

AVIATION NEWSLETTER

Vernon M. Beltzer, Editor

STATE OF NORTH DAKOTA



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August - September, 1972

COMMUTER AIR SERVICE SUCCESSFUL IN NORTH DAKOTA

Two commuter airlines initiated scheduled air service between Fargo and Minneapolis and between Bismarck-Jamestown-Fargo and Minneapolis, while Northwest Airlines' pilots have been on strike.

Flight Development, Inc., Fargo, N.D., during the four-week period from July 24th start-up to August 24th, boarded 500 passengers between Fargo and Minneapolis and return using twin-engine Beech Barons, Aztecs and Beech D18 equipment, according to James A. Peterson, President.

Flight Development, Inc. schedules two round trips per day between Fargo and Minneapolis during week days and one round trip per day on Saturday and Sundays.

Pro Airlines, Inc., Sioux Falls, S.D., which received a common air carrier certificate from the State Aeronautics Commission to provide intrastate air service, inaugurated flights on August 7th, with three round trips per day between Bismarck-Jamestown-Fargo and Minneapolis during week days and one round trip per day on Saturdays and Sundays.

During the first two weeks between August 7 and August 21st, Pro Airlines boarded a total of 666 passengers at cities along the route. Pro Airlines had a 50% passenger load factor the first week and 75% load factor the second week, according to Curtis Shupe, President.

Pro Airlines is using 15-passenger Beech Model 99-260 mile per hour turbo-prop aircraft on two round trips per day and a 9-passenger Beech Model E18 on the third round trip per day.

Both commuter airlines combined, boarded a total of 1,166 passengers during the first few weeks of the emergency service. The passenger volume continues to grow. * * *

AIRPORT AID HIKE IN LIMBO

The Senate has passed legislation to increase federal aid payments for airports in North Dakota and the nation while outlawing airline passenger head taxes or boarding fees.

Mr. Vavra said the bill, which passed the Senate 82-2 makes it unlawful for any state or political subdivision to levy or collect passenger taxes or to levy and tax on gross receipts derived from passenger ticket sales on air transportation.

The legislation does not, however, prohibit airports from charging airline landing fees or other service charges for use of airports.

The State Aeronautics Commission supported the Senate bill because of increased federal participation in airport costs and because of a belief it will be the "sense of Congress" to outlaw passenger head taxes.

Following the Senate action, the House by a voice vote passed legislation which imposes an 18-month moratorium on all state and local taxes levied on airline passengers. While the House bill orders an investigation by the Civil Aeronautics Board, it does not provide increases or changes in present federal-aid subsidies for airports.

The Senate bill provides: 1. Increases matching from 50 to 75 percent of construction costs of both airline and general aviation airports, except for 22 of the nation's hub airports. 2. Provides for 50 per cent federal share of costs of public use areas such as passenger terminal buildings; (at present there is no federal money available for this purpose) and 3. Increases initial federal share of land acquisition costs for future airport development to 100 per cent.

The question of airline boarding taxes, common in Europe, developed after the U.S. Supreme Court recently declared that such head taxes imposed by the State of New Hampshire and Evansville, Indiana Airport Authority did not violate the U.S. Constitution nor was there any federal law prohibiting such taxes.

Following the court's ruling, a number of cities imposed boarding fees of \$1. except for Philadelphia which hiked its airport departure tax to \$3. and eliminated its deplaning tax of \$2.

99'S TO HOLD NORTHWEST SECTION CONVENTION IN BISMARCK SEPTEMBER 7 - 10, 1972

The North Dakota Chapter of the Ninety-Nines or (99's short title), a national organization of licensed women pilots, will host the Northwest Section Convention at the Holiday Inn Motel, Bismarck, N.D. September 7th through the 10th, 1972. States comprising the Northwest Section are Alaska, Idaho, Montana, North Dakota, Oregon, South Dakota, Washington and Wyoming.

The North Dakota Chapter is a relatively new Chapter receiving it in September of 1970 with the following women as charter members: Audrey L. Baird, Elizabeth Banker, Florence Crawford, Mitzi Dahle, Helen Hurley, Lois Lange, Beth Lucy, Geneva Oleson, Eleanor Pietsch, Lorraine Smith, Katherine C. Vogel, Ivy Walter, Mattie L.L. Weber and Betty Woodward.

Highlight of the affair for the general public who are invited to attend will be the banquet Saturday evening with James W. (Pete) Campbell as speaker, who many an instructor and others will remember as the man with the loud voice and team Captain of some of the first Instructor and other clinics held in North Dakota. Pete Campbell has moved from the Oklahoma City Air Academy to a position in Washington, as Director of the FAA Aviation Safety Program. Tickets will be \$7.50 each, which includes everything from the social hour on, starting at 6:00 p.m. Saturday and concludes with entertainment and dancing. For tickets contact the following: Helen Hurley, Minot, tel: 839-5717; Audrey Baird, Dickinson 225-5271 or 225-2271; Beth Lucy, Jamestown, 252-4020; Lou Weber, Bismarck at 223-6862 or 223-4265; Kay Vogel, Bismarck, 224-3475 or 223-4280, also Betty Banker Mohall and Betty Butz at Carrington, N.D.

The complete agenda which includes many other activities besides meetings follow:

Thursday, September 7, 1972
Arrival and Transportation to Motel - Informal Gathering

Friday, September 8, 1972

9:00 a.m. to 6:00 p.m.	- - -	Registration
9:00 a.m. - 12:00 Noon	- - -	Executive Board Meeting
12:00 Noon	- - -	Lunch on your own - Transportation furnished to shops, hairdressers, etc.
2:30 p.m. - - - - -	- - -	Leave Motel for River Boat rides to Ft. McKeen
4:00 p.m. - - - - -	- - -	Tour of Ft. McKeen and Museum
5:30 p.m. - - - - -	- - -	Board bus for trip to Horse Club Arena
6:00 p.m. - - - - -	- - -	Social Hour
7:00 p.m. - - - - -	- - -	Outdoor Barbecue
8:00 - 8:30 p.m.	- - -	Plainsmen (Western Chorus)
8:30 p.m. - - - - -	- - -	Horse Show
10:00 p.m. - - - - -	- - -	Transportation to Motel

Saturday, September 9, 1972

9:00 a.m. - 10:30 a.m.	- - -	Business Meeting
10:30 a.m. - 10:45 a.m.	- - -	Coffee Break
10:45 a.m. - 12:00 noon	- - -	Business Meeting
		Speaker: John Odegard
		Topic: N.D. University Aviation Program
12:45 p.m. - - - - -	- - -	Lunch at Holiday Inn
		Mary College Musical Group - N.D. Trilogy
		Slide Presentation by Bruce Wendt
2:45 p.m. - - - - -	- - -	Tour of Capitol Grounds and Building
4:00 p.m. - 6:00 p.m.	- - -	Free Time
6:00 p.m. - - - - -	- - -	Cocktail Hour and Dinner
		Live Entertainment
		Guest Speaker - Pete Campbell
		Dancing till

Sunday, September 10, 1972
Breakfast and Weather Briefing at Agrichemical Hangar

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CANADIANS LEARN FROM THE BLOODY YANKS - BORDER CROSSING NOW BECOMES COSTLY BOTH WAYS

Canadian Pilots as well as American Pilots, after years of being singled out and being discriminated against, as compared to the average motorist when crossing the boundary into the U.S., in being charged exorbitant fees for Sundays and Holidays, are now catching it going into Canada. According to information from Jack K. Daniels, Servair Accessories of Williston, who of course learned the hard way that you had better not cross before 9:00 a.m. or after 5:00 p.m., or you will have to pay a flat \$20.00 fee, Canadian money, for that special service, plus the transportation costs of the inspector getting to and from the aerodrome.

The larger terminals that are international airports such as Winnipeg, Edmonton and others, vary with their normal working hours of service, which could be up to 24. Remember this fee applies to a service charge to after normal working hours for that station. After October 31st, 1972, this fee will also be charged for clearance all day Saturday, Sunday and all Canadian Holidays. Canadian Holidays of course are not the same as those of the U.S., so if you have any doubt, check before you cross.

CARBURETOR ICE ACCIDENTS

National Transportation Safety Board urged FAA to take action against preventable carburetor ice accidents. In the five-year period between 1965 and 1969, there were 360 general aviation accidents in which carburetor ice was a cause or a factor. Of the 636 persons involved in the accidents, 40 died and 160 were injured. There were 47 aircraft destroyed and 313 substantially damaged. Carburetor icing is one of the "unnecessary" casual factors in general aviation accidents.

INDUCTION ICING:

We used to talk about carburetor icing in past years, but with all the modern fuel metering devices used today, a more up-to-date terminology describes this flight condition as induction system icing. The latter term includes all types of fuel metering (fuel injection as well as carburetion), and also the parts of the induction system where ice can accumulate such as the air filter or bends in the system, as well as the critical areas of the fuel metering device like the throttle plate in the float type carburetor.

If operators understand what happens when the fuel metering device (carburetor or fuel injector) injects fuel into the air being sucked in to the induction system by the engine as it operates, they can take suitable precautions to preferably avoid or eliminate induction system ice. But they also need to understand how the engine reacts when heat is applied to prevent induction icing.

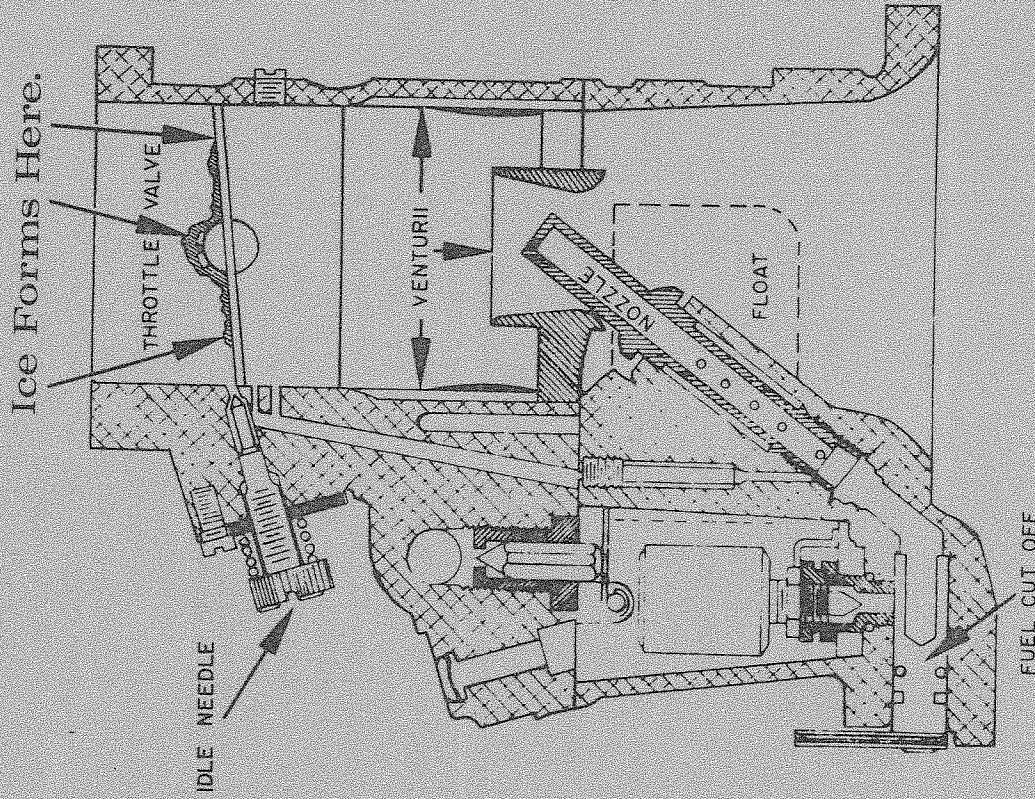
There are two types of induction system ice:

1. Impact ice - forms on the air filter and bends in system.

2. Refrigeration ice - forms in float type carburetor as result of fuel vaporization and low pressure.

THE FLOAT TYPE CARBURETOR AND ICING: Under certain moist (and "moist" is a key word here) atmospheric conditions, with air temperatures ranging anywhere from 20° to 90°F, it is possible for ice to form in the induction system. The rapid cooling in the induction system using a float type carburetor is caused by the absorption of heat from the air during vaporization of the fuel, and also due in part to the high air velocity causing a low pressure area through the carburetor venturii. As a result of the latter two influences, the temperature in the mixing chamber may drop as much as 70°F below the temperature of the incoming air. If this air contains a large amount of moisture, the cooling process can cause precipitation in the form of ice, generally in the vicinity of the "butterfly" or throttle plate, and may build up to such an extent that a drop in power output could result. If not corrected, ice accumulation may cause complete engine stoppage. Indications of icing to the pilot are a loss of RPM with a fixed pitch propeller and a loss of manifold pressure for the aircraft with a constant speed propeller, and the accompanying airspeed loss with both types.

Now the thinking pilot will anticipate possible icing and utilize heat before the ice forms. However, should he fail to anticipate icing with the float type carburetor and ice begins to form, he must definitely use the full heat position in order to be sure of eliminating the ice. Using full heat will initially cause a loss of power and possible engine roughness. Heated air directed into the induction system will melt the ice which goes through the engine as water, causing some of the roughness and more power loss. Therefore, unless the pilot knows what is actually happening, the stress and confusion of the situation will tend to frighten him out of using heat, and thereby could result in losing his engine to icing. But most of all, he must realize that despite this temporary roughness and attendant moderate power loss, the pilot is not damaging his engine at a cruise power of 75% or less with any amount of heat.



Float Type Carburetor

RELATED FACTORS WHEN USING CARBURETOR HEAT: When using heat, there are related factors or influences to remember. The engine loses an average of 9% of its power when full heat is applied. There is also power loss by going from ram air to the more indirect heat location. Carburetor heat or alternate air also creates a richer mixture which may cause the engine to run rough, particularly at full heat. If there is any throttle available, bring the power up at least to the former amount. The mixture should be adjusted lean (at cruise power or less) whenever heat is applied. Furthermore, any application or removal of heat would call for an appropriate adjustment of the mixture during cruise. At lower power conditions such as required during flight in the traffic pattern, it may be impractical to lean the mixture. Do not use heat for takeoff or climb on Avco Lycoming engines as it may bring on detonation and possible engine damage. An exception to the latter might be in the severe temperatures of the Arctic which calls for a special knowledge.

If you are wondering how long to continue the use of heat, it would depend on the severity of the icing condition. If icing happened to be severe, then heat should be used as long as flight continues in it. We have found in our flight tests on various models of Lycoming engines and with special detonation pickups, that at cruise power with full heat or alternate air, we have never experienced detonation or damage to the engine. If this is difficult to believe, a turbo-charger heats the induction air hotter at altitude than the typical carburetor heat or alternate air, without causing any detonation or damage to the engine. The principal concern of the pilot under icing conditions is not the possibility of detonation from the heat at cruise power, but rather to keep the engine running no matter how much heat is required. In known or suspected icing conditions, follow the instructions in the airplane owner's manual. If the airplane does have an induction air or carburetor air temperature gauge, the thinking pilot who anticipates the possibility of induction ice can prevent it by maintaining a minimum of 90°F in heat during cruise and letdown. However, if the pilot fails to anticipate icing, an undetermined amount of heat may be required to eliminate it if he has permitted it to accumulate. Any aircraft without an induction air gauge must use either the full heat or full cold position, as an unknown amount of partial heat can actually cause induction ice in the float type carburetor, particularly where there is moisture in crystal form in the incoming air that would ordinarily pass through the induction system without any problem. Partial heat melts these crystals and they form carburetor ice in the venturi when they come in contact with the cold metal of the throttle plate. At a temperature of 140°F or below, any moisture in the air is frozen and heat should not be used.

The foregoing article is a reprint from AVCO Lycoming "Flyer" which will be continued next issue.

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FLYING FARMERS CONVENTION AT BISMARCK - SEPTEMBER 29 TO OCTOBER 1ST

The North Dakota Flying Farmers Association have scheduled their annual convention at Bismarck at the Holiday Inn on September 29 to October 1st, according to Arlyn Kraft, Mapleton, President.

The Flying Farmers will celebrate the 25th anniversary of the founding of the North Dakota Chapter, which was organized at Bismarck in the year 1947 and held its first convention at Bismarck that year. Leland Brand, Taylor, N.D. was the first President of the N.D. Flying Farmers Association.

Invitations have been sent to all past presidents and queens of the North Dakota Flying Farmers, who will be honored at the annual banquet on Saturday night, September 30th.

Duane Rau, Medina is Chairman of the Convention Committee; Francis Simmers, Jamestown, Chairman of the program committee; Mrs. Joyce Anderson, Forman, Chairwoman of the banquet committee; Ward Whitman, Robinson, Chairman of the transportation committee; Mrs. Ward Whitman, Chairwoman of the registration committee and Bill Grieve, Buffalo, Chairman of the door prize committee.

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FUTURE TOWER FREQUENCY CHANGE FOR FARGO FAA CONTROL TOWER

Dwain R. Hammond, Chief, Fargo FAA Control Tower announced that in order to resolve a frequency interference problem between the Fargo tower local control (118.3 MHz) and Winnipeg, Canada control tower, a frequency change is necessary. In late October or November, the existing 118.3 MHz frequency at Fargo Tower will be changed to 118.6 MHz. Additional notices will be disseminated when a definite date for the change is established.

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DEVILS LAKE, N.D.: "The Enterprise line at Devil's Lake has been discontinued. A Foreign Exchange line - Number 662-5471 has been established. Pilots can dial direct for toll free service for flight planning and pilot briefing to the Grand Forks FSS."

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INSTRUCTOR REFRESHER COURSE TO BE HELD -- The annual flight instructors refresher and recertification course will again be held this year on December 12, 13 and 14, 1972 at the University Bowl, University of North Dakota, Grand Forks, N.D., for the convenience of those wishing to validate their certificates. Additional information will be supplied in the next edition of the Newsletter.

AVIATION IN NORTH DAKOTA DECEMBER, 1934 OR 38 YEARS AGO

The following is a reprint from a flying Magazine called "Western Flying" which was published in Los Angeles, California. Robert Nelson, Pilot for the N.D. Game and Fish Dept. supplied the magazine from his private collection, which makes very interesting reading for some. At this time, we are also reprinting the only reference made about Minnesota, which refers to Max Conrad, who of course is well known in North Dakota.

Beach: Department of Commerce Inspector Lester Orcutt paid a visit to local fliers recently. The object of his visit was to become acquainted with student fliers that have started up in the last year. Harris Gilman flew to Dickinson where he traded his Velie Monocoupe for the long nosed Eagle owned by Hank Abberson. Harris is well pleased with his bargain and flies the new ship well.

While in Fargo recently, Jack Hardy idled out to Hector field, grabbed a parachute, jumped into Dan Carver's Hisso Eaglerock, proceeded to spin, spiral and spot land for the approval of Lester G. Orcutt, D.C.I. Jack now flashes an L.C. around with the greatest of ease. You can look at it if you want to.

E.M. Canfield of Williston flew a hunting party from Fargo up into Canada in his Lycoming Stinson. Ed makes a similar trip each year.

Titus Ritchards of Central Airways in Fargo is the proud owner of a new Waco Cabin, which he demonstrated to R.R. Halstead of Beach. Roy says the new ship looks and is good.

I know of some people around here who think Frank Spizla was just spiszling when he said he was going to get a "ship".

Johnny Osterhouse of Mandan, pilot for Charles Towers has built a cabin, a la Dan Boone, on the Mandan airport, wherein he and his mechanic may dwell for the winter. Johnny recently made a trip to Cleveland, Ohio from which point he flew a J69 6-place Travel Air to Mandan, where he flies it commercially for Towers who bought it. Towers also purchased the Hisso Travel Air from Martin Schow of Stanton.

Minot: Cecil Shupe of Port O' Minot is rebuilding a Great Lakes Trainer, which he bought in Wyoming. When he puts the finishing touches on it, he will use it for training. Port o' Minot has another Stinson flying around. Tommy Lee purchased it way down in Illinois and Ed Schrow flew it up for him. Ed's Ryan is still in the repair room and will probably not be in the ozone till the robins return to our cloudless skies.

There is something about aviators that seems to lure them into the wilds occasionally. So many pilots are big game hunters that one should be able to make some simple equation about them like "all pilots love big game" or "big game seems to fall for pilots" or some such nonsense. Nevertheless, among the big game hunters in this section, one finds many familiar pilot friends. Dan Carver, aerial weather observer at Fargo, N.D. and Clyde Watkins, student pilot at Fargo, killed their moose in the wilds of Ontario. Guy Miller of Winner, S.D. and his brother Clarence Miller of Valentine, Neb., both Stinson pilots, went elk hunting in Wyoming. Ed Canfield has taken several loads of hunters up to his cabin in Northern Canada. There they stalk the unwary moose. Ed's fingernails were nearly ruined in Minot while he and three hunters patiently waited for weather conditions to clear up so they might get to their hunting grounds.

Clyde Ice is now at Watertown, S.D. where he is flying a 300 Travel Air for Watertown Air Service. They contemplate establishing a route from the Twin Cities to Rapid City, S.D.

Bill O'Neill of Fort Shaw, Mont. flew his Stinson to Sioux Falls where he passed his tests for L.C.

Mr. Manley and Dr. Lloyd of Mitchell, S.D., both passed their tests for private pilots in their Fairchild trainer.

Williston: Ben Myrhe of Williston Airport fame has sold his Monocoupe to Wesley Rupp of Wahpeton, N.D. Wesley has since taken his transport tests and now transports around and about.

Bill Fallen and Titus Richards of Fargo, N.D. spent a few days in Williston. Fallen is flying his new Waco C with Jacobs motor.

Winona, Minnesota: Max Conrad, Jr., of the Conrad Flying Service, Winona, is doing private flying at the University of Notre Dame. His landing field is right on the campus, adjacent to the stadium. Several of the priests are enthusiastic passengers on short hops. On a recent trip to his airport at Winona, Minn., Mr. Conrad took his two-year-old daughter Judy, as co-pilot. She handled the navigation very capably, and is a seasoned air traveler. He is making trips to the Notre Dame games away from home with loads of ardent N.D. football fans.

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NEWSLETTER MAILING LIST TO BE PARED OF DEAD WOOD

Unless you are currently registered as an airman, mechanic or have some other certificate, your name will be removed from the N.D. AVIATION NEWSLETTER mailing list, by the office staff in their yearly purge. So if you don't want to be classified as dead wood, send in that \$1.50 if you are a Student or \$3.00 if you are private, commercial or mechanic, and get yourself registered and legal, if you are flying.

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ACCIDENTS - continued

Pilot: Harold E. Finley, Oberon, N.D.

Time & Place: June 29, 1972, 8:55 a.m., Maddock, N.D.

Pilot Time: RATINGS - NONE

Aircraft & Damage: Champion, Right wing, left wing, fuselage, prop, landing gear left elevator and stabilizer damaged.

Pilot Statement: Aerial crop spraying east & west. Power line on east end of field, made normal spray run to east. Pulled up and made procedure turn around, making 1st down into field over power line. Left landing gear caught power line. Power line pulled aircraft into ground. Aircraft hit ground flat, left wing dug in, then airplane cartwheeled.

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Pilot: Erik Kristensen, 310 - 20th St. N.W., Minot, N.D.

Time & Place: July 2, 1972, 3:26 p.m., Minot International Airport

Pilot Time: Private, SEL, 90 TT, Age 33

Aircraft & Damage: Piper PA-18 - Damaged landing gear, wing, prop.

Pilot Statement: On final runway 30, undershot the runway, added power too fast which caused the engine to flood, causing the plane to land short of the runway.

Pilot Recommendation: Higher airspeed

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Pilot: Pete Marinucci, 301 Broadway, Fargo, N.D.

Time & Place: July 22, 1972, 2:45 p.m., Kindred, N.D.

Pilot Time: Private, SEL, Sea, 214 TT, Age 27

Aircraft & Damage: Cessna 120, damaged wings, struts, fuselage, bent motor mount, prop.

Pilot Statement Condensed: Pilot taxied into a low spot filled with water, applied additional power and overturned on its back

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Pilot: William M. Grocock, Box 277, Tisdale, Saskatchewan

Time & Place: August, 1972, 10:20 a.m., Jamestown, N.D.

Pilot Time: Private, 438 TT, Age 48

Aircraft & Damage: Piper PA-20, Damaged right wing and undercarriage

Pilot Statement: Landing approach and touch down, aircraft veered to left, turning completely around.

Pilot Recommendation: Approach glide not constant, airspeed on high side.

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Pilot: Thomas J. Marsh, Fargo, N.D.

Time & Place: July 2, 1972, 1725, 4½ miles South of Oakes, N.D.

Pilot Time: Private, ASEL, 234 TT, Age 35

Injuries: FATAL

Aircraft & Damage: American AA-1A, Aircraft totally demolished.

Investigation Revealed: Shortly after departure, witness stated he looked up and saw the aircraft at low altitude in a spin, just prior to impact.

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CANADIAN AERIAL APPLICATORS OF AGRICULTURAL CHEMICALS

The Canadian Government has released a report on the Canadian National totals of licensed aerial applicators of agricultural chemicals in Canada for the 1970-1971 year as follows:

<u>Number of Commercial Aerial Applicators</u>	<u>Total Number of Commercial Fixed Wing Ag Aircraft</u>	<u>Number of Rotary Wing Ag Aircraft</u>
99	183	36
<u>Number of Private Aerial Applicators</u>	<u>Total Number of Private Fixed Wing Ag Aircraft</u>	<u>Number of Rotary Wing Ag Aircraft</u>
109	120	2

This includes licenses issued by the Canadian Government (DOT) in the Canadian Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec and the Maritimes. Some of these aircraft are also used in the forestry aviation industry.

During this period, there were a total of 303 fixed wing licensed Ag aircraft and 38 rotary wing ag aircraft licensed in all of Canada.

The agricultural provinces of Canada, during the average growing season, produce about 5 times the total bushels of spring wheat compared with North Dakota.

During the 1972 season in North Dakota, the Aeronautics Commission licensed 175 commercial applicators and 7 private applicators for a total of 182 operations with a total of 266 fixed wing aircraft. From these figures, it would appear that there should be ample opportunity for Ag Aviation growth in Canada in the years to come.

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FOR SALE: 1972 American Trainer TR-2, red with white trim; 1971 American Trainer, red; 1971 Mooney Chaparral, blue & white; 1971 Mooney Chaparral; 1971 Mooney Executive, red, white, blue; 1971 Mooney Ranger, red & white; 1970 Cadet, gold & white; 1969 Mooney Executive, green & white; 1969 Mooney Statesman, green & white; 1968 Aero Commander Darter, 4-place; 1968 Aero Commander Quail spray plane; 1972 American Traveler 4-place; 1968 Mooney Ranger, blue & white; 1972 Champion Citabria; 1964 Super Mooney 200 hp fuel injected; 1972 American Traveler, yellow, new, 150 Lycoming; 1967 Mooney Executive, red & white, Lycoming. Pietsch Flying Service also has a complete radio repair shop open operated by Harold Wengel. Contact Pietsch Flying Service, Minot International Airport, Minot, N.D. 58701, tel: 701-838-4092. * * *

FOR SALE: 1968 Twin Comanche 1700 TT, Dual MK12A's, 360/90 channel with dual VOA-4 omni, ADF 31, 3 lite marker, auto control III egt, new propellers; 1957 H Bonanza 2000 TT, 800 SMOH, new overhauled propeller by Maxwell, MK-12-90-VOA-4, MK 5-VOA-4 ADF, B-1 constant co-pilot, new interior, fresh license; 1972 Arrow II, King 170 with 201 omni, radio coupler, auto control III, 35 amp battery, overhead vents, external power; 1970 Cherokee 140, 1015 TT, MK 12B VOA-4, full panel, four place, new paint, wheel pants; 1971 U-206 Cessna, 925 TT, Dual Nav Com 300-360 channels with glideslope, 3 blade propeller, like new; 1965 225 Debonair, 1850 TT, 300 SMOH, MK 12A 360 VOA-4, T-12C ADF, B-1 constant copilot, magic hand gear, new paint; 1959 Apache, 2800 TT, 1290 SMOH, MK 10, VOA-4, MK 5, VOA-4, ADF, 3 lite marker beacon, transponder, 2 axis auto pilot; 1972 Seneca Sportsmans group, 7th seat,

NORTH DAKOTA AERONAUTICS COMMISSION
BOX U
BISMARCK, NORTH DAKOTA 58501



FIRST CLASS

Margaret Rose
Historical Society
Liberty Memorial Bldg.
Bismarck, N.D. 58501

External power, dual King 170's, glide slope and coupler, King 85 ADF, King 60 DME, King 85 Transponder, King 3 lite marker, King selector panel; 1962 Cessna 210B 1500 TT, 250 SMOH, MK12A-VOA 5 with glide slope, MK-3, T-12B, Mitchell 3 axis auto pilot, 3 lite marker beacon; 1968 Cherokee 140, 2400 TT, 250 SMOH, MK12-VOA-4, four place, new paint; 1961 Aztec 2000 TT, 550 & 750 SMOH, MK12B, MK12, Dual Omni, ADF, AT-50, 3 lite marker, 2 axis auto pilot; 1968 Skylane, 860 TT, MK-12B, VOA-40, Nav Com 300, full panel, wheel pants, like new in and out. 1972 Aero Commander 112's and 111's. We are authorized dealers for the new family of Low Wing Aero Commanders. Order now for fall delivery. Price sheets on request. We pay top cash prices for clean airplanes, single and twins. Contact Commander Aviation Corp. Box 1014, Bismarck, N.D. 58501, Tel: 701-223-6862, after hours 223-3388. * * *

FOR SALE: 1968 Mooney Ranger, turbo, 1 MK-12, 1300 TT, perfect condition; 1971 Cessna Skyhawk, 600 TT, red & white; 5 Cessna 150's, ranging from \$6200 to \$9500. Contact Aero Flight, Inc., Box 1808, Minot, N.D. 58701, Tel: 701-838-4259. * * *

FOR SALE: 1972 Cessna Skyhawk, 499 TT, complete 360 channel, NAV-COM 300, ADF, dual controls, NAV lights detectors, ground service plug, heated pitot, omni flash beacon, 2 courtesy lights, primer system, articulative vertical adj., left seat only, alternate static source, ventilation system, rear seat, windows all tinted, new annual. Contact Capital Aviation Corp., Box 1471, Bismarck, N.D. 58501 or tel: 223-0260 * * *