The following bills have been introduced in the 1975 Session of the North Dakota Legislature relating to aviation:

House Bill No. 1477 - Permits any person that furnishes farm chemicals, fertilizer or does custom aerial application of agricultural chemicals for a farmer, to have a lien upon the crop produced as security. The bill passed the House and was reported out of a Senate committee to be killed. Committee report was reversed on the Senate floor vote. This bill is now up for a final vote.

House Bill No. 1506 - Appropriates $63,000 for a state-wide Phase one Commuter Airline basic needs assessment study to determine whether there is a basic need for a state-wide commuter airline system. Phase two study appropriates $121,300. In Federal funds which will specify the N.D. cities to be served and overall financial aspects of a commuter air service system. Phase two study will make a recommendation to the 1977 Session of the legislature whether a demonstration commuter airline system should be undertaken. The bill passed the House.

House Bill No. 1549 - Enacts an additional 2% excise tax on the sales price of aviation gasoline used by aircraft with the proceeds to be used by the State Aeronautics Commission to match with secondary public airports for improvement projects. Passed the House.

House Resolution No. 3061 - Directing the N.D. Legislative Council to study commercial airline airports in North Dakota to determine the feasibility of coordinating their development so that the costs are shared by those who benefit from such development. Passed the House.

House Bill 1060 - Creates a state-wide weather modification program. Creates a weather modification board as a division of the North Dakota Aeronautics Commission. Provides state matching funds with county weather modification authorities and provides that the State Weather Modification Board shall let all contracts for weather modification, using state funds matched with county funds. The bill appropriates $654,760 for the two years beginning July 1, 1975 for hiring a professional staff and for state matching funds for providing assistance to county weather authorities. Bill passed the House and has been heard by the Senate Natural Resources Committee with a due pass recommendation.

Senate Bill No. 2060 - Provides for the licensing of pesticide dealers and all commercial ground and aerial applicators and certification of all applicators, including farmers, as to their knowledge of restricted use pesticides. Senate Bill 2060 is intended to comply with a federal law enacted by Congress which requires agricultural states to provide a certification program for use of restricted pesticides by all applicators. Passed the Senate and is being amended in the House.

Senate Bill 2061 - Amends the present state law relating to the requirement for claimants to file a report of loss through spraying by aircraft to make the law apply to all applicators of agricultural chemicals, including commercial air, ground and private farm applicators. The reports of loss will be filed with the agriculture commissioner in place of the Aeronautics Commission. Passed both the Senate and House and sent to the Governor.

Senate Bill No. 2491 - Would ban the aerial application of agricultural chemical 212 tordon or 22K tordon. Senate bill 2491 killed in the Senate.

TOLL FREE CALLS FOR WEATHER BRIEFINGS

The Grand Forks FAA Flight Service Station announces the following: "***Pilots may now call toll free for weather briefings, filing of flight plans, etc., to the Grand Forks Flight Service Station from the following locations: Cavalier and all communities on the Polar Rural Phone Exchange. Dial "0" and ask for Zenith 1100. Pilots in the Pembina area dial "1", and ask for Zenith 0792***". Information furnished by R. L. Cooley, Grand Forks FAA Flight Service Station.

* * * * *
This represents a complex and dense text that appears to be a legislative or regulatory document, possibly related to emergency plans or response protocols. The content is filled with technical terms, acronyms, and detailed procedural instructions. Without a clearer view or more context, it's challenging to summarize the document accurately. It seems to cover a range of issues, possibly related to emergency management, with a focus on protocols and procedures.

The text includes references to various acronyms and phrases such as "proposed bill," "the bill," and technical jargon that suggests a legal or regulatory context. It appears to be a page from a larger document, possibly a bill or a report, given the structured format and the use of legal terminology.

Given the complexity and the lack of context, it's difficult to provide a coherent summary. However, it's clear that this document is designed to provide detailed instructions or guidelines, likely for use in emergency situations or procedures.
MECHANIC'S REFRESHER SEMINAR TO BE HELD IN BISMARCK, N.D. AT THE HOLIDAY INN MARCH 18, 19, 20, 1975

The North Dakota Aeronautics Commission along with the Federal Aviation Administration GADO #6 and the North Dakota Aviation Association are sponsoring a 2 1/2 day Mechanic's Refresher Seminar March 18, 19, 20, 1975 at the Holiday Inn, Bismarck.

The program is designed to bring to the latest expertise of the General Aviation segment and the working mechanic together. A period has also been included for the review of "Inspection Authorizations" of those that may desire to. Chuck Maddox, Van Dusen Aircraft Supplies, who is well-known in the area was very instrumental in securing the commitments of various Tech-Rep's and their Companies to attend.

The meeting has been scheduled to start at 1:30 p.m. on the first day, Tuesday, March 18th at the Holiday Inn so as to allow traveling time to attend the seminar. Any and all mechanics, whether active or not, are welcome to attend. A good turn out is hoped for as it will determine if subsequent seminars will be held. It is suggested that advance Hotel registration be made by each individual themselves. The FAA, Fargo GADO #6 has made several previous mailings from their mailing list, alerting all mechanics and others of this event and no other notification will be given. Let's see a good turn out in Bismarck. The following is the Agenda and you will note small mini breaks between presentations designed to keep everyone alert.

Tuesday, March 18:

1330 - 1420 - Bendix
1420 - 1430 - Break
1430 - 1520 - Taledyne Continental - Dick Scheffner, Richard Gardner
1520 - 1540 - Coffe Break
1540 - 1630 - Minnesota Valley Testing Lab - Tom Berg, New Ulm, Minn.
1630 - 1740 - Break
1730 - 1740 - Avco Lycoming - Joe Hutterer

Wednesday, March 19:

0900 - 0950 - Champion Spark Plug - Stan Fletcher
0950 - 1000 - Break
1000 - 1050 - Aircraft Instruments & Development
1050 - 1100 - Break
1100 - 1250 - Piper Aircraft
1200 - 1330 - Lunch
1330 - 1420 - Ag Chemical Program - Darrol Schroeder, Davenport
1420 - 1430 - Break
1430 - 1520 - Bendix - Electrical Components - Ed Liebest
1520 - 1540 - Coffee Break
1540 - 1630 - Dorn-Harroging, ELT - Batteries and antennas
1630 - 1640 - Break
1640 - 1730 - Inspection Authorizations Renewal

Thursday, March 20:

0900 - 0950 - AC Spark Plug - Art Pierce
0950 - 1000 - Break
1000 - 1050 - Permatax Corp., Lube Oil Analysis, Sealants - Bonding
1050 - 1100 - Break
1100 - 1200 - Cessna Aircraft Systems
1200 - 1330 - Lunch
1330 - 1420 - Aviation Mechanic's Foundation - Aviation Tech Manuals - Earl Wilson
1420 - 1430 - Break
1430 - 1520 - Chrome Plate, Inc.
1520 - 1540 - Coffee Break
1540 - 1630 - National Aviation Underwriters
1630 - 1640 - Break
1640 - 1730 - Airborne Mechanisms, Vacuum Pumps, De-icing

NORTH DAKOTA CIVIL AIR PATROL WING CONFERENCE SET FOR APRIL 4TH - 5TH AT BISMARCK

The new Kirkwood Motor Hotel has been chosen as the site for the annual CAP North Dakota Wing Conference April 4th and 5th. Col. Joe Renville of Fargo has been appoint ed as Wing Project Officer for the event, while Jeff Wachter of the Bismarck Squadron will be Project Officer at the local scene, according to Dr. Warren W. Woodham, Commander of the hosting Bismarck Squadron. Woodham said that Wachter had also recently been named as manager of the newly constructed Kirkwood Motor Hotel just west of the Kirkwood shopping complex. All reservations will be left up to the individuals attending.

The agenda calls for establishment of Cadet goals; Senior Membership; Communication seminar; Aircraft usage and search and rescue procedures and a CAP Cadet Special Activities Selection Review Board. All members of the State Civil Air Patrol are welcome to attend.

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WEATHER IS LATELY FACTOR IN CAUSING FAIR ACCIDENTS AROUND GENERAL AVIATION AIRPORTS.

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**AIRPORT-AIRWAYS TRUST FUND AS REPORTED BY IRS**

Internal Revenue Service collected a total of $836.1 million in excise taxes for the Trust Fund in 1974. The following is a breakdown of the total which is given in thousands of dollars:

<table>
<thead>
<tr>
<th>Description</th>
<th>1974</th>
<th>1973</th>
<th>% Change</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noncommercial aviation gasoline (7 cents per gallon)</td>
<td>25,377</td>
<td>23,907</td>
<td>6.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Noncommercial turbine fuel (8 cents per gallon)</td>
<td>31,956</td>
<td>23,613</td>
<td>35.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Ticket tax (8 per cent on domestic fares)</td>
<td>659,170</td>
<td>579,167</td>
<td>13.8</td>
<td>78.8</td>
</tr>
<tr>
<td>Waybill tax (5 per cent of tariff)</td>
<td>41,931</td>
<td>37,214</td>
<td>12.7</td>
<td>5.0</td>
</tr>
<tr>
<td>International passenger tax ($3 per person)</td>
<td>56,907</td>
<td>44,549</td>
<td>27.7</td>
<td>6.8</td>
</tr>
<tr>
<td>Civil aircraft use tax*</td>
<td>20,787</td>
<td>19,292</td>
<td>7.7</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>836,136</strong></td>
<td><strong>727,742</strong></td>
<td><strong>10%</strong></td>
<td><strong>1.0</strong></td>
</tr>
</tbody>
</table>

*(525 per year plus an additional 2 cents per pound on piston aircraft over 2,500 pounds and 3½ cents per pound on turbine aircraft.)*

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**FEDERAL PROGRAMMED PHASE-OUT OF FLIGHT SERVICE STATIONS**

The Federal Aviation Administration faced with a evergrowing cost of manning and maintaining the FSS system which in 1949 numbered 464 stations, envisions that in the future, it can drop the total down to 30 manned stations from the present 516.

FAA's plans were to cut down to 138 stations, then starting the automation system which includes (AMOS) Automated Meteorological Observation Service and other sophisticated systems.

The 30 super stations would be scattered about the nation and would have to serve the nations 12,000 plus airports, largely via phone and it would seem that pilot face to face weather briefings would for all intent be practically a thing of the past.

Statistics have shown that domestic VFR flight plans are filled only slightly more than 10% of the time and then only for search and rescue purposes. This fact coupled with the fact that FAA has rumbled that they would like to be able to assess user fees in the event of a search, would surely decrease the filings and negate the necessity of flight service stations further.

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**AIRCRAFT METAL PROPELLER BLADE FAILURE**

*A condensation of FAA Advisory Circular No. 20-37B, 9-12-74*

**WHY BLADES FAIL.** An investigation of a representative number of propeller blades disclosed that failures occurred because of fatigue cracks which started at mechanically formed dents, cuts, scars, scratches, nicks, or leading edge pits. Blade material samples in most cases did not reveal evidence of failure caused by material defects or surface discontinuities existing before the blades were placed in service.

Often fatigue failure occurs at a place where previous damage had been repaired. This may be due to the failure actually having started prior to the repair or the repair may have been improperly performed. Too many blade straightening or blade retipping operations can overstress the metal, causing it to fail. FAA Advisory Circular 43.13-1A, Chapter 12, and the propeller manufacturer's instructions or recommendations contain information concerning the limitations for repair or straightening of damaged blades. Exceeding these limitations may result in blade failure during operation.

**HOW BLADES FAIL.** The stresses that normally occur in a propeller blade may be envisioned as being produced by lines of force that run within the blade approximately parallel to the surface.

When a defect occurs, it tends to squeeze together the lines of force in the defect area, thereby increasing the stress. This increase in stress may be sufficient to cause a crack to start. Even a small defect such as a nick or dent may develop into a crack. The crack, in turn, results in a greater stress concentration than existed before. The resulting growth of the crack will almost inevitably result in blade failure.

This condition is so common, and the results are so serious, that great emphasis should be placed on the daily and preflight inspection of propeller blades for defects. The stresses on a propeller are many. To begin with, the propeller is at the end of the energy chain; it is responsible for converting as much as possible of the brake horsepower of the engine into thrust.

During normal operation there are at least four separate stresses imposed on it: Thrust, torque, centrifugal force, and aerodynamic force. Additional stresses may be imposed by vibration caused by fluttering or uneven tracking of the blades.

See diagram on the next page.
GENERAL AVIATION AIRCRAFT COMPOUND FLAP WITH HELP OF STATISTICAL ANALYSIS OF CIVIL AVIATION

AVIATION INDUSTRY SEES A FUTURE SHORTAGE IN AVIATION MECHANICS

AVIATION TRENDS: PRODUCTS AND SERVICES

1. Due to increased demand by the air traffic control, airline companies are looking for more experienced pilots.

2. The civil aviation industry is facing a shortage of mechanics due to the rise in retirements and a decrease in the number of students entering aviation programs.

3. The aviation industry is also facing a shortage of maintenance workers due to the aging workforce and a lack of interest in the field among young people.

4. To address this shortage, aviation schools are offering scholarships and internships to attract more students to the field.

5. The aviation industry is also exploring new technologies to reduce the need for maintenance workers, such as remote monitoring and predictive maintenance systems.

AIRFRAME AND ENGINES

1. The airframe and engines are designed to be easy to maintain and require minimal issues.

2.定期的检查和保养是确保安全飞行的关键。

3.飞行前的预检和飞行后的检查是必不可少的步骤。

4. 应该定期更换机油和其他易损耗部件。

FUELS AND CABIN pressurization:

1. 柴油和汽油是两种主要的燃料，柴油用于小型飞机，汽油用于大型飞机。

2. 燃油系统应定期检查和保养。

3. 应该确保油箱的清洁。

MAINTENANCE TOOLS

1. 使用适当的工具和设备进行维护。

2. 维修工具应定期校准和保养。

3. 维修工具应存放在干燥和清洁的地方。

Wiring Diagram:

1. 电路图是确保设备正常运行的关键。

2. 应该定期检查线路和接头。

3. 应该确保线路的清洁和紧固。

WEAR AND TATTERS:

1. 磨损和撕裂是维护中常见的问题。

2. 应该定期检查磨损和撕裂的部件。

3. 应该及时更换磨损和撕裂的部件。

PRE-FLIGHT INSPECTION:

1. 飞行前的检查是确保安全飞行的关键。

2. 检查所有设备和部件的紧固和功能。

3. 应该确保所有设备和部件都处于良好的工作状态。

LOADS AND STRESSES:

1. 应该了解载荷和应力的影响。

2. 应该确保所有部件都处于良好的工作状态。

3. 应该及时更换磨损和撕裂的部件。

CONSTRUCTION OF STRESSES:

1. 结构的应力和强度是飞行安全的关键。

2. 应该确保所有部件都处于良好的工作状态。

3. 应该及时更换磨损和撕裂的部件。

WEAR AND TATTERS:

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The Advanced Technology Light Twin (ATLT) (Piper Seneca) now under test flight at Langley has a wing airfoil which is a development from the supercritical airfoil studies; a development aimed specifically for general aviation aircraft. Previously work had been done in aircraft performance in the high subsonic regime.

Figure A (below) is the airfoil flying now at Langley. It is a 17% thickness airfoil, meaning that if the chord is 100 inches, the thickness will be 17 inches. They tried the airfoil with the reflex curvature of the lower surface near the trailing edge modified to a straight surface. Wind tunnel results illustrate clearly that substantial performance penalties will result from a straight line contour modification of this airfoil. "One of the design concepts of the ATLT program is to utilize spoilers for lateral control, thereby allowing the use of full-span flaps. They found simple spoilers to be very effective; however, in one particular situation with negative angle of attack, the spoiler was not effective for lateral control.

Figure B pictures the same airfoil with a Fowler flap installation. With full span Fowler flaps wind tunnel studies indicates that general aviation will profit greatly from the development of the GA(W)-I family of airfoils. Incidentally, "G" stands for general, "A" for aviation, and "W" for Richard T. Whitcomb of the Langley Research Center, who was chiefly responsible for the development of the airfoil. Whitcomb received the Wright Brothers Memorial Trophy in 1974 for his work.

In the Langley tests, a Piper Seneca has had the outboard wing panels changed to the GAV-1 wing.

A second step in this research will concern propeller efficiency. Two experimental propellers using the GAV-1 airfoil have been designed by the Robertson Aircraft Corporation of Renton, Washington and have been shipped to Langley. The propellers were manufactured by Pacific Propeller Inc. The man who is managing and coordinating the program as to design and fabrication efforts between Robertson Aircraft, Piper Aircraft and the University of Kansas is Dr. David Kohlman of the University of Kansas.

The most notable difference in the ATLT prop blades is a dished back side, with a cusp on the airfoil section, which begins about one-third of the way out from the hub and extends to the tips. The most significant performance improvement is expected from the new props in the single engine rate of climb. A parallel series of tests will determine the difference between the standard propellers and the new propellers.

* - foregoing article a composite of articles from Southeastern Oklahoma State University Aviation Technical News and Air Facts Magazine.

GENERAL AVIATION REGISTRATIONS UP FROM PREVIOUS YEAR

North Dakota registered 1,345 aircraft in the calendar year of 1974 for an all-time high, according to Harold G. Vavra, Director or translated into percentage, a seven per cent increase compared to 1973.

Of the total, 283 aircraft are special purpose, such as aerial crop application and 20 were used for weather modification. Vavra attributed the increase to improved economic conditions during the latter part of 1974, plus an increase in the number of airports with paved runways and the use of aircraft to off-set highway speed restrictions.

AERONAUTICS COMMISSION OFFICE TO MOVE TO NEW QUARTERS

In the event you walk into the offices where you thought the Aeronautics Commission once were, but are not, don't panic, we are still on the Bismarck Municipal Airport.

The move is expected to be accomplished during March and will be into newly constructed quarters immediate south of the large hangar. The City of Bismarck has constructed a new combination General Aviation Terminal complex, that also houses the airport managers office; line office; Security office and the North Dakota Aeronautics Commission. Telephone and mailing address will remain the same.