With registration starting Wednesday, January 19th, 1977 at 10:00 at the Kirkwood Motor Inn, Bismarck, N.D., a busy 4 days will face many of North Dakota aerial applicators as they become recertified in restricted chemicals and also attend the N.D. Aviation Association annual convention.

Billed as a joint function, the chemical certification seminar portion is sponsored by the N.D. Aeronautics Commission and the North Dakota State University and deals with training of the safe handling and proper application of restricted chemicals as they pertain to arial application. The seminar is to start Wednesday the 19th at 1:00 p.m. and run through Thursday morning cumulating in an open book testing session.

Airport managers of the State of North Dakota have been invited to a panel discussion on the problems associated with using air carrier airports by the general public in the areas of security on Friday morning the 21st.

The Air Taxi Fixed Base Operators group will meet separately from the aerial applicators on Friday afternoon to discuss problems attendant to those phases of the industry. The meeting will also be covering the position of the Federal Aviation Administration on the rewriting of the Air Taxi Rules.

Webster D. Todd, Chairman of the National Transportation Safety Board will be present at the upcoming annual meeting of the N.D. Aviation Association. Mr. Todd has accepted an invitation from the Executive Secretary of the N.D. Aviation Association, Jack K. Daniels, to address the banquet of the Association on January 21, 1977.

Mr. Todd was an assistant to the Chairman of the Civil Aeronautics Board, special assistant to the President for the Council on Aging, and moved into the Chairmanship of the National Transportation Safety Board recently, being appointed by President Ford.

Todd is no stranger to the aviation industry, having owned a FBO and having run a commuter airline prior to entering government service. He speaks in down-to-earth terms that we in the Midwest can understand. He plans on discussing the work of the NTSB in the area of aerial application of agrichemicals and air taxi operators, and what the NTSB is going for in enhancing safer operations for those in the industry.

In making the announcement, NDAA Secretary Daniels expressed his feelings of gratitude that Chairman Todd has accepted the invitation.

The detailed agenda follows:

**WEDNESDAY, JANUARY 19, 1977:**

10:00 a.m. to - Registration for both Restricted Chemical Seminar & N.D. Aviation Association  
1:00 p.m. - Kirkwood Motor Inn, Bismarck, N.D.  
1:00 p.m. to - Joint N.D. State University and N.D. Aeronautics Commission sponsored  
5:00 p.m. - Restricted Chemicals recertification Seminar

**THURSDAY, JANUARY 20, 1977:**

8:30 a.m. to - Continuation of Restricted Chemicals Seminar and aerial applicator certification (Open Book Testing)  
12:00 Noon - Lunch  
2:00 - 3:00 - Industrial presentation  
3:00 - 3:15 - Coffee Break  
3:15 - 5:30 - N.D. Aviation Association First Business Session  
6:30 - 9:00 - Poolside Social

**FRIDAY, JANUARY 21, 1977:**

7:30 - 9:00 - Industrial Breakfast  
9:30 - 10:00 - Aeronautics Commission Reports  
10:00 - 10:30 - Airport Managers panel  
10:30 - 10:45 - Coffee Break  
10:45 - 11:30 - Safety Seminar  
11:30 - 12:00 - Executive Secretary remarks  
12:00 - 1:30 - Luncheon, Richard Backus - House Floor Leader  
2:00 - 3:00 - N.D. Sales & Use Tax - Application of Guidelines - Walt Stack, Tax Dept.  
3:00 - 3:15 - Coffee Break  
3:15 - 5:30 - Aerial Applicators Session & Fixed Base Operators Session  
6:30 - 7:30 - Social Hour  
7:30 - Annual Banquet, Vincent Cartwright, Pres. Master of Ceremonies  
Flight Instructor of Year Award; Mechanic of the Year Award  
Webster D. Todd, Chairman, National Transportation Safety Board

**SATURDAY MORNING:**

9:00 to 12:00 - Final Business Session
TWO (2) AIRPORTS, POSSIBLY MAY BE BUILT WITHOUT AVIATION FUNDS

Economic Development Administration (LWP) Local Public Works Capital Development & Investment Program funds have been requested for 2 airports within North Dakota recently. For those of you who are not knowledgeable, this is some of the money that Congress pumped into the economy just before election and President Ford signed the bill. The avowed purpose is to create immediate jobs in the high unemployment areas of over 6.5% of which nine counties qualify in North Dakota. The State was allocated 1/10 of 1%, which amounts to roughly $17 million of which 70% is earmarked for Indian reservations and the 30% balance for other areas in the same counties.

Garrison and Rolla, N.D. have both applied for grants which will fund the projects 100% except for cost of the land. Garrison's Airport Authority proposes to buy 256 acres of land and construct thereon an Industrial Airpark, consisting of a NW-SE 60' X 3100' paved runway; a NE-SW 120' X 3500' turf and a 55 acre industrial section adjacent to the airport.

The construction of the airport and the laying of sewer and water mains are projected to cost $485,000 which is also the amount requested from the LWP funds.

The Rolla project consists of realigning the present NW-SE turf landing area more northerly and grading and extending northwesterly, a connecting taxiway and ramp apron are also to be constructed. The entire area is then to be hard surfaced with asphalt. Projected costs, not including land, are $255,000 which of course is also the amount requested from LWP.

If any funds are granted for these projects, construction must start within 90 days of the notification of the awarding of the grant, again in keeping of the making work concept.

AERONAUTICS COMMISSION STUDYING AIRPORT ON LAKE SAKAKAWEA

With the loss of Lee's Resort and the convenience of the landing area at that facility, requests have been voiced for a landing area near the Dam site. Considerable exploration for alternate sites in cooperation with the Garrison Airport Authority were carried on. A few sites on the north shore of Lake Sakakawea, located on private land, were suitable, but would have necessitated the taking of land from landowners that had lost considerable land to the Reservoir. It was then decided to try for land owned by the Government.

On the north side of the Reservoir, a suitable site from the standpoint of an airport, could have been built on the Douglas Creek camping and recreation area, but it is 18 miles from the City of Garrison, which would have resulted in rather a remote site. Coupled with this drawback, it is doubtful if permission to build in a semi-developed camping and recreational area could be secured.

The next areas to be studied were located on the south shores and six possible sites were scrutinized. Of the six, three were located on Government land and three on private land.

Since economics are a factor in all projects, the study concentrated on the sites on government land. Of the three, the one chosen just west of the Girl Scout Area lent itself to a very suitable site for an airport, for quite a few reasons, among a few being: 1. Undeveloped area, no relocation problems. (2) Accessible by fair roads. (3) Area large enough for a main NW-SE runway of 3400 ft., also a crosswind SW-NE of 3000.

From preliminary studies, it would appear that the first phase of construction would be grading of a turf landing area and paving to be a future phase, if traffic warrants.

Before any construction could possibly start, an Environmental Impact Statement must be prepared and submitted through the State Clearing House for what is known as the A-95 clearance. It is the intent of the Aeronautics Commission to submit a preliminary draft of the Environmental Impact Statement to the Governor's Council on Human Resources for their review and comments before the first statement is prepared.

The aviation community is invited to stop in anytime at the Aeronautics Commission offices and make known their views.

NOTICE FROM THE EDITOR

The Newsletter is not published on a fixed calendar basis. When sufficient material has been gathered and the work load permits, we try and have a mailing bimonthly, so don't become alarmed if it seems like a long time in between issues.

We have also gone to bulk rate mailing with this issue, to save a substantial amount of money. The undesirable feature of bulk rates is that undelivered Newsletters are destroyed instead of being returned to our office, which would alert us to an address change. If you should move, please advise us, as we have no means of knowing of your address change or even of the fact that you have moved.

FOR SALE: Cessna 170B, Fresh major on engine, new Cormor paint, new interior and new radio. Contact Dick Cole, Tel: 228-3740 airport or 228-3740 home, Bottineau, N.D. 58318
SAFETY AND ACCIDENT PREVENTION TIPS BY MICHAEL G. BEIRGER, CHIEF, ACCIDENT PREVENTION PROGRAM, GADO #

ICE, A THREE LETTER WORD FOR WATER: It has been said, "there are two kinds of pilots . . . those that have flown in ice . . . and those that will!" Ice is not an uncommon thing for a pilot to encounter. It's another important realm of flight to know and understand.

Generally, the most severe icing an aircraft will encounter will be below 12,000 feet MSL, and around 32 degrees F. Ice is weight. A general aviation flight twin can quickly put on as much as two or three cubic feet of ice (150 pounds) in LIGHT icing conditions. At an ounce of ice per drink, that's enough for a party of 2,400 people.

Weight, however, is not the real culprit of Ice. The real culprit is DRAG — interruption of airflow. As ice builds up on the wings or props, the smooth flow of the air over the airfoil is interrupted. The airfoil becomes more and more inefficient and finally is stalled — even with maximum power applied to the engines.

When your first start to get ice, start working to get out of it — and that generally means a different attitude. Very often, a change of 1,000 feet can make the difference between severe icing conditions and no icing conditions.

Do not attempt to fly into icing conditions unless your aircraft has all the required anti-icing equipment. Even then, use that equipment only to get yourself out of the icing situation.

FROZEN PITOT TUBE: Pitot tube freezing is a potential threat to flight safety in winter. Blockage of the pitot head or the drain holes by ice can produce erroneous airspeed readings which have led to serious accidents. Pitot heating should be used during take-off and throughout flight if weather conditions are conducive to pitot tube icing (clouds, visible moisture, etc.). Pilots should be alert to false readings that indicate blockage of the system (stationary airspeed following power change in level flight, increase airspeed during steady climb, or decrease during descent). Pitot heat, when available, should be checked during the preflight inspection.

THOSE BFR'S: Are you due a biennial flight review (BFR) again? If you got yours when the requirement went into effect in November of 1974, then chances are you need another one now. Check that logbook and see if you have had a BFR within the past 24 months.

G. A. SURVEY IS OUT

The FAA has released the results of a survey on general aviation activity conducted by FAA and the Civil Air Patrol. Results of the study indicate that 542 of the pilots interviewed during the two-day survey in August 1975 filed flight plans with the FAA on intended cross-country flights. Other results indicated that general aviation aircraft ownership breaks out with 40% owned by individuals, 27% by rental companies, and 33% by flying clubs. The remaining 17% were the property of businesses, institutions or government agencies.

The amount of traffic varied widely among non-tower airports. Usually there was more traffic at airports with paved and lighted runways. They averaged 66 operations per day. Those with paved but unlighted runways had an average of 55 daily operations, those with unpaved but lighted runways had 18 and those with neither paved or lighted runways had 10.

Pilots with Airline Transport Pilot Certificates averaged 551 flight hours per year and those with Commercial Certificates averaged 427. Private pilots were next with 143 hours on the average, followed by student pilots with 36.

For the 1975 fiscal year, it was estimated that general aviation aircraft consumed 409 million gallons of aviation gasoline and 393 million gallons of jet fuel. Nearly 1,000 Civil Air Patrol volunteers participated in the study which was designed to gather useful information on general aviation flying in the United States and the resulting impact on FAA operations. (From American Association of Airport Executives)

AIRCRAFT VANDALISM AT CARRINGTON

Senseless and deliberate vandalism upon a pressurized Navajo owned by Steve Reimers of Carrington was discovered November 20th. The hangar was broken into and over fifteen thousand dollars worth of damage was caused by the vandals who used a claw hammer to break the heated windshield plus other cabin glass, instruments and dented the fuselage. The North Dakota Crime Bureau and the Federal Bureau of Investigation are working on the case.

** OBLIQUE WING FLIGHT TEST **

We have "fixed wing," "rotary wing" and "lifting body-type pilots"; someday, we may have an OBLIQUE WINGER added to the list. In the future, a pilot might check that his wings are level and find that his righthand wing tip has crawled up in front of the cockpit, while his left wing tip is back around the tail surfaces somewhere. His airplane will not likely be bendable, but probably will be flying an OBLIQUE Winger.

Dryden FRC and Ames Research Center teamed up on a program to build and test-fly a vehicle to examine the oblique wing concept. Slats and slats on the leading edge, flaps of all kinds on the trailing edge, swept wings and swing wings have all been successfully tried as a means for altering the aerodynamic cord of wings without affecting the structural chord. Their little airplane has a 22-foot span and a 90 hp piston engine. It can pivot the wing in flight from the normal 90-degree position to 45 degrees. It will be piloted remotely from a cockpit on the ground. It appears that Dryden/Ames have devised a means for testing concepts which are economical in monetary cost and do not expose a test pilot to unknown hazards.
Cloud seeding may also be carried out by releasing dry ice or silver iodide aerosols. This is done to promote the formation of cloud droplets, which then grow larger and eventually fall as precipitation.

However, it is important to note that the effectiveness of cloud seeding varies depending on the weather conditions and the specific method used. In some cases, the amount of precipitation that results from cloud seeding may be negligible or even non-existent.

It is also worth noting that cloud seeding is not a definitive solution to the problem of drought, and should be considered in conjunction with other measures such as water conservation and rainwater harvesting.

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* The information provided in this text is based on a limited number of sources and may not be comprehensive. Additional research is recommended to gain a deeper understanding of the subject.

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BOTTINEAU AIRPORT HAS NEW SHOP BUILDING AND FIXED BASE OPERATOR

Richard Cole, better known as Dick, formerly from Maine, has moved to Bottineau and will be the Fixed Base Operator there. Dick is retired from the Air Force, having spent 23 years there as a radio operator, electronics counter-measure technician and tail gunner. Cole, besides having his airplane and powerplant ratings, has a commercial single and multi engine with an instrument instructors rating. His wife Mary, nicknamed Kitty, is originally from Minot and they have two sons, James a teacher at Plaza and Kelly at student at UND. Kitty works as an accountant at Bottineau NSDU.

A 60' X 60' shop building was completed in October of this year and underground 80 & 100 Oct gas tanks installed.

Bottineau is to be congratulated on being able to secure a man of Dick's talents and everyone wishes him well.

BOTTINEAU AREA TRYING FOR AN ENTERPRISE TELEPHONE TO MINOT FSS

All aircraft owners who are served by the Bottineau telephone exchange are asked to contact Dick Cole at the Bottineau Airport. His telephone numbers are 228-3740-arpt and 228-3367. A total of thirty aircraft are needed to be able to secure a toll-free telephone line into the Minot Flight Service Station for weather briefings and to open and close.

19 NORTH DAKOTA AIRPORT PROJECTS WITH STATE-AID FUNDS COMPLETED IN 1976

A total of 19 airport projects with state-aid funds were completed in 1976 for which the Aeronautics Commission paid a total of $207,032.82 with a balance of $40,538 to be paid on these projects when they are submitted for a total 1976 state air aid program of $247,570.82. In addition, there are 12 new state-aid projects which have been allocated a total of $94,870 in state-aid funds, which will be completed in 1977. The list of 1976 completions follow:

<table>
<thead>
<tr>
<th>Airport Authority</th>
<th>Project</th>
<th>State-Aid</th>
<th>Year</th>
<th>State Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breckenridge-Wahpeton</td>
<td>Pave taxiway &amp; NDB Beacon</td>
<td>$3,104.00</td>
<td>1976</td>
<td>$3,150.00</td>
</tr>
<tr>
<td>Cooperstown Airport</td>
<td>Pave and extend runway</td>
<td>3,347.15</td>
<td>1976</td>
<td>16,652.85</td>
</tr>
<tr>
<td>Drayton Airport</td>
<td>Build new turf runway &amp; Lights</td>
<td>1,881.57</td>
<td>1976</td>
<td>793.43</td>
</tr>
<tr>
<td>Langdon Airport</td>
<td>Install Rotating Beacon</td>
<td>361.32</td>
<td>1976</td>
<td>000</td>
</tr>
<tr>
<td>Lakota Airport</td>
<td>Gravel &amp; surface runway, taxiway</td>
<td>10,000.00</td>
<td>1976</td>
<td>000</td>
</tr>
<tr>
<td>Leonard Airport</td>
<td>Pave runway, taxiway and lights</td>
<td>13,500.00</td>
<td>1976</td>
<td>000</td>
</tr>
<tr>
<td>Minot Int'l Airport</td>
<td>Surface runway</td>
<td>3,750.00</td>
<td>1976</td>
<td>000</td>
</tr>
<tr>
<td>Minot Int'l Airport</td>
<td>Expand airport terminal bldg.</td>
<td>50,000.00</td>
<td>1976</td>
<td>000</td>
</tr>
<tr>
<td>McClusky Airport</td>
<td>Build new turf airport</td>
<td>8,936.35</td>
<td>1976</td>
<td>1,563.65</td>
</tr>
<tr>
<td>Mohall Airport</td>
<td>Pave runway, taxiway and lights</td>
<td>10,000.00</td>
<td>1976</td>
<td>750.00</td>
</tr>
<tr>
<td>Mott Airport</td>
<td>Pave runway and light</td>
<td>15,000.00</td>
<td>1976</td>
<td>1,500.00</td>
</tr>
<tr>
<td>Park River</td>
<td>Pave runway and apron</td>
<td>10,000.00</td>
<td>1976</td>
<td>10,000.00</td>
</tr>
<tr>
<td>Parshall Airport</td>
<td>Seal runway and apron</td>
<td>8,000.00</td>
<td>1976</td>
<td>000</td>
</tr>
<tr>
<td>Rolette Airport</td>
<td>Pave runway and apron</td>
<td>13,250.00</td>
<td>1976</td>
<td>000</td>
</tr>
<tr>
<td>Rugby Airport</td>
<td>Runway pavement overlay</td>
<td>20,000.00</td>
<td>1976</td>
<td>000</td>
</tr>
<tr>
<td>Walhalla Airport</td>
<td>Pave apron</td>
<td>6,500.00</td>
<td>1976</td>
<td>000</td>
</tr>
<tr>
<td>Williston Int'l Airport</td>
<td>Airport Fire Station &amp; Misc.</td>
<td>14,605.00</td>
<td>1976</td>
<td>000</td>
</tr>
<tr>
<td>Watford City Airport</td>
<td>Seal runway and taxiway</td>
<td>13,871.93</td>
<td>1976</td>
<td>6,128.07</td>
</tr>
<tr>
<td>Wyndmere Airport</td>
<td>Build new turf runway</td>
<td>925.50</td>
<td>1976</td>
<td>000</td>
</tr>
</tbody>
</table>

In addition the Aeronautics Commission has made firm allocations of state-aid funds of $94,870 for 12 additional airport projects at Arthur, Bismarck, Ellendale, Harvey, Hillsboro, Lake Williams Township, Elgin, Minto, Northwood, Oakes, Linton and Bowman which are expected to be completed in 1977.

SEEKING EMPLOYMENT: Phan Van Loc, age 38, married, a student at the University of North Dakota in 1975 and 1976 and who also attended the University of Saigon, South Vietnam, is seeking employment in aviation. He holds an FAA commercial, instrument, single and multi-engine ratings. He has a total of 6,000 hours flying time, including 5800 hours DC-3 time, 200 hrs. in T-28 and time in Cessna 172, 150, Twin Comanche and Cessna 318. Fourteen years in Vietnamese Air Force including 7 years DC-3 instructor pilot, experience as flight training officer in Air Transport Squadron 1969-72. Holds senior wing certificate from U.S. Air Force and awards from the South Vietnamese Armed Forces. He is highly recommended by the Aviation Department of the University of N.D. Phan Van Loc may be reached for an interview at 78 Brannon Hall, University of N.D., Grand Forks, N.D. 58201. His telephone at Grand Forks is 701-777-3163.

SEEKING EMPLOYMENT AS APPRENTICE SPRAYING PILOT: Seeking employment during the 1977 aerial spraying season as apprentice commercial Ag pilot. Contact Thomas (Tom) Sjule, Souris, N.D. 58783, Tel: 228-3444.

FOR SALE: 1974 Ag Truck automatic flag, Hyd system, manual valve, heater and windshield defrost, filter, 525 TT. Contact Minn-Dak Aviation at 218-478-3586 or 218-455-3304.

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