Another year is coming to a close, with this in mind, it is time to arrange your schedule and make plans to attend the NEW 6th Annual CFI Workshop Refresher Course. This course is now a combination of the prior airplane and instrument courses.

The North Dakota Aeronautics Commission and the University of N.D., in cooperation with the Federal Aviation Administration, will sponsor the program presented by the Flight Instructor Refresher Team from the FAA Academy at Oklahoma City.

As you are probably aware, there have been many changes this year in FAR Part 61. The Part 61 changes, certificate renewals and revocation rides will be the focal points of this year’s Refresher Course.

**Dates:**
- December 17th, 18th, 19th, 20th.

**Place:**
- Lecture Bowl, University Center, University of North Dakota

**Registration:**
- December 17th from 3:00 - 6:00 at the Holiday Inn. Cocktail Hour will be from 5:00 - 7:00. Two free drink tickets will be included in your registration packet.
- $25.00 - which will include texts and materials, three noon banquet programs, CAT-1 simulator time, eligible for log book entry for 6-month proficiency time. Free Cocktails and Door Prizes.

**Accommodations:**
- At the Holiday Inn for out of town CFI registrants: Single Rooms $12.50 per night, Double Rooms $17.50 per night.

**Special Door Prize:**
- Will be drawn for those participants who register before 6:00 p.m. on December 17, 1973 at the Holiday Inn.

The FAA, NDAC and UND Aeronautical Department cordially invite you to attend the 6th Annual C.F.I. Workshop Refresher Course. We are looking forward to seeing you.

Effective November 1, 1973, the new FAR 61 (revised) requires that when flight instructors exchange or renew their flight instructor certificate, they show at least 20 hours of experience or instruction in the class and type of aircraft, that they wish to have on their new flight instructor certificate. So bring your log books.

The first of December you will be receiving your registration form and program. If there are any questions, feel free to call or write the Aviation Department, University of North Dakota.

(POINT OF INTEREST) Jay B. Lindquist of Hettinger is the first recertified flight instructor in the state under new Part 61.

**1973 AVIATION MECHANIC SAFETY AWARDS PROGRAM**

Aviation mechanics whose innovations have contributed to general aviation air safety in 1973 in North Dakota may submit entries until December 31, 1973 for the FAA's annual Aviation Mechanic Safety Awards Program.

The North Dakota winner will receive an FAA certificate signed by the FAA Administrator and will be offered a free aviation training course of his choice at the FAA Aeronautical Academy at Oklahoma City. In addition, the winner will receive from the North Dakota Aeronautics Commission an award of up to $250.00 to pay for his travel and living expenses while attending such training course. Winners will be announced in January, 1974. Contest guidelines and entry blanks may be obtained by asking for the FAA's Advisory Circular No. AC-60-2K, from the Federal Aviation District Office, Box 5450, State University Station, Fargo, N.D. 58102.

**NEW FAA PART 61 REQUIRES PILOT BIENNIAL FLIGHT REVIEW**

The Federal Aviation Administration has issued its long awaited up-grade requirements for training, testing and certification of all pilot categories which became effective November 1, 1973, with a one year transition period. The rules include a biennial "flight review" for all pilots not engaged in airline or commercial operations which already require periodic flight checks. All pilots required to get a "flight review" given by a flight instructor, must take such flight review by Nov. 1, 1974 with the flight instructor's notation in the pilot's log book in order to be legal.
The Foro Alouette helicopter, flown by a former piloting instructor, took off from the airport. The introduction of the Alouette into the air force marked a significant milestone in the evolution of aviation in Canada. The Alouette was designed and manufactured in Canada, and its introduction signified a strong commitment to developing and maintaining a capable and modern aviation force.

The Alouette was used in a variety of capacities, including transportation, surveillance, and combat. Its capabilities were particularly important during the Cold War, when the air force was tasked with monitoring Soviet missile sites and other strategic targets.

Over the years, the Alouette fleet was expanded and upgraded to meet evolving operational needs. The air force also began to incorporate more advanced technology into its operations, including the installation of advanced avionics and communication systems.

Despite these advances, the Alouette remained a vital part of the air force's fleet until the late 1980s, when it was gradually phased out in favor of newer and more advanced aircraft. The Alouette's legacy lives on, however, as a symbol of Canada's ongoing commitment to aviation and national security.
PILOTS REMINDED ELT INSTALLATION DEADLINE NEARS

The December 30th deadline for installation of Emergency Locator Transmitters (ELT) in nearly all categories of general aviation aircraft is rapidly coming up, Mervyn M. Martin, Director of the Rocky Mountain Region of the Federal Aviation Administration, Department of Transportation, said today.

He noted that the requirement for the equipment, which automatically sends a distress signal when an aircraft crashes, enables search and rescue teams to find the downed aircraft quickly, often in time to save the lives of those on board.

Martin said that Congress, in 1970, passed the Occupational Safety and Health Act, that became law in 1971. The amendment to this law requiring installation of ELT equipment on private and business aircraft, was sponsored by Colorado's Senator Peter Dominick (R). This action amended Section 601 of the Federal Aviation Act of 1958, thereby making the FAA the regulating agency responsible for its enforcement.

Any extension of the December 30 deadline would have to come as a result of Congressional action and FAA cannot grant any exemptions, Martin said, although there are specific exemptions, such as crop-dusting aircraft.

MAX CONRAD ARRIVED SAFELY IN AUSTRALIA

Last September 22nd, Commander Aviation of Bismarck hosted a dinner in honor of Max Conrad, noted Winona, Minnesota endurance record pilot. Max in an informal 2-hour talk, enthralled an audience of approximate 130 people of which a good one-third were ladies. In listening to the ladies after the talk, many comments were heard that they enjoyed his style of delivery and non-technical parlance. Max talked about his flights and especially about the attempt to circumnavigate the globe via the poles and his mishap at Antarctica. The biography "Into the Wind" written by his friend and former commercial pilot Sally Budeegeisen, has chronicled the famous pilots exploits during his past 45-year career.

Commander Aviation prevailed on Max to deliver a PA-29 Twin Comanche, which they had sold to Australia. The ship was a turbo charged model fitted with counter-rotating propellers and modified with a complete Robertson STOL kit, and according to Conrad, one of the best aircraft he had ever ferreled. He departed from San Francisco on the 24th of September, landing in Hawaii on the 27th in fifteen hours of flying time, landing with a four-hour fuel reserve. He spent four days in the hospital on Johnson Island in an unplanned landing, because of a severe case of disentary, although he had on enough fuel and had planned on flying to Tarawa. The 70-year old pilot arrived in Rock Hampton on the 2nd of October, where he was again to be feted by a dinner, which turned out to be a mammoth outdoor beef barbecue party attended by 2,000 of the inhabitants of 6,000 souls of Rock Hampton.

BISMARCK MUNICIPAL AIRPORT HAS NEW FIXED BASE OPERATOR

Steel is being erected for a building 40' X 40' for a office and classroom complex and a 60' X 60' shop and hangar to house Bismarck's newest fixed base operation to be known as O.K. Aviation. The building is being erected just north of the service road leading to the terminal building. The two section building is to cost $100,000. and the project is to be completed by December 30, 1973. Hardsurfacing for a driveway, auto parking and a ramp for aircraft parking have all been completed.

Dr. Herbert J. O'Keefe, a radiologist at one of the local hospitals and one of the incorporators of the business said that the new facility will offer all the advantages of general aviation service including flight training, charter service, air ambulance, maintenance and aircraft rentals.

A flight simulator will also be installed, as well as a weather teletype. O.K. Aviation is employing four people and is presently operating temporarily from offices in the west end of the south hangar building on the field. Employed are Neil Kelstrom, Mechanic; Lyle Hilden, Chief Instructor; Marty Gartner, Secretary & bookkeeper and Robert Bennett, General Manager.

The firm has a fleet of five aircraft: 2-150 Cessnas's, 1-172 Cessna, 1-210 Cessna and a Twin Bonanza D-50 and is franchised as a Cessna Pilot Training Center.

JAMES PETERSON, FARGO FIXED BASE OPERATOR OFFERS FREE PILOT REFRESHER SEMINAR

'FREE PILOTS REFRESHER SEMINAR' to be held at the Holiday Inn in Fargo on 26th January, 1974. Flight Development, Inc. will conduct a free pilots' refresher course in order for pilots to comply with the academic phase of the new FAA biennial flight review requirements. The review will cover FAA regulations, flight performance and maneuvers, new procedures and flight safety.

Over 50 rooms have been reserved at Fargo's new Holiday Inn, adjacent to West Acres Shopping Center, with Dutch lunch, cocktail hour and buffet planned. Spend a weekend vacation with indoor pool, shopping and flying talk while accomplishing half of the required flight review.

Mail your reservation now to: Flight Development, Inc., Box 5076, University Station, Fargo, N.D. 58102

Please reserve a room for ____________ dates
I plan on attending the cocktail hour and buffet yes ______ no _______
Remember, January 26th, 1974 at 9:30 a.m. at Holiday Inn.
ELGIN: After struggling with a marginal airport that did not lend itself to expansion, this city is planning on moving to a new site. The Airport Authority will be doing the entire project on their own, as Elgin at the present time, cannot qualify for Federal-aid. The reason being that at the present time, they have only one aircraft and consequently not enough traffic. They presently will be buying only enough acreage for a NW-SE and parking area. Plans are for a turf land- ing area, which will be lighted and in which costs the State Aeronautics Commission will participate to the extent of 50%. The State Aeronautics Commission does not participate in costs of land purchases.

ELLENDALE: A go-ahead has been given to an engineering firm to prepare plans and specifications and to apply for a Federal-aid grant, to improve the Ellendale Municipal Airport. Plans call for the hardsurfacing of the principal runway with a ramp area and connecting taxiway. It is expected that the State Aeronautics Commis- sion will also participate in the project.

ENDERLIN: The Enderlin Airport Authority is in the process of purchasing the Ohike private airport. This is another project in which the local airport authority will have to go it alone, as Enderlin under present criteria, is not eligible for Federal-aid. Criteria under the ADAP program (Airport Development Aid Program) call for all Federal-aid projects to be no nearer to each other than 30 minutes of driving time (legal). This proximity to the City of Lisbon, which is on the National Air- port Plan, precludes aid to Enderlin.

FESSENDEN: This Wells County City has been in a dilemma as to a location of an airport. For several years. Plans do call for the purchase of suitable land as soon as a site can be chosen.

FORT YATES: After a "on again" 'off again' status for nearly 3 years, the Fort Yates project is on again. The FAA grant was available for nearly 2 years, but the hitch was in the Economic Development Administration Funding. Plans call for a airport approximately 1 mile SW of the City, which will put it on the SW side of a highway that surrounds Fort Yates on the south. The Standing Rock Sioux Tribe will be the local sponsor and will be building a NW-SE 3700' X 60' hardsurfaced with a NE-SW turf of 3000' X 120' plus ramp area and connecting taxiway.

GARRISON: This city on the north side of Garrison Reservoir is trying to locate a new site. The present airport and the Municipal Golf Course were co-tenants for years about 1 mile SE of the City, but the rebuilding of N.D. Highway 37, which is also the north boundary of the airport, caused some problems, so it was decided to relocate the airport. The old site was not readily expandable nor was it eligible for Federal-aid because of the Golf fairways crossing the runway.

GRAFTON: Plans and specifications are being prepared for the construction of a new E-W runway which will be hardsurfaced. The present N-S runway will also be re-constructed and the ramp area will be enlarged and connecting taxiway built. The project will be built under Federal Grant, State Aid and local funds.

HETTINGER: With a target date of bid opening shortly after the first of the year, this active city in the SW area of the State, will go into construction on a NW-SE runway, ramp and connecting taxiway early in 1974. The NW-SE will be con- structed and lengthened to 300' X 75' with a ramp of 100' X 20', and connecting taxiway of 965' X 30'. Widths of over 60' require extra justification before FAA will participate in the cost of construction. This consists of projected use of light and medium twins of the facility. To accomplish this, a letter of intent of use by operators of light and medium twins, must be secured.

HILLSBORO: The newest and most active City is in process of forming an Airport Authority according to Ron Stuart, the mayor. The implementation of an Airport Authority should give Hillsboro good long range planning and continuity of purpose the Mayor said. Improvements are direly needed and Hillsboro must act in the near future he added. Hardsurfacing of the principal runway is planned.

KENNARE: Hardsurfacing of the N-S runway is planned for a 1974 project. Possibly 3000' X 50' will be paved with a ramp and connecting taxiway. Kennare has been fighting mud in the spring thaws for quite a few seasons and the pavement will be a welcome relief.

KILLDEER: Dunn County has become the latest county to form a County Airport Authority and this is a county that perhaps should have had an airport somewhere equidistant to Manning-Killdeer and Dunn Center. Serious thought should be given to a joint use airport and with the road system presently in use, it would appear that an airport somewhere Southeast of Killdeer would be the most logical location.

LANGDON: Federal aid will be requested to strengthen the existing 3000' X 50' with an overlay plus extending the ramp area 150' X 330' and also build a connecting taxiway of 40' X 225'. Congestion of the terminal area by aircraft associated with the construction of the anti-ballistic site is creating quite a problem according to Hank Charbonneau, Chairman of the Langdon Municipal Airport Authority.

LAKE WILLIAMS TOWNSHIP: This Kidder County Airport near Robinson, N.D., was completely graded and hardsurfaced this past construction season. The principal runway 32-14 of 2550' X 75' was hardsurfaced as was the first 1300' of 03-21 on the SW end plus a ramp area. The remainder of 03-21 consists of well established turf. Unicom is available and lighting will be installed in 1974.
Old airplane sayings, like old wives' tales, never seem to wear out. Take the one that admonishes pilots to make sure their engine is fully "warmed up" before taking off. A cold engine may conk out on takeoff when you need it most, the story goes, so be sure to warm it up. This warning had a measure of truth back in the early history of aviation when poor ignition, poor fuel, or unsophisticated engine design led to frequent engine failures.

But today, it is hazardous to operate the typical "flat-six" air-cooled engine used to power modern light planes for extended periods on the ground. Unless the weather is very cold, the time needed to taxi to an assigned takeoff runway is generally sufficient to bring the engine to optimum operating temperature. (This does not apply to the relatively few radial engines, used mainly in agricultural and antique aircraft, or liquid-cooled engines in vintage WWII planes.)

The exact ground running time recommended for a particular engine at a specific ambient temperature can be obtained from the engine manufacturer. Factors to be considered, in addition to prevailing ground temperature, are cowl flaps and high crankshaft/propeller shaft gear ratio. Either of these can cause the engine to run at a dangerously high temperature after only a short period of operation on the ground.

The problem arises because modern engines may be said to be streamlined "to a fault." Furthermore, while a sleek cowl enclosing the engine reduces the overall drag, the fit is so snug that it often restricts the amount of cooling air which reaches the last two cylinders on each side of the crankcase, when the engine is operated on the ground with the plane stationary.

HEAT IS THE ENERGY: Ram air is needed to permit a sufficiently cooling draft of air to reach all cylinders, and this is achieved only when the aircraft is in its natural element, cruising through the skies. Prolonged run-ups on the ground may over heat the aft cylinders.

The penalty for excessive heating is varied, but in all cases it is expensive. High cylinder head temperatures can be expected to produce scored cylinders and broken rings, which could lead to the total destruction of the engine. This can occur on the ground during run-ups, or soon after takeoff when a sudden rush of cool ram air causes the overheated rear cylinders to cool rapidly. The hot cylinder barrels, cooling faster than the pistons, could cause the pistons to seize—resulting in an emergency landing or a serious accident.

In the "old days" one of the chief reasons for running an aircraft engine for any length of time on the ground was uneven quality and performance of lubricating oils. This is no longer valid because of the ready availability of a wide variety of high quality aircraft lubricants: if an owner or operator sticks to the engine manufacturer's recommendations he can expect trouble-free performance.

How is a pilot to know when his aircraft is safe to take off? Normally, the engine is ready to go when it will accept a steady throttle advance without hesitation while the oil pressure remains steady. If the aircraft is equipped with cylinder head temperature gauges, the aircraft manual will indicate approved operating ranges.

For most general aviation aircraft ground power checks, including carburetor heat, magneto and propellers should be done at about 1,700 rpm, unless otherwise stated by the aircraft or engine manufacturer. In order to take advantage of all possible cooling, the run-up should be done facing into the wind.

To avoid engine damage due to foreign objects carburetor heat should never be used while taxiing or during extended ground run-up. With carburetor heat on the in-rushing air bypasses the filter and enters the engine directly, bringing with it abrasive particles; so carburetor heat should be checked immediately before takeoff with the aircraft on a paved surface or sand -- never on sand.

On tightly cowered aircraft the cooling effect of ram air is also restricted during takeoff and climb, even though the plane is moving through the air. Improved engine performance can be gained by climbing out with the fuel mixture in full rich. The evaporation of the extra fuel has a cooling effect on the engine, which is lost if the mixture is leaned out too soon.

For best engine cooling, the climb out speed should be consistent with the aircraft's best rate of climb-by climbing at a high rate of speed, engine cooling will be more effective. A long slow climbout, with lean mixture, will tend to overheat the engine and could cause internal damage.

The cooling efficiency of the engine can be affected by factors other than pilot manipulation. Cooling fins broken from cylinders, missing or bent baffles, plates, or gross dents in the cowlings can result in dangerously high operating temperatures, even during actual flight. Visual inspection of the engine should catch these deficiencies.

Modern aircraft engines are sophisticated, well-engineered machines that do not require "babying" under normal circumstances. They function best at altitude, and the sooner they level off "upstairs" the better they like it. Prolonged warm-ups and shallow climbouts are for the older generation.

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