

RELATIVE



The Official Publication Of The
North Dakota Aviation Association
and carrying the Official News of the
North Dakota Aeronautics Commission

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In defense of our 'turf' The Legislature kept us busy

Bill Beeks, Legislative representative of the North Dakota Aviation Association and Harold Vavra, director of the Aeronautics Commission were kept very busy during the last three weeks of the legislature testify before committees and proposing amendments to bills which had adverse provisions in them. In most instances the bill sponsor did not intend to up-set aviation needs but inadvertently did so.

The big problem was brought about by amendments in a bill or in some instances an amendment which struck out everything after a bill and inserted entirely new language. These changes are difficult to follow unless someone is looking into the matter practically everyday.

House Resolution HCR-3054, which directed the legislative council to study aerial application of pesticides in relation to possible mandatory requirements for chemical drift insurance was killed on the House floor vote of 75 against and 18 for.

One bill aimed at our certificated air taxi operators

House Bill No. 1184 started out as a standard bill providing for travel expense adjustments for state employees. The bill before it got amended, provided that state employees could use certificated air taxi commercial operators or other common air carriers including regularly scheduled flights by airlines and would be reimbursed for the amount actually and necessarily expended in the performance of official duties.

The bill passed the House intact. In the State Senate it was amended to make several changes including deletion of the language which provided that state employees could use certificate air taxi commercial operators for travel and be reimbursed the amount actually expended. The bill was amended and passed by the state senate before these changes were discovered.

Next House Bill No. 1184, as amended by the Senate, was on the House calendar for final vote, before this adverse amendment was discovered. Both Bill Beeks and Vavra brought this to the attention of the House Chairman of the State and Federal Government Committee, who inturn rejected the Senate Amendments to the Bill, pulled the bill from the calendar and recommended the appointment of a conference committee of three members from the House to meet with three members of the State Senate to

resolve the differences between the House and Senate over the amendments.

Before the conference members met on House Bill 1184, Beeks and Vavra drew an amendment for the conferees which reinstated the original language authorizing state employees to use certificated air taxi commercial operators for travel and be reimbursed the amount actually expended for such services. The amendments were accepted by the conference committee and House Bill 1184 was then passed by both the House and Senate with the final amendments accepted by the conferees, which included certificated air taxi commercial operators.

Four fuel tax bills caused no small amount of confusion

Both Bill Beeks and Harold Vavra were kept mighty busy keeping four fuel tax bills from inadvertently imposing a unrefundable fuel tax on all gasoline and special fuels which included aviation gasoline and jet motor fuel and being used for either township roads or for state or city roads.

The townships had two bills in the legislature, one which would have increased all fuel taxes one cent per gallon (Senate Bill 2392) and House Bill 1641, which would have increased all fuel taxes 1/2 cent per gallon and used the additional revenue for township roads. Both bills provided that there shall not be any refunds for off-highway users.

Both of these bill passed the Senate or House chamber of origin and were being considered by the opposite legislative body, when it was discovered by Bill Beeks and Vavra that the unrefundable feature would apply to both aviation gasoline and jet motor fuel as well. It was necessary for Beeks and Vavra to appear before the House and Senate Finance and Taxation Committees with amendments which excepted out from the unrefundable portion of the tax both aviation gasoline and jet motor fuel. These amendments were adopted by both the House and Senate Finance and Tax Committees.

During the last two days of the legislature, both Senate Bill 2392 and House Bill 1641 were killed because the Legislature shifted gears and came up with a new bill to replace these two bills.

In the closing days of the Legislature, House Bill 1365 was amended by the State Senate into a fuel tax bill by striking everything after a

Bill and inserting new language after a Bill which increased all fuel taxes three cents per gallon from 8 to 11 cents per gallon on all gasoline and special fuels with a provision that this revenue was to go to the State highway fund and to township roads. This bill was worded to exempt aviation gasoline and jet motor fuel from the added three cents per gallon. House Bill No. 1365 was not printed until it was on the Senate floor for debate and final passage. Upon getting copies of House Bill 1365, it was discovered by Bill Beeks and Vavra that Chapter 57-52 of the Century Code would impose a two percent excise tax on the sales price of all jet motor fuel which is exempt from the added three cents per gallon tax and put this revenue into the highway fund for roads. Beeks and Vavra convinced the lawyer for the legislative council, who had drawn the bill and the state tax department, that the bill had to have additional amendments to avoid this from happening.

This error was discovered about 2:00 p.m. while the State Senate was in Session and debating House Bill 1365 for final vote. The Senate was advised of this technical error. The bill was then moved to the bottom of the calendar while further amendments were worked out by Beeks, Vavra and Lawyers for the legislative council to remove this error.

By 5:00 p.m., that same afternoon, House Bill 1365 was reprinted and distributed to the Senate while it was still in session. The State Senate passed

House Bill 1365 that same afternoon at about 5:30 p.m. and sent it to the House of Representatives on Friday. The corrective amendments were intact.

The following Monday, both the House and Senate decided to scrape that part of House Bill 1365 which increased fuel taxes 3 cents per gallon with the House sending the bill back to the Senate for further amendments.

The Senate the following Tuesday amended House Bill 1365 to provide additional funds for the State Highway Fund by providing that one percent of the gross value at the well of crude oil and gas extracted at the well-head shall be used for providing additional funds. The amendments eliminated three cents per gallon additional tax on motor fuels.

To provide funds for township roads, the final amendments to House Bill 1365 provided that one cent out of the eight cents per gallon present tax on gasoline and special fuels that is subject to refund for off-highway use shall not be refundable. Bill Beeks and Vavra met with the legislative council lawyers to make certain that proper language was used in this final amendment which does not reduce refunds by one cent per gallon on aviation gasoline or jet motor fuel used by aircraft or otherwise use any aviation fuel taxes for township roads.

The final amendments to House Bill 1365 put together on March 31st was the final bill that passed both the Senate and House and was signed into law by the Governor.

John Baker says:

'We preach to the choir instead of telling our story to the public'

By Patricia J. Estes

John Baker, president of the Aircraft Owners and Pilots' Association, urged the North Dakota aviation industry to tell its story to the general public.

Speaking at the winter North Dakota Aviation Association annual meeting in Bismarck, Baker said, "We preach to the choir instead of telling our story to the public."

Baker expressed optimism over the handling of general aviation by the Reagan administration.

Reagan was the only major candidate who responded to ten questions from AOPA prior to the election. His response was one viewed as favorable by AOPA.

Reagan's position on the aviation trust fund, according to that survey, is that those funds should be spent for the intended purpose . . . building airports and improving the airways system. That would be a change from the way those funds have been dispersed over the last ten years, he said. Nearly \$4 billion unobligated dollars are now in that fund.

Throughout its history that fund has been subjected to impoundment. Reagan said it would be spent on aviation and would not be pirated away by FAA to cover administration costs.

Congress is looking at new Airport-Airways legislation. "AOPA wants to make certain we don't just get a rehash of the same mistakes. There must not be new taxes without a definite

Continued On Next Page

The Airport-Airways Act revenues have been diverted to other purposes

Cont. From Page One

program to provide for airports."

The aviation industry worked hard to get the Airport-Airways Act of 1970 passed and then saw that revenue diverted to other purposes.

General Aviation serves 14,000 airports in this country, he continued. Those airports are the veins and capillaries of the overall system. Commercial aviation is limited to a small number of major airports.

With the expiration of the Airport-Airways Act, now is the time to start for a clean slate and make sure a new act appropriates funds for development.

General Aviation has fared better under state grant programs, Baker continued. The Reagan philosophy of returning more authority to the states has many advantages for general aviation. However General Aviation must stress the important role it plays in state transportation systems. Otherwise the grant money may be spent only on commercial airport

developments.

The key thing to remember is the need for funds for development not maintenance of existing facilities.

The network of regional and feeder airports into the large population centers must be maintained and improved. If General Aviation loses access to important population centers, the entire utility of General Aviation is impaired.

In 1979 state grants put \$204 million into General Aviation airports while the Federal monies totaled only \$17 million.

AOPA supports block grants airport development on the state level. The organization also supports defederalization of major airports. "These airports get enough revenue off their own activities."

Geography in areas like North Dakota demands a good 3 General Aviation system for prime transport due to the time and distance factors.

General Aviation is seeing an evolution in the industry. Economics

now demands not only money to participate but dedication by participants to spend that money in General Aviation. The numbers of young students who are choosing General Aviation and sticking with that commitment are up.

Furthermore General Aviation is now seen more for its utility than as a sport as in previous years. All this means a new audience is rising in General Aviation and groups like the North Dakota Aviation Association will have to meet the needs of that group.

"We'll see a slowing of the regulation frenzy in Washington under the Reagan administration."

"If there is any place where the Reagan administration can start to fulfill its promise of 'getting government off our backs, it is in the FAA regulatory actions."

There was a last minute dumping of regulations into the federal register by the outgoing Carter administration.

New aviation regulations cannot be justified on safety requirements, according to Baker. Last year was one of the safest in airline history. There was also a decline in General Aviation fatalities and fatal accidents. In fact it was the best year in 20 years.

"We asked three years ago for 'zero based regulations.'" We may not get 'zero' under Reagan but the expectations are that there will be a slow down.

Aviation is facing potential conflicts and challenges. There are serious capacity problems at big city airports. The manufacturing industry must face more squarely the question of 'lower end of the line' planes. Deregulation is leaving many communities without airline service.

Officials with no interest or information on the role of General Aviation airports have the authority and are using it to close local airports.

"We must fight to keep and expand the hub airport system. We must join forces' with others who are interested. Airlines want to get out of hub airports if they are not economical for them. We must watch any action that effects our accessibility to airports and a complete system of airports."

AOPA is working to get visibility and understanding of general aviation within the public. "We are helping to build local and regional pilot groups and a network of regional representatives."

"We must work together to demonstrate need for airport facilities. We can't lose the ones we have. We need more."

"All of us in aviation must be involved with politics on all levels . . . local-state and national."

It usually works best to solve problems on the local level, he noted.

AOPA has set long term goals "Some of the areas AOPA has set up as general aviation needs are:"

- crashworthiness
- maximum airspace for VFR
- safety corridors at major airports
- deletion of public use areas at private airports from tax rolls
- expansion of satellite airport development program
- mandatory radio advisories when requested by the pilot

In concluding, Baker stressed, "the burden of getting favorable general aviation programs is going to fall on all of us. With more than 255,000 members, AOPA is now at its strongest point."

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Before Congress

Aviation industry lobbying groups were sharply criticized last week for their inability to reach agreement on aviation matters pending before Congress. Ken Black, administrative assistant to Rep. Sam B. Hall, Jr. (D-Tex) and Ron Gering, House aviation subcommittee staffer, told an NATA convention seminar in San Antonio that disunity among aviation trade groups was one reason key legislation like the Airport Development Aid Program (ADAP) have not been acted upon by Congress. "If there is one overriding thing about the aviation industry, it's selfishness," Black said. "I have never seen an industry so helplessly divided against itself. Everybody wants their own little slice and nobody can get together."

Gering and Black noted that during recent hearings before the Senate aviation subcommittee, there was wide disagreement among various trade

groups on how a new ADAP program should be configured. They said even though some groups prepared joint statements that were helpful, some representatives of organizations who participated in those statements later were contacted staffers to argue different points of view. "You've got to become less segmented," Gering warned. One outcome of the wide variety of views about ADAP will be the introduction of numerous amendments. Gering predicted there would likely be as many as 100 amendments to the upcoming ADAP bill focusing on needs of various special interest groups. While he said the committee would attempt to pare down the number of such amendments, he said it is a time-consuming process that will further delay passage of an ADAP bill and reinstatement of airport construction grants.

Reprinted from Business Aviation.

Thanks for helping in the legislature

I worked closely with Mr. Vavra at the legislature this year and he has chosen to write a complete report for the Relative WIND. The nature of the bills required your representative's attendance at nearly half of the legislative session in order that the bills and the amendments to them could be closely followed.

I would like to thank those who came in to support efforts to kill the bill on requiring liability insurance. I would also like to thank those who have supported the efforts of NDAA with their memberships.

I am urging those of you who are not members to join NDAA NOW. We need your support in order to continue to serve aviation in North Dakota. The next legislative session is two years away, but I feel certain that there will be another attempt to require drift liability, to increase the fuel taxes and possibly other legislation that may inadvertently affect some of us in our business.

There is no free lunch in this world and without proper support, we may not be able to protect your interests to the extent that we should.

For your own best interests, join NDAA NOW. It is for your own benefit.

Sincerely
William A. Beeks

A plan to plant now and feed later

For some airports, winter '80 never arrived and that may leave a few extra bucks in the maintenance account due to less spent on snow removal. If so, maybe this is the year to spend a little extra on turf maintenance.

All of us know, of course, that airfield grass cover is not just for looks. It also contributes to safety, reduces abrasive dust and dirt that can cause maintenance problems, and prevents erosion. But there's nothing wrong with wanting "the grass to be greener" on

your side of the fence just because it looks good. Just a coat of paint can do wonders for an old hangar, so can a coat of green make an inviting display from air or ground.

And now's the time to make that grass greener . . . and tougher. Weed control's always a problem, but tough grass can fight part of the battle for you. Tough grass grows in the spring, when heavy rainfall or snow runoff gives a "natural high" to the turf. Just as with people, good early nutrition

builds healthy adult plants.

Those who sow fertilizer during the last gasp of winter are wasting money. Nature's already stockpiled good to break the long winter fast and grass isn't gluttonous . . . overfeeding just goes to waste or causes to grow too rapidly.

Instead, experts recommend timing the first feeding for about a month or so after spring thaw. That way the first feeding you pay for comes when Nature's free food is gone and the grass

needs nutrition to build solid roots.

Solid roots are the key to successful airport turf: a good mat of roots chokes out weeds, retains ground moisture during summer dry spells, and helps grass naturally spread to cover small bare spots. Nitrogen, the major ingredient in most fertilizers, is the major element in strong, green grass, but potash and phosphorous are also important. Use caution, however, when buying fertilizer; standard lawn products may be too high in nitrogen percentage, look for a mix of about 2:1. About 8 pounds of nitrogen to four of potassium and phosphorous is sufficient to feed one thousand square feet of turf annually.

Seeding can also be done in early spring, but seeding a busy airport is far different from seeding a protected front lawn. Plan on spreading at least 50 pounds of seed per acre to allow for wind and water loss and be sure to compact the seedbed by rolling immediately after sowing the grass.

To protect the seedlings, some operators plant rye or oats along with the grass to serve as a holding medium. Others leave rough grass and weeds in place during the first season until the desired product has a chance to root.

Finally, spring always brings special troublespots to some airports. Perhaps this year, if you're lucky enough to have some funds saved from snow removal, it's time to permanently cure . . . or at least lessen those problem spots. (Airport Services Management)

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EDITOR

Patricia J. Estes

EDITORIAL ADVISORS

Robert Odegaard, Larry Linrud, William Beeks, Ron Ehlers, Fred Andersen and Jack Daniels.

ADVERTISING MANAGER

Richard K. Estes

ADDRESS ALL

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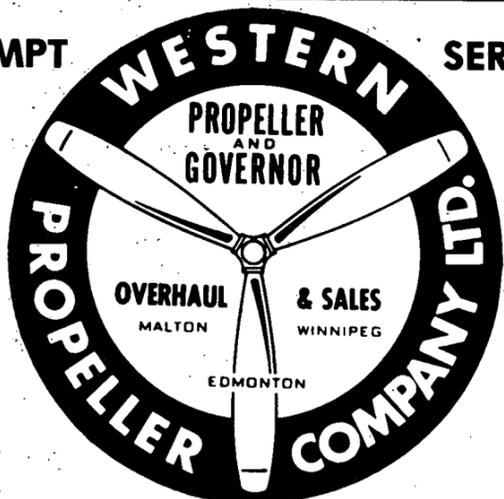
Without error . . .

Almost everyone believes that the most critical phase of flight in a light twin engine aircraft is the take off and immediate climb thereafter. If an engine should fail during this critical phase of flight, there are several decisions that have to be made almost instantly and without error. One of these decisions is whether or not to land or to attempt a single engine return to the field. This decision can be complicated by all kinds of added variables such as visibility, wind, runway surface condition, obstructions, and on and on. Imagine the confusion that can exist in the pilot's mind when he is faced not only with a serious emergency, but a

momentous decision as well! Even our marvelous computers might have trouble taking the right course of action in the time available.

One procedure that can be used to lessen the confusion, should you ever be faced with an engine failure on take off is to make your decision prior to commencing the take off roll; consider the weather conditions, the runway length, the terrain at the far end and any other factors that would affect your landing straight ahead or continuing flight. When airborne, retract the landing gear at your decision point. By doing this, you have eliminated one point of confusion if an engine should fail. Prior to gear retractions you land straight ahead; after gear retraction you treat the engine failure as an in-flight emergency.

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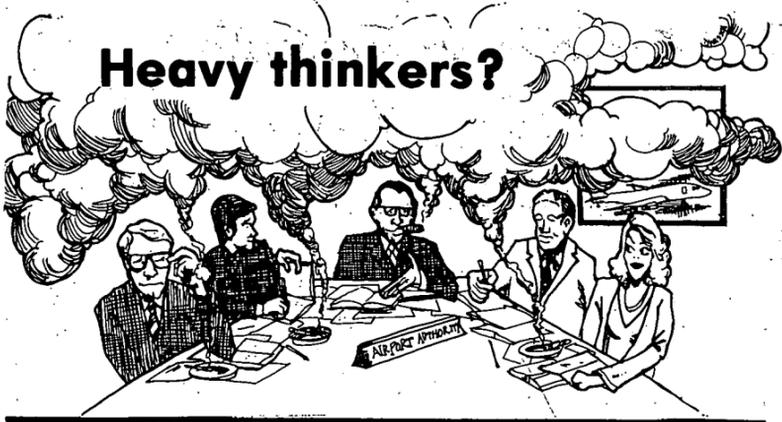


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Heavy thinkers?



General aviation around the state

VELVA . . . is reviewing two possible sites for airport development. The community has a definite need for air service with the Industrial sunflower processing plant construction.

BEULAH . . . plans to bury a 25' power line located 702' on centerline from the SE runway end. The burial project would improve the approach slope since the airport already lies within a river valley. They may also develop zoning ordinances too.

TIOGA . . . plans to rewire runway lights with a heavier cable. Spring time weather has allowed them to install a new lighted wind cone.

LAKOTA . . . is getting some bids for an overlay job of their runway and taxiway. The double armor seal coat was very soft this spring and caused the airport to be closed in the spring thawing period. Lakota has no 80 Oct. fuel available and the airport is unattended.

COLUMBUS . . . Some construction is being planned south of the runway. Plans were drawn up to insure that the approach to this runway is not obstructed.

GARRISON . . . is looking at some concepts for hangar development on their airport. They are reviewing the T-hangar, portable hangar, large multi-unit hangar and revolving floor unit hangar concepts.

WATFORD CITY . . . may purchase a single tube 2 box SAVASI System for one runway end. This SAVASI system would air pilots in giving them a visual approach slope guidance to the runway end. A hill to the south of the airport may be hazardous on approaches during the evening. The estimated cost for one runway end SAVASI system would be \$5,000.

MAYVILLE . . . plans to rework the runway and are a making grant applications for State aid.

MOTT . . . is requesting aid for crack sealing. Now is the time to get the cracks filled. If your airport plans on filling your cracks, get in contact with the N.D. Aeronautics Commission as to what type of material to use and for State 50 percent matching grant applications.

ELLENDALE . . . plans for a seal coat job on the runway to coordinate with the city's asphalt projects. Airport maintenance and construction costs can be reduced by combining airport projects with local city work or highway projects.

WASHBURN . . . is looking at costs for developing an all-weather surface on the airport. The turf was very soft and wet this spring and was closed at times. Please check before using if rain storm develops in this area. Moisture has not been short last fall and winter.

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John Breibach, Chairman of the Oakes Municipal Airport Authority announced a flight breakfast, air show and airport dedication at the new Oakes Municipal Airport on Sunday, June 7th. The flight breakfast is scheduled from 8:00 a.m. to 1:00 p.m. Airplane and hot air balloon rides will be available.

According to Leo Ruhn, Manager of the Oakes Municipal Airport, the air show will take place between 12:00 noon and 1:00 p.m. with the airport closed between 12:00 noon and 1:00 p.m. Bob Schroeder, Sr. of Erie, North Dakota will perform during the air show in his Pitts Special. Also there will be sky diving. The airport dedication will take place about 1 p.m. The airport will be dedicated in the memory of the late Willys Johnson, an early pioneer who pushed for a new airport at Oakes.

The new Oakes Municipal is located 2 miles north of Oakes with access to N.D. Highway No. 1. The new airport was constructed at a new site with both Federal and State-aid funds and has a paved runway 3,500 ft. by 60 ft. (12-30 runway) with paved apron, taxiways and paved access to a hangar area.

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We can only help you if you'll pay the dues

The North Dakota Aviation Association recently completed their annual meeting in Bismarck with a miserable showing of attendance and membership renewal.

The work of NDAA more often than not goes unnoticed and unheralded by those who are putting out the effort in controlling the destiny of the aviation community in our state.

This, apparently is not good enough for many in the aviation community. It seems that some folks want to know what they are getting from NDAA. The following is a small sample.

Benefits

1. Two (2) scholarships at NDSU for the education of agri-chemical experts who can defend and pursue the use of agri-chemicals and their application by aircraft.

2. In the recent session of the legislature, killed action on liability insurance for chemical damage.

3. Monitoring efforts calling for moving the Aero Commission into a DOT concept thus losing its identity.

4. Is monitoring the fuel tax issues and opposing any increase to aviation fuel taxes that will go toward highway and township roads.

5. Moving forward, with the support of NDAC, with the payment to airport fund of \$100,000.00 from Jet fuel sales now going into highways, annually.

During the legislative session, your

NDAA past president, Bill Beeks, literally lived in Bismarck so as to monitor all legislation coming down that would affect airplane owner in our state in the form of more taxes, more difficult operating environment and more expensive operational requirements.

This cannot be done without paying the fidler. We need your membership to support these and other programs.

There are a possible 120 new members out there some place that we need to get on board and get the support from so that our future can be controlled to some extent. We cannot do what needs to be done without a united front. It has cost the national aviation community millions to elect to go the separate ways of splinter groups, we in North Dakota do not have millions to play with.

The North Dakota Aviation Association is recognized in the political world of North Dakota. It has some stature with our elected officials and can do as much as any group to enhance and protect the future of the states aviation community.

I ask that you consider honoring the invoice that you have received for your 1981 dues. Doing so will allow the Board of Directors an opportunity to serve you.

Sincerely, Jack

Emergency Landing

Ever think what you would do if your engine(s) quit and you were 1,000 feet above "Old Mother Earth?" There is not much time to contemplate your situation.

Precautionary Landing — You do not have to wait until smoke and flames start engulfing you to alter your flight plan. AT THE FIRST SIGN OF TROUBLE, when your radios fail or instruments appear unreliable, or controls feel clumsy or when the weather worsens beyond your expectations, forget about your original destination and start looking for the closest runway you can handle.

The surest way to avoid injury from a crash landing is to land while you still have full control of the airplane. DON'T WAIT FOR AN EMERGENCY TO FORCE YOU DOWN! APPRAISE THE SITUATION,

once a malfunction has appeared, place a quick and reasonable limit on the amount of time you can spend trying to overcome it. Even the best mechanic cannot make some repairs at 10,000 feet, and most pilots are not mechanics. Dead engines can sometimes be restarted in the air, and hydraulic failures may be compensated for by backup systems — but then again they may not. You need to have enough self-discipline to stop tinkering with the aircraft while you still have enough altitude and/or fuel to make a controlled landing. THE LONGER YOU WAIT, THE FEWER OPTIONS YOU HAVE LEFT.

Proper Restraint — Use your seat belt and shoulder harness. This is a simple way in which a pilot can improve the odds against injury.

From Your Executive Secretary by Jack Daniels

This letter is written to the aviation community of North Dakota and is intended to enthruse each of you enough to make you want to join the North Dakota Aviation Association.

This year NDAA took one more giant step forward in its process of growing up and doing its own thing.

We had a full blown full-time lobbyist working for us during the 1981 session of the North Dakota legislature. Mr. Bill Beeks has just completed the most productive, industry interest saving lobbying effort we have ever enjoyed.

The aviation community saved the \$500,000.00 additional general fund financing for air carrier aviation airports, protected the fuel tax level at the current rate, defended the position of the aerial applicators in the liability insurance question and successfully protected the interest of airplane owners, airport operators and commercial aviation in every respect.

All this came about through the sacrifice of Bill Beeks and his living in Bismarck for three months. This costs money which NDAA must come up with if we expect to leave the same representative in the future.

To provide the funds we need to offset this expense we need more members and their dues. We are asking that each commercial aerial applicator, airport authority and air carrier airport manager join NDAA and support the efforts of NDAA in this very vital legislative function.

We do not want your donation. We want your membership. From your dues we can generate the money we need to cover the costs of our lobbies and continue our programs.

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Weather 'WATTS' line

The FAA introduced state wide pilot weather briefing and flight plan service inward watts line No. 1-800-732-4247 on March 3, 1981 to Grand Forks Flight Service Station.

Pilots Note: This service was introduced to provide weather and flight plan service to all pilots in the State. All zenith lines and local service will remain and pilots are urged to use local and zenith lines where available for briefing and flight plans as only one

line is available for watts for Grand Forks.

This service will benefit all pilots in North Dakota. Lets use it when needed but not when local service is available.

One word of caution: When filing a flight plan on 800 watts number to Grand Forks, you must advise local Flight Service when in radio contact to open or close your flight plan and that you already filed with Grand Forks Flight Service by phone.

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Fewer chemical companies are producing fewer new pesticides

The farm pesticide industry seems to be following a trend common throughout agriculture: increasing concentration.

Fewer chemical companies are accounting for a bigger share of the business, and fewer new pesticide products are entering the market, says USDA economist Ted Eichers.

In 1966, the top four firms in the industry accounted for 33 percent of farmers' total pesticide purchases. Ten years later, the top four had 59 percent of the market.

Greater market concentration, Eichers says, is tied to rising research and development costs and increased government regulation of pesticides to protect health and the environment. These same factors also contribute to a smaller selection of new pesticide products.

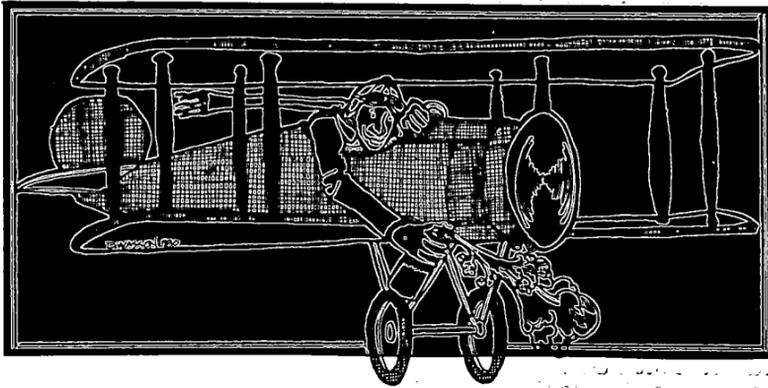
Greater concentration is tied to rising research and development costs and increased regulation.

In the last decade, the number of chemical compounds that companies tested to find marketable pesticides rose dramatically—from an average of 6,500 yearly in 1967-70 to 84,000 yearly in 1977-78.

However, in the same period, the average number of new pesticides registered fell from 10 to 2 per year. Registrations are now making a modest recovery, but new product introductions will probably remain below past levels.

Problems with Simpler Pesticides

Companies need much more time and money to discover safe, selective, chemically complex pesticides than to find simpler, broad-spectrum compounds such as DDT. What's wrong with the less costly, broad-spectrum pesticides? They're more likely to meet with pest resistance — and they may be more likely to cause chronic health and environmental problems.



In the late 1960's, the 30 leading pesticide manufacturers together were spending about \$60 million a year on research and development. By the late 1970's, the figure had shot up to \$290 million.

At the same time, the average lag between discovery of a pesticide and its registration lengthened from almost 6 years to more than 9, according to an industry survey.

The net effect: Only a company with a foothold in the market and a very strong capital base can afford to see a pesticide through the long, expensive, and uncertain process from laboratory to marketplace.

Patent expiration gives small companies their main crack at the market. They can begin manufacturing a leading pesticide under a new brand name, avoiding the research and development costs they can't afford, and passing some of the savings on to farmers.

Otherwise, the barriers that prevent an aspiring company from undertaking production of new pesticides are formidable. According to Eichers, these include "the high cost of research and development, the specialized personnel and equipment required, and the risk that a firm may screen thousands of

chemicals without finding a single new pesticide."

Further Market Concentration

Risks are not likely to diminish, and research and raw material costs will continue to increase. The result, Eichers says, will probably be further market concentration and fewer firms devoting large expenditures to new pesticide development.

Up till now, the trend doesn't seem to have disproportionately raised pesticide prices to farmers, Eichers says. Indeed, during the 1970's, pesticide prices climbed at a slower rate than other farm inputs.

However, this favorable price situation may soon end. Pesticide prices have been kept relatively low largely at the expense of formulators and distributors — the middlemen who mix and package basic pesticide ingredients into ready-to-sell preparations and get them into farmers' hands.

But this price cushion has largely disappeared. As a result, manufacturers' cost increases will likely be passed directly through to farmers in the future.

The degree of market concentration in the industry could work either to bolster prices or keep them down in years ahead.

On the one hand, companies with a big share of the market often have lower costs per unit of output. Also, when producers are assured of a certain level of sales, they can plan for optimum use of their production capacity, cutting costly waste. Eichers found that "the pesticide industry has

been more efficient in plant use than the chemical industry as a whole."

Nevertheless, as the farm pesticide industry grows even more concentrated, there's always the danger that manufacturers could adopt a marketing strategy detrimental to farmers — reducing output and driving up prices.

Producers Still Competitive

But, so far, Eichers sees no evidence that pesticide manufacturers take their farm customers for granted. Today's market conditions, he says, promote a king-of-the-mountain pattern of competition.

A pesticide that's a leader one year may tumble to relative insignificance a few years later because of pest resistance, the introduction of a superior product, government regulation, or a combination of these. Since manufacturers' sales tend to be centered on one or a few compounds, a firm that loses its best-selling pesticide may lose its market dominance.

For example, in 1967, aldrin was so widely used to control corn rootworm that the compound's manufacturer was second in the industry in farm insecticide sales by quantity. But the Environmental Protection Agency suspended the use of aldrin in 1974, and the producer fell below tenth place by 1976.

Consequently, firms have to invest continuously in research and development to ensure that they'll be ready with replacements when leading products start losing their markets. These competitive pressures encourage new and better products as well as pricing restraint.

However, as Eichers points out, pesticides account for only a small share of total chemical sales of most manufacturers.

If climbing costs start squeezing profits or testing and registration requirements become too burdensome, some of the large chemical companies which provide most of the basic pesticides might convert to other products, he says. The result could be less competition and less incentive for manufacturers to meet farmers' needs at reasonable prices.

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1970 PIPER NAVAJO B
2700 TT, 1350 SMOH, L&R, 2-KX-170B's, KR: 85 ADF, KT-76 X-ponder, 190 DME, KNX 40 Radar, 111C A/pilot with Couplers, GS, C Pilot Instruments, C Pilot Brakes, Cabin Divider, Executive Tables L & R, Tilet & Bar, Oxygen, Tinted Windows, Floor Runner, Roll DEICE, Hot Windshield, Strobe, 8 Seats, Nov. Annual, Blue/Red/White, Red Interior, NDH N6647L **\$115,000.00**

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176 TTSN, Exec Group, King 170B, X-ponder, No Damage History, Red & Gold Over White. **\$25,000.00**

1972 CESSNA 421 GOLDEN EAGLE
2025TT, left 800hrs., right 710 hrs, 2 heavy cases, CESSNA 400 radio group, 800 DME, RMI a/c, AVQ/47 radar, 2-400 X-ponders, flight director, HSI, alcohol windshield, full de-iced. **\$115,000.00**

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Computer program predicts job profit

Where the hand calculator replaced the slide rule, the programmable calculator is replacing the hand calculator as a tool for improving management decisions. A company in Las Vegas, Nevada that will determine job time and profit for each aircraft (or ground rig) so that the most profitable craft can be chosen for a given job situation.

No Special Training

The Ag-Air Computer System, from Agrinautics, does not require extensive training for operation. Input numbers are keyed-in by a keyboard overlay with color guidelines and names on the keys. As the input numbers are entered, the printer prints out the item name and input number. When all the input numbers are entered, the operator hits the compute button and the printer gives the following results:

COST PER ACRE (\$)
 JOB LOADS REQUIRED (NO.)
 JOB RUNS (NO.)
 WORK RATE (A/HR)
 JOB TIME (MIN.)
 JOB PRICE (\$)
 JOB COST (\$)
 PROFIT (LOSS) (%)

The printout also signals the operator if the last swath is par-

tial so he can make suitable adjustments to avoid an extra pass or running out of material. For the new operator, the operating instructions for the pre-programmed calculator system tell him what adjustments in operating conditions can be made to improve his profit.

The printout in figure 1 demonstrates the effect of changing the run length of a job while the remaining input figures stay the same. The printout begins with the input figures entered by the operator. It is followed by the computer output based on these figures. In the next entry, the operator has changed the run length from .25 miles to .50. The subsequent computer output reflects this change.

Significant Variable

A change of run length is one of the most significant factors in job time and job profit under most conditions. Note that in the example, a change of run length from .25 to .50 without an increase in price brought the expected profit from a negative figure to 35.3%.

In figure 2, the profit has been fixed at 25% and the computer output tells the operator what he should charge for different application rates to maintain this profit.

Agrinautics is developing other computer software and soon will have available magnetic card programs for computing any aircraft hourly cost, aircraft or nurse tank mix computations and automatic payroll computations.

Reprinted from MN AAA Newsletter

FIGURE 1. Expected profit for different run-lengths at the same price per acre.

AIR/SURFACE JOB ANALYSIS

OPERATOR INPUT
 VEH COST = 285.00/HR.
 SWATH WIDTH = 66. FT.
 APP SPEED = 115. MPH
 FERRY SPEED = 125. MPH
 TURN TIME = 27. SEC
 LOAD TIME = 3.0 MIN
 HOPPER LOAD = 300.
 BASE TO LOAD = 10.0 MI
 LOAD TO FIELD = 3.0 MI
 APPLY 3.00/ACRE
 COVER 160. ACRES
 RUN LENGTH = 0.25 MI
 PRICE = \$2.00/ACRE
 END

COMPUTER OUTPUT
 UNIT COST = \$2.01/ACRE
 JOB LOADS = 1.60
 JOB RUNS = 80.00
 WORK RATE = 141.6 AC/HR
 JOB TIME = 67.79 MIN
 JOB PRICE = \$320.00
 JOB COST = \$322.03
 PROFIT = -0.6%
 GIVE JOB TO COMPETITOR
 END

CHANGE
 RUN LENGTH = 0.50 MI

COMPUTER OUTPUT
 UNIT COST = \$1.48/ACRE
 JOB LOADS = 1.60
 JOB RUNS = 40.00
 WORK RATE = 192.8 AC/HR
 JOB TIME = 49.79 MIN.
 JOB PRICE = \$320.00
 JOB COST = \$236.53
 PROFIT = 35.3%
 END

Figure 2. Job price required at various application rates in order to maintain 25% profit.

AIR/SURFACE JOB ANALYSIS

OPERATOR INPUT
 VEH COST = 285.00\$/HR
 SWATH WIDTH = 66. FT.
 APP SPEED = 115. MPH
 FERRY SPEED = 125. MPH
 TURN TIME = 27. SEC
 LOAD TIME = 3.0 MIN
 HOPPER LOAD = 300.
 BASE TO LOAD = 10.0 MI
 LOAD TO FIELD = 3.0 MI
 APPLY 1.00/ACRE
 COVER 160. ACRES
 RUN LENGTH = 0.25 MI
 PRICE = \$2.30/ACRE
 END

COMPUTER OUTPUT
 UNIT COST = \$1.84/ACRE
 JOB LOADS = 0.53
 JOB RUNS = 80.00
 WORK RATE = 155.1 AC/HR
 JOB TIME = 61.91 MIN
 JOB PRICE = \$368.00
 JOB COST = \$294.10
 PROFIT = 25.1%
 END

CHANGE
 APPLY 3.00/ACRE
 PRICE = \$2.52/ACRE

COMPUTER OUTPUT
 UNIT COST = \$201/ACRE
 JOB LOADS = 1.60
 JOB RUNS = 80.00
 WORK RATE = 141.6 AC/HR
 JOB TIME = 67.79 MIN
 JOB PRICE = \$403.20
 JOB COST = \$322.03
 PROFIT = 25.2%
 END

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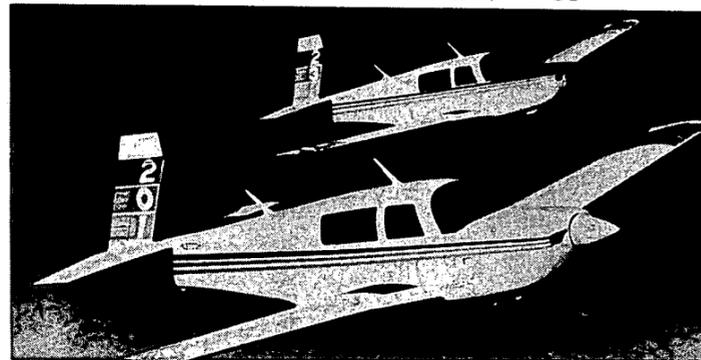
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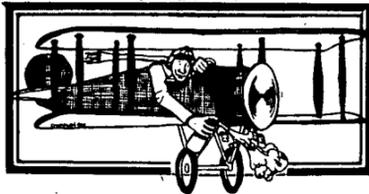
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A few steps to help keep working relationships with beekeepers

Introduction: In recent years there have been an increasing number of cases of honeybee kill in North Dakota, particularly throughout the extensive sunflower production areas of southeastern and east central North Dakota where sunflower insect problems have necessitated considerable control efforts. These bee losses are not only critical to sunflower producers who depend upon bee pollination for maximum yields but, more importantly, these losses have been especially unfortunate for commercial beekeepers who depend upon maximum colony strength for high honey production.

The following information is intended as a guideline of points to keep in mind when you are called upon by your farmer-customers to engage in spraying of crops, such as sunflower, that are highly attractive to bees. Please be aware of these guidelines and make every effort to hold bee losses to a minimum. By doing so you will help to insure continued good working relationships with farmers and commercial beekeepers as well.

1. Whenever possible, select insecticides that have low hazard to bees. (Information on pesticide classifications for bee kill potential is



available through the Entomology Department at NDSU.)

2. Timing of insecticide application: A. Never spray a crop in bloom unless it is absolutely necessary. B. If spraying a crop in bloom is necessary, do the spraying when there will be minimal bee activity in the fields preferably during the evening hours whenever possible. During most summer evenings, honeybees leave fields by 8:00 p.m. and do not begin to return until 8:00 a.m. or later.

3. Modify control programs according to weather: a. Cold temperatures prolong the residual of insecticide whereas warm temperatures break down insecticide more rapidly. b. Warm temperatures in late afternoon, early evening or early morning can "hold" bees in blooming fields for longer than normal periods. c. Pay attention to wind direction and velocity as this relates to beeyard locations in

proximity to fields that are to be sprayed with insecticide.

4. Applicators who are unsure of where bee hives are located should find out by: a. Consulting with farmer-customers. b. Obtain maps of beeyard locations within intended spraying areas (contact North Dakota Department of Agriculture in Bismarck-Phone No. 701-224-2232). Allow 1-2 weeks for maps to be received. Pollination sites are not shown on these maps.

5. When spraying in close proximity

to beeyard locations and the hives cannot (for one reason or another) be moved or covered, use a drift reducing additive such as Nalco-Trol to minimize insecticide drift to the hives.

6. Extensive research in California and in the state of Washington has demonstrated that PennCap-M (microencapsulated methyl parathion) is too hazardous to be applied to any area at any time when honeybees are present in the field or within one mile of the area to be treated.

Another case of 'the one who yells the loudest gets taken care of first'

All over the U.S., environmental activist groups are demanding the ban of 2,4,5-T based on the evidence that it increases the chances of developing tumors.

However, Dr. Richard Wilson, a Harvard scientist recently calculated the risks associated with the spraying 2,4,5-T and found that this is not the case. If a person worked at applying 2,4,5-T with a backpack sprayer

for five days a week, four months a year for 30 years, his/her chances of developing a tumor would be .4 of a million.

In comparison, other risks associated with developing a tumor are:

	chances per million
Smoking cigarettes	1,200.00
Being in a room with a smoker	10.0
Eating 1/4 lb. charcoal broiled steak per week	0.4
Drinking one can of diet soda with Saccharin per day	10.0
Drinking milk with aflatoxin or four tablespoons of peanut butter per day	10.0
Drinking one can of beer per day	10.0
Sun bathing	5,000.0

With reliable data like this it is hard to understand why society puts up with one-issue, self-interest groups. Maybe we are reverting to a childhood behavior where "the one that yells the loudest usually gets taken care of first."

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All pesticides have drift potential; and drift costs someone some money

Spraying droplets under 150 microns in size when using a water carrier is probably just wasting an aerial applicator's time and materials, according to Barry Jacobsen. In addition, he is more likely to be causing pesticide drift. Jacobsen, plant pathologist with the University of Illinois, was the key speaker at four southeastern ag aviator fly-in clinics sponsored by Chevron Chemical Company.

Droplets under 150 microns, notes Jacobsen, will generally just evaporate and then drift away. Droplets should not be too large, though, because the applicator will not get effective coverage with the material he is spraying.

"The ideal droplet size for effective coverage and fewer drift problems is between 200 and 400 microns," he says. "If you look at the size of a micron — it is approximately 1/25,000 of an inch — then a 500-micron-sized droplet is approximately 1/50th of an inch, which is not

really big at all."

Two factors directly affect droplet size, notes Jacobsen. They are the orientation of the nozzle orifice to the wind shear and the pressure that is generated from the orifice.

"Keeping the pressure down to 20 or 30 pounds per square inch," he says, "and setting the nozzles 0° relative to the wind

75°F;

•The relative humidity is greater than 63%;

•The wind velocity is less than 6.2 mph; and

•Less than 4.6% of the droplets are under 100 microns.

Other recommendations Jacobsen makes to further aid in drift control are;

•Adjust nozzle height or

boom height to 6 feet above the crop for best deposition and control;

•Place nozzles asymmetrically to give more uniform coverage; and

•Place the boom in an area where the air is moving relatively uniformly, which, in most aircraft, is down and back from the trailing edge of the wing.

The purpose of the fly-ins, according to Tony Rutz of Chevron, is to give pilots the latest information on better application techniques. This can help them control drift while still getting effective coverage.

"As a major supplier of a variety of pesticide products, we at Chevron want to help pilots reduce drift as much as possible," Rutz says. "All pesticides have a drift potential," he says, "and drift always costs someone money, regardless of the pesticide involved. With a contact herbicide, drift injury is readily apparent on adjacent green foliage. With insecticides, the problem is not as visible, but can still be serious. When insecticides drift, the farmer is wasting money and reducing his effectiveness by getting less than the full rate of material on the target crop."

Reprinted from MN AAA Newsletter

'Droplets under 150 microns will generally just evaporate and then drift away . . .'

shear will help produce larger droplets."

Jacobsen also points out other factors relating to drift problems. He says that pilots could reduce over 90% of their drift problems if they sprayed when:

•The temperature is under

boom height to 6 feet above the crop for best deposition and control;

•Place nozzles asymmetrically to give more uniform coverage; and

•Place the boom in an area where the air is moving relatively uniformly, which, in

Deadline for aircraft registration

Friday, May 15th is the deadline for state registration of aircraft for 1981 according to Harold G. Vavra, Director of the State Aeronautics Commission.

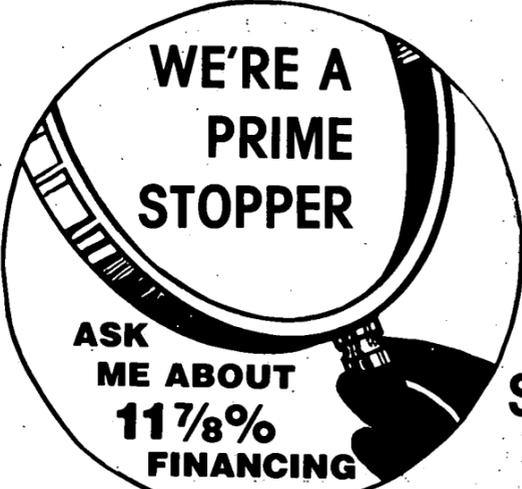
Vavra estimated as of mid April, that there are still over 400 civil aircraft owners in North Dakota who have not applied for their 1981 state registration, which is required by State law.

In the event you have not received an application form or have mislaid your forms, please contact the Aeronautics Commission office by calling 224-2748.

Aircraft registration applications postmarked after Friday, May 15th are subject to delinquent penalties, Vavra said.



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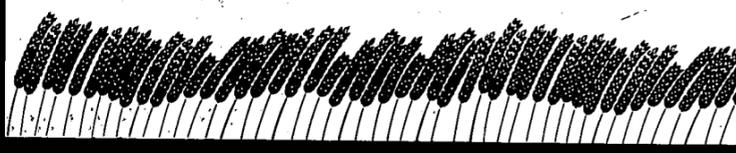
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Vegetarian geology

Allen Linderman, Carrington, a member of the N.D. Flying Farmers Association wrote a letter in January, 1981 to Harold G. Vavra, Secretary of the N.D. Flying Farmers about a new book authored by him.

Allen Linderman has written and published a 74-page book titled: "Vegetarian Geology — Is It a True Concept?". Allen says in his letter that this book represents a life time of study and research. He said it took him over 6 months to write this book. That it is both interesting and educational.

Attached to the book is a summary which keys the important issues covered by the book including:

1. From the introduction to the last paragraph, it will hold your interest.
2. Appeals to the young, student and all ages of interest in life.
3. Are coal, oil and carbons really a combination of vegetation and animal life? This book answers this question.
4. Is there a carbon and mineral ring all of the way around the earth, even under the oceans, not contiguous, as on land? If so, these beds had to be laid before the oceans were.
5. Oil and gas are now found thousands of feet below fossilization. Fossils are found in many kinds of rock and clay, a few in coal and oil. Which did they make, clay, rock or carbon? Or are they just a foreign material in each, mineralized by their surroundings?
6. How could vegetation place these beds of different gravity and kind of coal, oil and gas, miles into the earth?

7. Will oil be found as deep as 50,000 feet deep? This theme shows it may.

8. Over 80 years ago, it was proven the earth and all planets in the solar system once had a ring system. Also rings on Saturn would be eccentric, space between rings thought to be empty would have something in them. Many rings.

9. The theory the earth was the center of the cosmos held sway for nearly 17 centuries. Copernicus, Kepler and Galileo disagreed, saying the sun was the center of the Solar System. The vegetarian theory will not live out this generation.

10. Since 1860, experts have been predicting the world is rapidly running out of oil. Is this true today? Is a shortage or a surplus of oil, and an energy crisis the same thing?

The summary of the book concludes "Read this refreshing new outlook on geology. It is the first of its kind in over 50 years.

Allen Linderman in his letter says that it has been his privilege to speak to a large group on his book sponsored by the Douglas Cooper Company of Los Angeles on the Queen Mary at Long Beach, California. The book is available in many book stores, according to Linderman at Bismarck, Fargo, Minot, Dickinson and others.

The Secretary of the Flying Farmers has read most of the book and will say that it is most fascinating to say the least and should be of interest to all persons interested in oil, coal and other forms of energy.



the windmills
of my mind

by patricia estes

Watching the Columbia was a beautiful sight

I had determined not to get caught up in the space shuttle fever. It's not that I don't experience the excitement of accomplishment and even an outburst of patriotic fervor. I do, I can!

I will recall the first space flight now over two decades ago. I watched that launch in my brother's apartment. I'm not sure why we were there at that time.

My dad was seated next to me on the couch. Nearby in walkers were my rather young son, Joel and equally young nephew Mike.

As liftoff began, my dad began shouting, "go, go, go!" An aviation fan and former private pilot in his imagination he soared with that first flight.

I can remember that first walk on the moon. I watched that televised, lying on the floor, surrounded by my four kids and some friends, including my best friend and husband, Richard. We were all mesmerized, fascinated, silent in awe.

I just decided not to get all involved in the space shuttle because of my reading compulsiveness. I knew once I started reading about Columbia, I'd read every bit and piece and I really didn't have the time to do that. When you work in the media, you are swamped each day with press releases, announcements, letters, research reports and other reading material.

I also read three daily papers, one weekly news magazine, several business magazines plus pleasure reading.

I, therefore, discipline myself. I've also accepted my limitations. I can't be informed on everything of interest to me so I concentrate on those topics related to my job and my personal life style demands.

And I'd done alright on the space shuttle commitment. Hadn't even caught the liftoff on television.

Then it happened. On touchdown day, I called Larry Linrud to discuss something about Relative Wind.

Nope... he's on the phone, his partner Gerry Beck reported... and right after that we are heading over to my house for lunch to watch the Columbia landing.

Why don't you meet us there, suggested Gerry. Okay, I responded. On my way out I issued an invitation to Richard to join us.

And so it was that I watched that beautiful sight of Columbia appearing as a dot in the sky... and then looming larger and larger until it landed.

I will remember this event as very special. I watched it in the midst of four pilots: Gerry, Larry, Bob Odgaard and Leon Novetske.

They provided commentary from an entirely different angle. We weren't watching the traditional news channel coverage but an independent station which provided very little commentary.

That was great! We were free to concentrate on the actual event unfolding before our eyes.

And the side comments by these four pilots helped me view this exciting space flight accomplishment from a totally new perspective.

Afterwards, we all trooped upstairs to luncheon served by Gerry. It was pretty good... we might make that a monthly event of its own. What do you say, Gerry?

Am I glad I watched that history making landing? Oh, yes... but I've been reading every bit in the papers since then about the Columbia.

See... I told you I'm a compulsive reader.

Choosing

Some, but not all, crashes occur without warning, or when the aircraft is completely out of control. Others afford the pilot the opportunity for some choice as to where he can put the aircraft down. An airport is the best choice — if you are in trouble, go where you can get the most help; not the least attention. Use the Mayday frequency (121.5), declare an emergency and ask for guidance. If you are out of radar range of the air traffic service (which is not likely, unless you are experiencing radio failure), immediately locate your position on a chart and see what is within your range in the way of suitable landing terrain.

Probably the best means of improving your chances for surviving an emergency landing without injury is to practice the procedure regularly. You had to learn the procedure when training for your certificate, but have you retained that skill?



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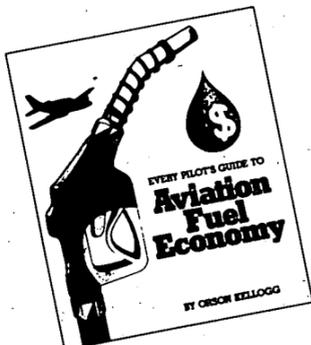


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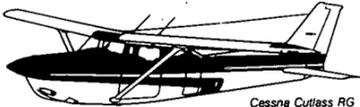
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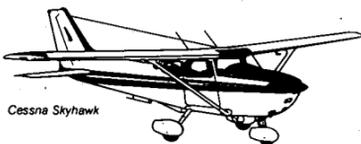
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