caused by cold temperatures and the possibility of freezing.

Inspect wheel wells and wheel pants carefully. During thawing conditions, mud and slush can be thrown into the wheel wells during taxiing and takeoff. If it then freezes during flight, the mud and slush could create landing gear problems. You may want to consider removing the wheel pants from fixed-gear aircraft over the winter months to prevent the possibility of frozen substances locking the wheels or brakes.

Even though the urge to hurry the preflight is natural in cold temperatures, it is the very time to run the most thorough preflight inspection.

Be especially alert for fuel contamination. Always park the aircraft overnight with full fuel tanks. If your aircraft is warm when parked with half-empty tanks, cold temperatures will condense water in the tanks.

In temperatures of 20 degrees

Fahrenheit and colder, consider preheating the aircraft before attempting to start the engine. A failed startup may succeed only in icing over the spark plugs and then you've really got problems.

Use only approved preheaters and procedures. Do not place heat ducting so it will blow hot air directly onto combustible parts, such as upholstery, canvas engine covers; flexible fuel, oil and hydraulic lines, or oil dipsticks, which sometime contain plastic parts. Keep a fully charged fire extinguisher handy.

If you use conventional starting procedures, carefully pull the prop through by hand to loosen congealed oil and spread it around the engine. Don't overprime, since that would wash down cylinder walls and may result in scoring of the walls. Aircraft fires also have been started by overpriming.

All — repeat, all — frost, ice and snow must be removed from all airfoil and control surfaces. Remove them also from static ports, pitot tubes and antennas. Glycol or one of several other ice removal compounds may be used, or snow and ice can be melted off in a heated hangar.

If it is melted off, be sure the water doesn't run into control surface hinges, where it later could refreeze. Ice can unbalance a control surface and cause flutter. Accident investigators have found that ill-fated aircraft have been brought down with as little as one-eighth-inch of ice adhering to the ailerons, elevators or rudder(s).

If your aircraft is parked in an area of blowing snow, all openings should be free of snow and ice before flight. Openings include pitot tubes, wheel wells, heater and carburetor intakes, full vents and the like.

Be especially careful during taxi operations, since snow and ice-covered taxiways may be treacherous. Taxi at a low speed and go easy on the brakes, or stay off them all together. If the airplane starts to slide sideways, turn it into the wind and use power to stop.

For takeoff, cold weather operating procedures as outlined in the pilot's operating handbook should be followed.

En route, pilots should remember that winter weather is often very changeable. Check the weather careful-

ly before and during your flight, being sure to ask about icing conditions and winter-generated NOTAMS that may affect your flight, such as runway closings at your destination airport.

Don't try to tackle more weather than you — and your airplane — can handle. Be particularly wary of carburetor ice, which generally forms in temperatures between 32 and 80 degrees Fahrenheit when the relative humidity is 50 percent or more. If visible moisture is present, carburetor ice will form at temperatures between 15 and 32 degrees F.

Partial throttle (cruise or letdown) is the most critical time for carburetor ice. Warning signs are loss of RPM (fixed-pitch propellers), drop in manifold pressure (constant speed) and rough running.

Landing surfaces can be especially

dangerous in cold weather conditions. Be aware of other hazards, too, such as snow banks on the sides of the runway and poorly marked runways. Information about runway surface conditions should be obtained, but if it is not readily available, take the time to circle the airport to check for snow drifts or other obstacles before landing.

One final note. Consider purchasing, or assembling yourself, a good survival kit. Chances are good that you'll never need it, but if you do, it'll be worth a whole lot more than the original investment.

Winter can be a beautiful time to fly. Aircraft performance improves, the air is clear and nasty thunderbumpers are usually gone for the season. Let's just make sure it's a safe time to fly, as well.

## Winter flying tips

(FAA Accident Prevention Booklet)

**Baffling and winter covers** - Baffles are recommended by some manufacturers to be used in augumenter tubes. Winter fronts and oil cooler covers are also added to some engine installations. FAA approval is required for installation of these unless the aircraft manufacturer has provided for their approval. When baffles are installed on an aircraft, a cylinder head temperature gauge is recommended, particularly if wide temperature differences are encountered.

**Engine Oil** - The oil is extremely important in low temperatures. Check your aircraft manual for proper weight oil to be used in low temperature ranges.

**Oil Breather** - The crankcase breather deserves special consideration in cold weather preparation. There have been a number of engine failures attributed to a frozen breather line which causes pressure to build up in the crankcase, sometimes blowing the oil filler cap off or rupturing a seal and pumping the oil supply over the side. The water which causes this freezing is a natural by-product of the combustion of fuel and air. Most of the water of combustion goes out the exhaust; however, some enters the crankcase in vapor form. When the vapor cools, it condenses in the breather line subsequently freezing it closed. Special care is recommended during the preflight to assure that the breather system is free of ice. If a modification of the system is necessary, be certain that it is an approved change so as to eliminate a possible fire hazard.

**Hose Clamps, Hoses, Hydraulic Fittings and Seals** - An important phase of cold weather preparation is to inspect all hose lines, flexible tubing, and seals for deterioration. After replacing all doubtful components, be certain that all clamps and fittings are properly torqued to the manufacturer's specifications for cold weather.

**Cabin Heater** - Many aircraft are equipped with cabin heater shrouds which enclose the muffler or portions of the exhaust system. It is imperative that a thorough inspection of the heater system be made to eliminate the possibility of carbon monoxide entering the cockpit or cabin area. Each year accident investigations have revealed that carbon monoxide has been a probable cause in accidents that have occurred in cold weather operations.

**Control Cables** - Because of contraction and expansion caused by temperature changes control cables should be properly adjusted to compensate for the temperature changes encountered.

**Oil Pressure Controlled Propellers** - Propeller control difficulties can be encountered due to congealed oil. The installation of a recirculating oil system for the propeller and feathering system has proved helpful in the extremely cold climates. Caution should be taken when intentionally feathering propellers for training purposes to assure the propeller is unfeathered before the oil in the system becomes congealed.

**Care of Batteries** - Wet cell batteries require some special consideration during cold weather. It is recommended that they be kept fully charged or removed from the aircraft if parked outside to prevent loss of power caused by cold temperatures and the possibility of freezing.

**Wheel Wells and Wheel Pants** - During thawing conditions, mud and slush can be thrown into wheel wells during taxiing and takeoff. If frozen during flight, this mud and slush could create landing gear problems. The practice of recycling the gear after a takeoff in this condition should be used as an emergency procedure only. The safest method is to avoid these conditions with retractable gear aircraft.

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### RELATIVE WIND

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# Denver FAA honors UND'S Hammond

By Tina Evans

George Hammond would not tell you he was selected Rocky Mountain Region 1981 Flight Instructor of the Year by the Federal Aviation Administration unless you asked him.

Hammond, director of flight operations for the University of North Dakota aviation department, would rather talk about his department and his students than about himself.

With a soft Oklahoma drawl, he talks about the department that had 150 students and 15 airplanes when he joined it in 1974 — it now has 480 students and 60 airplanes, he said.

As director of flight operations, Hammond supervises the flight department, which includes the flying school, air transportation for the university, and the monitoring of research pilots. He supervises about 150 people. He also teaches ground school and flight instructs three students.

"We operate the flight department seven days a week out at the airport, so we have a tremendous supervisory challenge. It's a pretty big department to operate," he said.

He seems to thrive on that challenge. "It's interesting and rewarding to see the way the students turn out. It's good to be able to see them progress and go forward, and become flight instructors themselves," he said.

"The exuberance here is unusual. These students have such initiative and pay attention to the program and following it. It's unusual compared to flight instructing in other areas, where the students have other priorities. These students have goals and milestones to reach, and they're aggressive and serious about the program."

Reaching goals one by one is part of Hammond's teaching philosophy. "I try to portray to them that it's fun, but it's not a profession to be taken lightly," he said. Everything has been learned from the ground up. Rules and procedures must be carefully followed, and you master one phase before going on to the next. There is no room for shortcuts in the flying business — one must be right the first time."

He practices what he preaches. "You tell the students that, and you also demonstrate the professional approach in your daily contacts with them," he said.

Hammond was in the Air Force for 34 years. He flew bombers in World War II and fighters and reconnaissance planes in Southeast Asia. He was transferred from Saigon to Grand Forks Air Force Base in 1972. When he retired from the Air Force in 1973, he attended UND for a year to finish his bachelor's degree, then started at the UND aviation department in 1974.

He said he liked military flying. "It's very sophisticated equipment and is very demanding. It was an entirely different kind of flying."

Though military flying was a different kind of challenge, he said, there is always a challenge in flying. "You have to strive for improvement. No one is perfect — so you always have a challenge."

Hammond said he wanted to fly before he entered the Air Force, but didn't start until he enlisted. Now he flies about 500 hours a year.

Hammond said he thinks part of the attraction of aviation as a course of study is that it is truly a business field. "There's more to aviation than just piloting. Two of our majors are in the School of Business."

Then he starts talking up the department — he attributes much of UND's increase in aviation majors to the department's success under chairman John Odegard. "We've become quite well-known in aviation with manufacturers and in university circles and other general aviation business circles — insurance, financing, all those areas. We're well known as a school that develops quality people — we turn out professionals," he said.

Hammond and his wife Alma live in Grand Forks. They have one son, George the second, who is a lieutenant colonel in the Air Force, stationed in Spain. They have two daughters — Denise, who works in Colorado Springs, Colo., and Lori, who attends the University of Minnesota and works in Minneapolis.

## Register now for Dickinson session Jan. 28-30

Plans for the annual NDAA meeting are now in the finalization stage. Speakers, seminars and business agenda will be announced in the next Relative Wind which will be in your mailbox two weeks before the convention.

The convention is Jan. 28-30, 1982 in Dickinson at the Ramada Inn.

The convention theme is "Forecasting The Economic Future for North Dakota" and that theme will focus particularly on how that future impacts aviation.

The second annual winners of the trio of NDAA Pioneer, Leadership and Distinguished Service Association awards will be announced in the next issue of Relative Wind.

Those awards will be presented at the annual awards banquet, Thursday, Jan. 28.

The banquet speaker will be Larry Burian, president of the National Air Transportation Association.

The convention program will include a panel discussion with participants from the Federal Reserve Board, First Bank Corporation, Northwest Bank Corporation and Greater North Dakota Association.

### REGISTRATION FORM FOR 1981 NDAA CONVENTION Jan. 28-30, Ramada Inn, Dickinson, N.D.

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## From Your Secretary

By Jack Daniels,  
NDAA Exec. Sec.

The story that appeared in the last issue of Relative Wind about sales tax on aircraft sold in North Dakota came out very misleading.

After reading it myself I had to go back to my notes to unscramble my own thoughts.

What really happens is that a sales tax is due and payable on all sales made in North Dakota regardless of where the purchaser claims residence. A sales personal property, use, or registration tax is due on all aircraft bought and brought into any state.

North Dakota has reciprocity for this tax with all the 48 contiguous states except California. This gives the purchaser credit for the tax paid to a North Dakota dealer against any tax due in the purchaser's state.

South Dakota, Minnesota, Kansas, Nebraska, Colorado and Wyoming accept a sales slip showing sales tax paid in North Dakota as proof of taxes paid.

This item makes dealers in North Dakota more able to compete with other states in the sales of aircraft and payment of the North Dakota sales tax.

North Dakota dealers are exempt from collecting North Dakota sales tax only on sales made outside the state that are delivered to the purchaser outside the state.

Our upcoming annual meeting will have a session on the proposals of the tax department to clear up this act on the sales tax issue. Plan on attending if you have any questions.

Maybe this will clear the air and make some sense. I hope so.

# News from around the N.D. airways

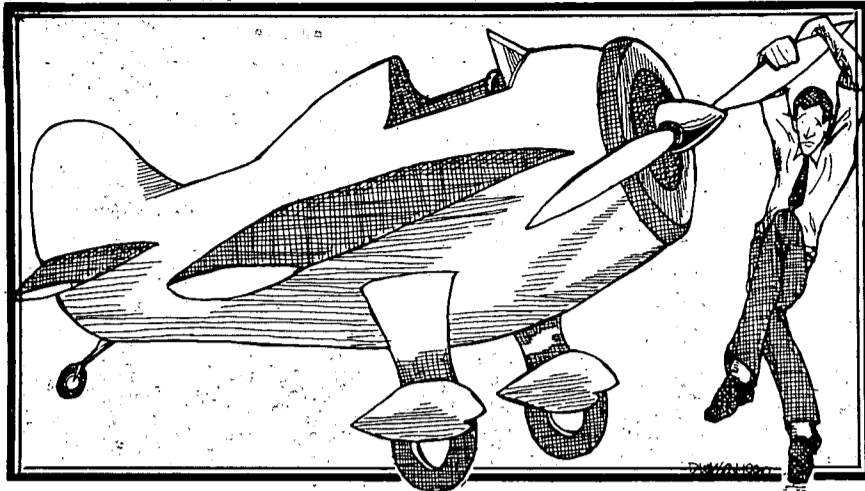
## Grand Forks ranks high

Grand Forks International Airport ranks fourth from the top in total aircraft operations of any airport in the Great Lakes Region of the Federal Aviation Administration.

The FAA Great Lakes Region includes the states of Illinois, Indiana, Ohio, Michigan, Minnesota, Wisconsin and the recently added states of North and South Dakota.

In calendar year 1980, the FAA Control Tower at Grand Forks International Airport reported a total of 268,898 aircraft operations of which 245,309 were local flights, 16,063 were itinerant aircraft operations and 7,526 were air carrier operations. One landing or one take-off counts as an operation.

The Department of Aviation of the University of North Dakota's flight training accounted for about 90 percent of the total aircraft operations.



## Flying Farmers elect officers

The North Dakota Flying Farmers Association at their annual convention at Jamestown September 25, 26 and 27th, elected a slate of officers and officials for the new year.

Rubin Day, Moffit was elected President and Arnold Widmer, Crete was elected Vice President of the Association. Harold G. Vavra, Bismarck and Mrs. Betty Day, Moffit were reelected secretary and treasurer respectively. Mrs. Betty Day was crowned the North Dakota Flying Farmer queen.

Directors elected for two year terms of office include: Arlene Kraft, Mapleton; John Kirschman, Hettinger; Betty Banker, Mohall and Harold Rygg, Portland.

Beverly Grieve was named North Dakota Flying Farmer Woman of the year and Jack Banker, Mohall was selected NDFF Man of the year.

Diane Grieve, Buffalo was named

Farmerette. Donna Kraft, Mapleton and Mark Berge, Northwood were selected "teen advisors".

Mrs. Virginia Widmer, Crete was named Newsletter Editor for the N.D. Flying Farmers Association.

About 150 Flying Farmers from North Dakota, Minnesota, South Dakota, Montana and Manitoba and Saskatchewan, Canada as well as several International Flying Farmer officials and the IFF Duchess attended the annual banquet Saturday night.

## FSS cuts need Congress OK

In recognition of the need for pilots to obtain accurate weather information on a timely basis, the U.S. Senate approved legislation that will require congressional approval of any permanent Flight Service Station closings or reductions in hours of service until the FAA's FSS modernization program is operational. The stipulation was included in the report accompanying the bill appropriating funds to the Department of Transportation for Fiscal Year 1982. The bill must now be considered by a conference committee of the two houses of Congress. Action is expected to be completed prior to the end of this year.

North Dakota has FAA Flight Service Stations at Grand Forks, Jamestown, Dickinson and Minot.

## Two N.D. firms begin operations

RASMUSSEN AVIATION, INC. will be located at West Sloulin Field at the end of 38th St. West, Williston, North Dakota. The firm is originally from Kalispell, Montana and will offer 100 Octane Av gas and jet fuel sales to the public. He will offer student instruction, sales for Cessna single engine aircraft, service repair for all Cessna lines and will have a Cessna pilot training center.

DAKOTA-HELICOPTER AIR SERVICES, INC. will locate at Beulah Municipal Airport. Dakota-Helicopter will operate an air service which includes operating all types of aircraft for public or private hire. A new hangar was constructed on the airport along with office space inside.

## Rent an Eagle

At this year's NAAA convention, Eagle Aircraft Company of Boise, Idaho, will announce the opening of five Rent-an-Eagle centers where Eagle agricultural aircraft will be available for short term rentals.

According to Rent-an-Eagle spokesman Brad Brown, "This program will give the operator assistance when he needs it most — when his season peaks or when his lead aircraft is down for repairs."

The first agricultural aircraft rental program of its kind, Rent-an-Eagle is structured much like the Hertz Rent-a-Car system. A deposit plus a minimal amount of paperwork will get the qualified pilot into the plane. Rent is calculated on the number of hours the plane is in service. The rental program will also allow the operator with a traditionally short season the opportunity to rent an Eagle for the entire season.

## Air-to-air frequency

(Reprinted from Minnesota Flyer)

We have had reports that some pilots are still using 122.9 for air-to-air communication. This is disconcerting to a pilot who is flying into a non-Unicom airport and broadcasting his position on 122.9. This frequency should no longer be used for air-to-air communications.

The new air-to-air frequency is 122.75. Please spread the word!

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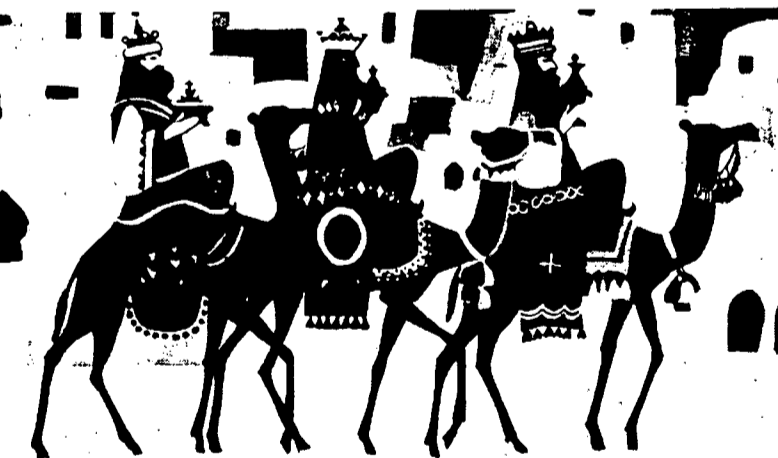
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## Warren Walkinshaw

# From crop duster to aerial sprayer

By Karen McConn

When crop duster Warren Walkinshaw was beginning his operation in the '40s, his science was already on the brink of change. He'd been spreading dust by plane for a year or so when in 1947 he first saw an aerial sprayer.

"I took a look and told a competitor of mine, 'This can't be here to stay. We'll be dusting for years to come.'"

The slight 59-year-old chuckled as he told how that same winter he set about modifying two Morris Stearmans, WWII pilot trainers, adding tanks, booms and pumps to the bi-planes to ready them for spraying.

"The funny thing is they worked," Walkinshaw noted with crusty satisfaction. The planes indeed worked so well that nearly 35 years later, Walkinshaw says he wouldn't fly anything but a Stearman. His operation northwest of Argusville, which he calls typical of many of the older operations in the country, includes nine Stearmans. Through the years he's had some 180 men, 3 to 5 and sometimes 8 at a time, flying them for him. Even though he mentioned that today's pilots are walking away from crashes that one day would have killed them, he says it's still the Stearman's safety and strength that makes him most appreciative.

As we sat in the cluttered office adjoining the Walkinshaw home one day when summer rains crimped his 10-12 hour flying schedule, he told of the development of the aerial spraying industry, the total picture of which he's been happy to be a "small part" of.

Speaking again of the early spraying years, Walkinshaw told of people's reactions to the new ways of pest control.

"We started out with some sprayers some 2-4D. You know, we had to put on demonstrations, spraying mustard to convince people we could kill it.

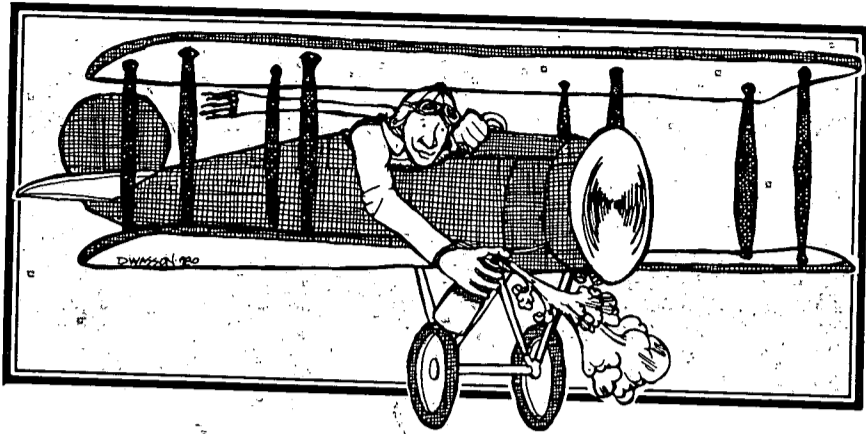
"Same thing with grasshoppers. We had to actually take people out in the fields and show them we could kill grasshoppers. They were used to dusters with the cloud coming out behind the plane, you see. With sprayers, they couldn't see anything."

Once Walkinshaw had been convinced himself, he'd been enthused about trying the new method. Being without a mechanics license in 1947, he'd offered money for someone to build a sprayer. Chemical emulsions were coming on the market, mainly 2-4D, DDT and chlordane. It would be a year or so yet before the interest in spraying spread from other parts of the country to this area.

(Walkinshaw now handles between 35 and 40 different chemicals. He worries about cost to the farmer and how price-hikes are due in part to the high clearance costs to chemical companies brought about by federal regulations. He doesn't mind saying that through the years some chemicals have been banned that were more effective than some current EPA-approved mixtures. He was impatient with the recent case of the Mediterranean fruit fly in California. He is fond of pointing out that until just after WWII, we were essentially, and for today's needs hopelessly, organic farmers.

In tracing the roots of his science, Walkinshaw began his account with the late teens and early twenties, when the boll weevil invaded the south from Mexico and nearly devastated the cotton industry.

"It got so bad people in cotton began to



diversify," he said. "They planted peanuts, soy and corn because the cotton economy was on the verge of collapse.

"There's a town in Alabama, I think it is, that erected a statue to the boll weevil because it forced them to diversify like that.

"But anyway, to do something about the boll weevil, they put a man on a mule and gave him a couple of bags of calcium arsenic. At night he'd ride through the fields throwing it out.

"Every so often they'd have to replace both the man and the mule. They lost a lot of hides — calcium arsenic peels and blisters the skin." He told how he himself had had a lot of those burns. "They went through a lot of men and a lot of mules. It was a slow, costly pro-

cess." recruit duster pilots for the WWII Royal Air Force.

"They turned out to be some pretty handy guys with those Spitfires and Hurricanes," he commented. "The British sure liked them."

"I'm a johnny-come-lately in this business," Walkinshaw commented, explaining that those latter-day crop-dusters developed the methods that "taught guys like (him) how to fly."

Actually, Walkinshaw was already a flight instructor during the war. As a civilian, he trained glider pilots at Grand Forks, first for the army and later the air force. When the war was over, surplus planes, this time N3Ms and Stearmans, came on the market.

"A lot of us started dusting then. We



Warren Walkinshaw poses by one of his planes.

cess."

After WWI, according to Walkinshaw, when surplus Jennys and war-trained pilots became available, a couple of men began experimenting with the bi-plane, dumping calcium arsenic dust out the side and onto the fields. The science advanced when a hole was cut in the bottom of the plane for easier dispersal. Next came a hopper and gate to let the dust out automatically.

Eventually, the addition of a spreader underneath the plane allowed for a wider swath and more even distribution. Crop dusting as a science became increasingly sophisticated during that period between the wars, as did the pilots.

Walkinshaw digressed for a moment to note that the British came to the U.S. to

scouted up a few bucks, got a plane and a hopper, and we were in business."

Of no slight significance during those early post-war years was Walkinshaw's marriage. He noted for anyone with a curiosity about the typical aerial sprayer that "just about every sprayer in the country has a wife who keeps the operation running." His wife Mildred, who takes care of paper work and handles growers' calls, often suggesting the chemicals and rates at which they should be applied, has been on the job for the past 35 years, as long as they've been married, and, she said, "learning by listening."

Shortly after the war, the liquid emulsions for pesticides were being developed. DDT, 2-4D and chlordane were favored. That's when pilots like Walkinshaw had to demonstrate their

chemicals' power. Because spray planes weren't being manufactured and he couldn't find a mechanic to build one, that when Walkinshaw first began modifying Stearmans.

In current modifications, the planes acquire spraying gear, enlarged wings and a 600 hp engine in Walkinshaw's shop.

"Today they're mostly replaced by manufacturers' planes, but there are still a few of us around who use Stearmans."

We were by then looking over the planes in his hangar, and Walkinshaw was fondly describing changes being made on one of the Stearmans.

"Here's something for you though. The old 9-cylinder Pratt and Whitney engines are still being used in some of those brand new planes. It's just been the last two or three years that they've started using turbines."

Continuing with his historical account, Walkinshaw talked of the post-war era's "revolution" in agriculture brought about by the developments in farm implements, hybrid varieties and pesticides.

"Around the U.S. spraying began to get more into the picture. Those with dusting operations began adding sprayers to their fleets, and more and more chemicals were developed."

He called the early aerial sprayers some "crusty old guys" who has been "crusaders," helping the science progress until it has become an essential in agricultural production.

"They had to sell the concept," he reminded. "I've lived through these things and seen this development we've been talking about. I've liked being a small part of the picture."

According to Walkinshaw, a key to the development of aviation as an essential in agriculture was the 1950 realization of the then CAA regulations concerning modification of both civilian and military planes, a move that made the U.S. among the most free of countries in which the science could develop.

The veteran sprayer talked at length about current regulations that are a bother in his work. Not that he's anti-EPA—"No responsible person advocates anarchy," said he—but he believes that the Department of Agriculture should be more involved in the denial or approval of chemical clearance.

"They (EPA) have pulled some good chemicals that we didn't think were causing any harm," he said. "Some were older chemicals that could be used for a number of things including minority crops such as canary and rape seed and mustard.

"It costs in the millions to clear a chemical now, and the companies simply can't afford to get clearance for some of those chemicals that are used less."

Even though Walkinshaw's sentiments lie with the Stearman, he's still interested in "waves of the future." He said some think one of those waves is the helicopter. He's got three he's going to try out for spraying.

But he thinks that the plane has the advantage in open country like the Midwest, that the cost of operating a helicopter cancels the fuel gains (about 2/3 gain with helicopters), and that the machines don't offer the same crash protection planes like his old Stearmans do.

# Aeronautical advisory stations

The following information was taken directly from the 1981 Airmans Information Manual (AIM), Part 157, and is printed in the interest of flying safety, and to clear up some misunderstanding about the use of Unicom's, and frequency assignments for Unicom's. Note that the air-to-air frequency is now 122.750, NOT 122.9.

## 157. AERONAUTICAL ADVISORY STATIONS (UNICOM)

a. UNICOM is a nongovernment, air/ground radio communications facility which may provide airport advisory information at certain airports. Locations and frequencies of UNICOMs are shown on aeronautical charts and are listed in the Airport/Facility Directory.

b. On pilot request, UNICOM stations located at nontower and non-FSS airports may provide pilots with weather information, wind direction, the runway the wind favors, and other necessary information.

c. In communicating with a UNICOM

station the following practices will help reduce frequency congestion, facilitate a better understanding of pilot intentions and location in the traffic pattern and enhance safety of flight:

(1) Select the correct UNICOM frequency.

(2) Call for runway in use approximately 10 miles from the airport. Listen on the frequency prior to transmitting since you may be able to pick up the runway in use and eliminate the need to make a transmission.

(3) State the identification of the UNICOM station you are calling in each transmission.

(4) Make sure you receive a response from the station being called since many stations and aircraft at other airports transmit on the same UNICOM frequency.

(5) Speak slowly and distinctly.

(6) To the extent practicable, confine

your conversation to operational matters.

(7) UNICOM frequencies assigned to uncontrolled airports should not be used for air-to-air communications.

d. Recommended UNICOM Phraseologies:

(1) Inbound

Example:

FREDERICK UNICOM CESSNA 123 REQUEST AIRPORT ADVISORY

Example:

FREDERICK UNICOM CESSNA 123 ENTERING DOWNWING (or final) FOR RUNWAY ONE NINE.

(2) Outbound

Example:

FREDERICK UNICOM CESSNA 1233 DEPARTING RUNWAY ONE NINE.

e. THIS SERVICE SHALL NOT BE USED FOR AIR TRAFFIC CONTROL PURPOSES, except for the verbatim relay of ATC information limited to the following:

(1) Revision of proposed departure time.

(2) Takeoff, arrival, or flight plan cancellation time.

(3) ATC clearance provided arrangements are made between the ATC facility and UNICOM licensee to handle such messages.

f. The following listing depicts the frequencies which are currently designated by the Federal Communications Commission (FCC) for use as Aeronautical Advisory Stations (UNICOM).

Frequency	Use
122.700	uncontrolled airports
122.800	uncontrolled airports
122.900	uncontrolled airports
122.725	private airports (not open to public)
122.750	private airports (not open to public) and air-to-air communications
122.900	(MULTICOM FREQUENCY) airports with nontower, FSS or UNICOM airports with a control tower
122.950	high altitude
122.975	high altitude
123.050	high altitude
123.075	high altitude

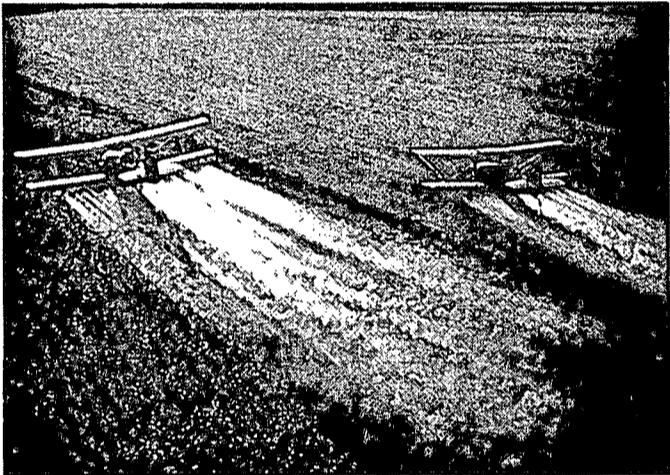
## Air safety chapter forms

A Great Lakes Chapter of the International Society of Air Safety Investigators (ISASIO) was organized Monday, May 11, at the Chicago O'Hare Airport by John McDonald, the ISASIO international president.

The purpose of the chapter is to promote development of improved aircraft accident investigation procedures through lectures, displays, presentations and exchange of information among interested air safety investigators.

The officers elected are as follows: Robert B. Marshall, president, Woodstock, Ill.; Jack G. Harrington, vice president, Glenview, Ill.; Brian R. Hogan, treasurer, Des Plaines, Ill.; Douglas W. Cunzeman, secretary, Des Plaines, Ill.; Robert G. Rubens, 1st director, Joliet, Ill.; Jack J. Eggspuehler, 2nd director, Dublin, Ohio; Jesse Stonecipher, 3rd director, Savoy, Ill. and Captain E.R. Burmeister, 4th director, Lombard, Ill.

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# FAA proposes glider rules

The Federal Aviation Administration says the growing numbers of hang gliders and so-called ultralight aircraft has reached the point some regulation may be needed to keep them from interfering with other flight operations.

The Agency has asked for comment on a proposed rule which would establish guidelines to keep this from happening.

The FAA is particularly concerned about the uncontrolled use of the ever increasing number of powered ultralight vehicles, which essentially are motorized hang gliders with landing gear, movable control surfaces and other features that give them operational capabilities similar to regular aircraft. The agency estimates that the current inventory of 30,000 hang gliders in the United States includes about 2,500 powered ultralights.

FAA has issued a notice of proposed rule making that would make ultralight vehicles weighing 155 pounds or more or having a fuel capacity of over 15 pounds (about 2.5 gallons) comply with the same basic requirements as other aircraft. That means both the aircraft and the pilot must be licensed by the agency.

Hang gliders and ultralights under 155 pounds would be subject to certain operational requirements designed to keep them from creating a hazard to themselves or other aircraft. But the vehicle would not need an airworthiness certificate and the operator would not be required to have a pilot's certificate.

This proposal represents a minimal and limited regulatory approach which would impose the least burden on the user. It borrows from a number of self-policing programs already established by hand glider and ultralight vehicle clubs and associations but for which an adequate level of voluntary compliance has not been achieved. The proposal seeks to implement only those requirements considered necessary to

maintain flight safety for all airspace users," an FAA statement said.

In addition, the statement said, "the continued incursions of these aircraft into controlled airspace and their non-compliance with Federal Aviation Regulations will derogate air safety if allowed to continue."

Under the proposal, operators of hang gliders and ultralights would have to operate in accordance with prescribed visual flight rules (VFR) criteria for flight visibility and clearance from clouds. This would have the effect of prohibiting flights in marginal weather. Night flights also would be banned.

In addition, the proposed rules would make operators responsible for maintaining separation from aircraft on a "see and avoid" basis. They also would have to yield right of way to all aircraft.

Another provision would prohibit operations in certain controlled airspace, such as airport traffic areas, without prior approval from the appropriate air traffic areas, without prior approval from the appropriate air traffic control facility. Flights over congested areas of cities and towns would be banned as well.

Comments on the proposed rule (Docket No. 21631) should be addressed to the FAA Office of Chief Counsel, AGC-204, 800 Independence Ave., S.W., Washington, D.C. 20591.

## Weighmaster

The Weighmaster weighing system has been developed to measure an exact load prior to takeoff. The system is self-contained and requires no external power sources to function. Weighmaster systems are always ready. The dial-type meter is easily read at a glance, and accurate to within 1 percent.

For information call Planemate Support Systems at 314-359-0500.

# Beware of carburetor ice

(Reprinted from Mn. Flyer)

## INDICATIONS OF CARBURETOR ICE ARE:

- Decreased Engine RPM (with fixed pitch propeller).
- Decreased Manifold Pressure (with constant speed propeller).

## WHEN IS CARBURETOR ICING MOST LIKELY TO OCCUR?

1. At low power settings on extended descents. (The kicker is that you may not detect it until you APPLY ADDITIONAL POWER. It is a good practice to clear the engine periodically during extended lower power descents.

2. During humid conditions at outside air temperatures below 15 degrees Celsius.

3. Icing can occur without visible moisture with high humidity when temperatures are as high as 87 degrees Fahrenheit (30 degrees Celsius).

## WHAT TO DO:

Apply carburetor heat. This will allow the warmth of the exhaust system to heat incoming carburetor air.

## WHAT TO LOOK FOR AFTER APPLYING CARBURETOR HEAT:

• If there is ice in the carburetor, the power reduction will remain constant.

If there is no ice in the carburetor, there will be a small reduction in power followed by an increase in power after 10 to 20 minutes.

• If a sufficient amount of ice has accumulated, the engine will run rough until ice has cleared.

# Are you your brother's keeper?

Aircraft crash due to fuel exhaustion; IFR fatalities accrue from non-IFR pilots flying in IMC or IFR pilots flying into predictably unflyable weather or busting minimums; hand-prop accidents abound . . .

A waste of lives and aircraft. Why are we willing to put up with this waste? Partly, because we don't wish to be involved. If we see a student pilot carrying passengers, well "that's his business". If we see someone land and refill his Cessna 150 with 26 gallons of fuel, then "he's a lucky guy". If a non-instrument rated pilot brags about his IFR flying, then "I wouldn't do it, but he has a lot of guts."

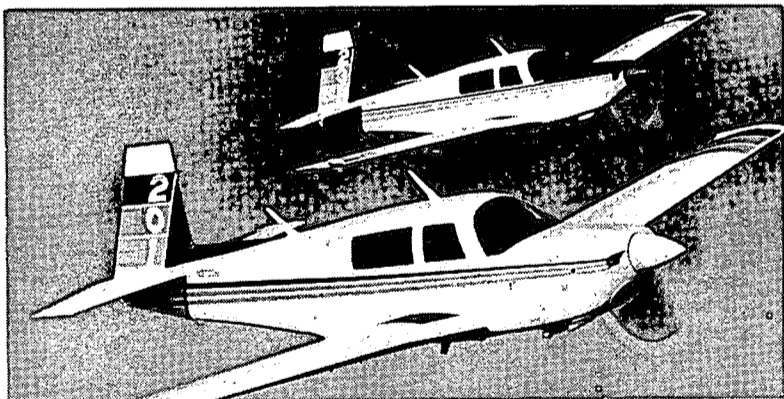
But, when insurance rates go up, when someone we know dies or is seriously injured, then it is another story. Furthermore, General Aviation cannot exist without support from the public in general. Uncertificated pilots or those who run out of fuel and crash on city streets do not make for good publicity. All of us are tainted by such occurrences.

What can you do about it? A great deal. If you see an unsafe operation, talk to the pilot. If you don't want to talk to the pilot directly, contact an Accident Prevention Counselor. Most FBO's have one, know who is one, or your local FAA-Fargo FSDO can tell you the name of one in your area. If you feel that the matter is serious enough, contact the FAA Accident Prevention Specialist at the Fargo FSDO. That's what he's there for.

The great majority of pilots who are involved in unsafe operation do so out of ignorance. A friendly conversation may be all that is really necessary to straighten them out. But, there are a few who will either "do their own thing" regardless of any consequences to others, or are so afraid of flying that they overcompensate with macho exhibitionism. Remember, behind every senseless risk taker, behind every braggart full of tall stories and a history of reckless flying, may be simply a little boy who is afraid. Do we have to condemn him? No, but may be if you do get involved, you can help. Are you your brother's keeper? Only you can answer that.

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