Skywriter

Monthly Newsletter of the Calgary Ultralight Flying Club

March 2000

From The Cockpit

by Brian Vasseur

There's been quite a bit going on since the last newsletter. This coupled by all the warm weather means that most of us were busy flying to attending some event.

I was unable to attend the annual flying club dinner this year but I've been told it was a good time. Apparently the food was excellent so I'm quite disappointed I missed it. I also missed out on the Eureka starter kit being offered at the auction but maybe next year. I always enjoy the silent auctions, and I would have liked to have been there to pick up a few more things for my collection.

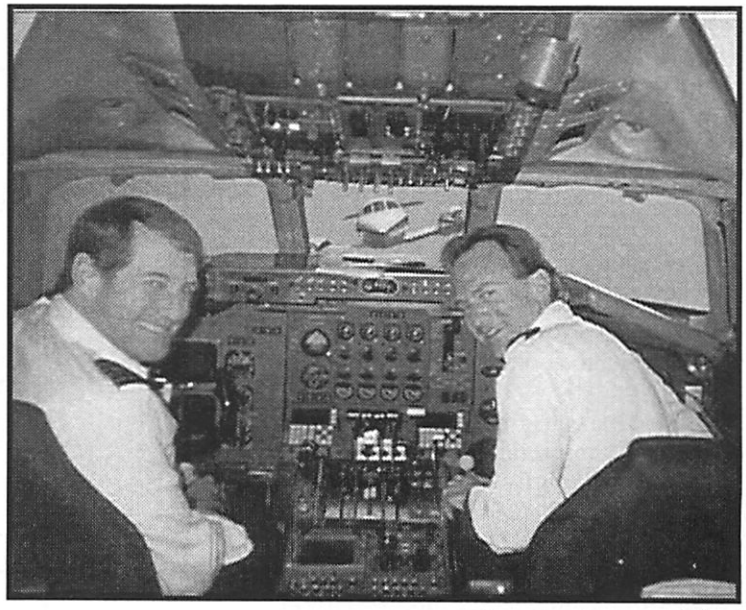
I've received an email from Bob Robertson from the St. Albert Flying Club and they're organizing a flight down to Sylvan Lake on March 4th and 5th. If you'd like to do something with this club then give Dave Lorenz a call at 780-939-2819. The St. Albert Flying Club is also having their fly in about the middle of September and would like us to attend.

I've also received an email from Rob van Spaandonk from Holland. He flies a Pegasys XL-Q and wants to find out if he can do any ultralight flying while he's here in the last half of March. I don't know what kind of license he has so I don't know if he can rent from any of the flying clubs, but if you'd be interested in doing some dual with him I'll forward his email address to you and you can contact him. I'll leave it to you to ensure that he's properly certificated for a legal flight if you are thinking about it.

This month I also saw an article in AVFlash (www.avweb.com) offering a swivelling B727 renovated to a house. Being the curious sort, and because I think this would be kind of neat I inquired. The short answer is that the gutted 727 is only $25K US, however renovations and installation on a swivelling tower 30 feet in the air is an additional $250K US. It would definitely make you the most popular pilot in the club, so if you think you can find 6 acres to put one of these then this might be the house for you. For a small amount more they'll install it in a lake. Check it out at www.maxpoweraero.com/achomes.htm

Something else I've noticed in the news is that there have been more collisions of small planes in the states. I haven't heard the follow ups to find out what the causes of the accidents have been so I don't know if there's any trend starting. I have been wondering if using GPS has the potential of more aircraft being in the same airspace. You would expect that if you're not in a designated air route that you're less likely to find conflicting traffic, but does flying point to point make you more likely to be in exactly the same place as another plane. Personally I think GPS is one of the best tools to come to aircraft since radios so I'm not advocating not using them. Just don't let the fact that you have a GPS preclude you from keeping your eyes open and announcing yourself over the radio if you have one.

Enjoy the warm weather and get flying if you have a chance. ✈



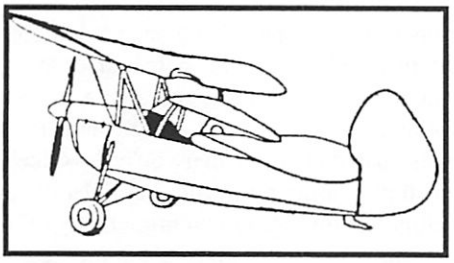
Pay attention now fellas!

Mailbag

Editor:

I was very pleased to read in your column "Feature Kit" a short article about the "Flying Flea" and a beautiful photograph of the vintage HM-14 of the thirties. I would like to add some information to your text.

In 1937, Henri Mignet moved to Chicago and created the American Mignet Corporation with a group of American



Businessmen. He developed 3 prototypes, one single seater and 2 two seater. One of his technicians of the time, Frank Easton is still alive and active in the Pou world. In 1938 Mignet had to go back home as war was imminent. After the Liberation, the French Air Ministry asked Mignet to develop a folding wing small liaison aircraft for paratroops. It was the famous HM-280 "Pou-maquis". A modified and slightly beefed up version of the HM-280 was made in the fifties. Mignet called it the HM-293. Hundreds of this small wood and fabric stall and spin proof little airplane were and are still built by amateurs. In 1993, Rodolphe Grunberg, with Mignet's family approval, redesigned the HM-293 as an ultralight. More than one hundred of these models were built and are currently flying or under construction. I am distributing these plans with an English translation in North America. I am also currently building one myself.

In 1935, Mignet had created a company in France to manufacture Flying Fleas and sell them ready to fly. Mignet died in the sixties, but this company still exists, owned by the Mignet family. Two models of two-seaters are currently produced by the Mignet Company, the metallic HM-1000 Balerit, a kind of flying jeep, ideal for cross country flying (150 of them are flying all over the world) and the new HM 1100 Cordouan metallic wings and composite fuselage, with a gust absorber free wing, a Flying Flea for the third millennium. Several other companies in Europe manufacture and distribute kits of aircraft based on the same stall and spin-proof design.

An amateur built HM-380 was at Oshkosh last year. It was shown on EAA Experimenter. The March 2000 issue of Kitplanes has an article on the Balerit and the Cordouan. Last October, Henri Mignet was inducted into the EAA Hall of Fame during a touching ceremony in the Oshkosh museum. More than 300 EAA officials paid tribute to this great pioneer.

For more information, interested members can visit my web site: http://www.decollage.org/paulp.

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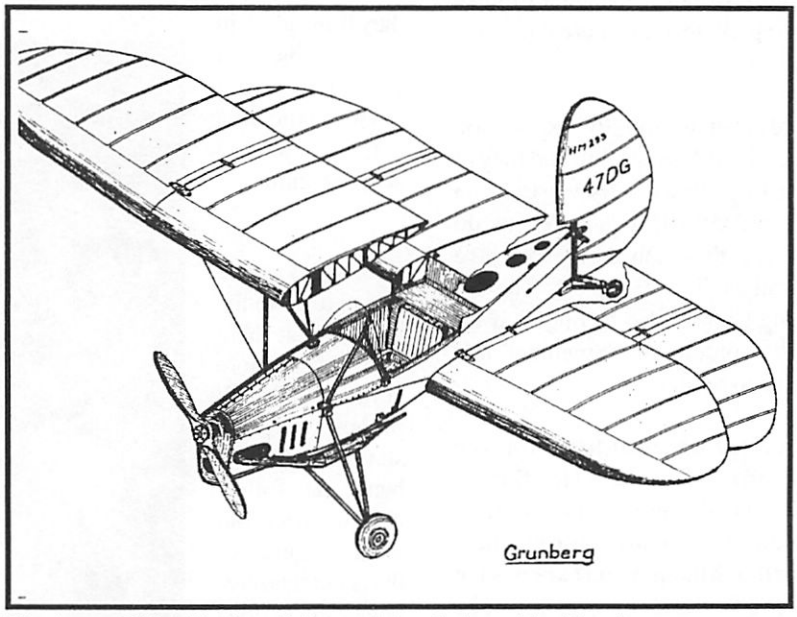
For more information on the Flying Flea see the February 2000 issue of the EAA Sport Aviation magazine, in which Paul is mentioned. - Editor



The latest HM-293 ultra-light model redesigned by Grunberg.

Skywriter

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Calgary Ultralight Flying Club

Meetings of the Calgary Ultralight Flying Club are held on the second Thursday of every month, except July and August, at 7:00 pm, at the Northeast Armoury, 1227 - 38 Avenue NE.

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Destinations

by Andy Gustafsson

It's been a while since my last flight. December 31-1999 to be exact. I had almost forgotten the brief moment of anticipation and the feeling of exhilaration that you get just before you open up the throttle for the take-off run, but there it was again. The 3 or 4 in. of snow that had accumulated so far did not hold back my yearning for the heavens. I had my destination punched in on my GPS, not because I needed to, but just because "it was there".

The 235 hours that I have accumulated on the 503 since Aug. of 94 seems to have smoothed out all the wrinkles in the internal combustion chamber. Just like a fine violin, the more you play the more you hone its performance. My tach. showed 5000 rpm and the speed was 70 mph indicated. Why was my Challenger performing like this? Opening up to 5600 rpm the speed jumped to 80 mph. I have never seen this before. It could have been the fantastic weather and the total lack of wind, the sunshine and the perfectly clear and stable air. I was flying along #2 highway north of Airdrie, and I was actually passing and pulling away from the traffic down there. The radio chatter came in from Beiseker, Three Hills, and Drumheller. Good reception. I announced my soon to be arrival to the Bishell-Carstairs traffic and immediately received a response from a southbound Cessna just west of Didsbury. Nice to hear alert pilots.

I could see the big hangar door at Glenn's place gaping wide open from many miles out. I overflew the runway well above circuit height for the wind check and turned back and down to circuit altitude announcing my pattern work on 123.2. The Cessna came back asking "Juliett Bravo, where did you say you were landing?" He must have been new to the area. Runway 16 lay before me with just a few inches of snow cover. I had phoned Glenn before I took off from my home strip, asking him about the conditions, just to be sure. The visibility to the east was endless and the distant mountains in the west looked like they were but a few miles away. Landing at Bishells in a Challenger with full flaperons in calm conditions, has got to be the easiest landing one could ever do. Wilf and Glenn were standing on the tarmac grinning in the bright sunshine when I shut down in the parking area. The last week has been quite nice to us lightplane pilots, weather wise. I can't think of a more satisfying outdoor activity than to bum around the countryside in a light airplane on a crisp, clean January day. The sun warming both heart and soul, not to mention the body.

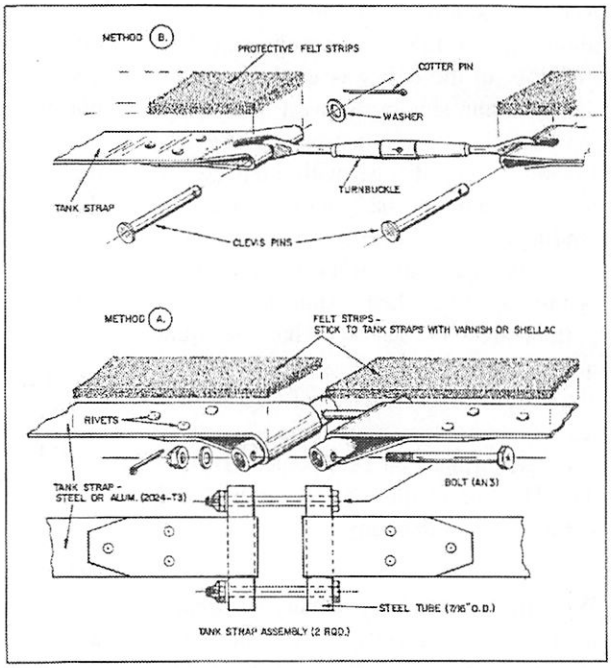
Well, the weekends of January has treated us to some great flying and the snow starved countryside looks truly out of place for the season. February came and surprised us all with lots of fluffy white snow. I have been servicing my skis and the installation went smooth. I just could not wait to try them out again. Because of the very light and fluffy snow, the main-skis are running just underneath the surface like two submarines. I have treated the bottom of my aluminium skis with kerosene, which makes them very slippery. Ski flying sure is a treat. You can land just about anywhere. The abundance of smooth grain fields makes it very reassuring, should you have an engine-out. The first ski flight of the season took me to the Poffenroth strip, then to the Kirkby Wildrose strip. The runways at both places were covered with virgin snow and made for the smoothest landings ever. A few miles east of the Poffenroth strip I spotted a few snowmobiles in a very large field. The riders were waving to me and tried to race me. I circled around and they gestured for me to come closer. I did a low pass to check the field, found it acceptable to land on and proceeded to set down in the soft powder snow. They were thrilled to have me land in their field and set off a barrage of questions about these light planes that are known as Ultralights. After a nice visit with these outdoors people I said so-long, fired up the engine, turned the nose to the south and quickly departed up into a perfectly azur blue February sky. The temperature was noticeable falling. The warm air coming from my heat duct was not as warm as it was earlier in the day. The CHT showed 325° on both cylinders, but the air goes through the cylinder cooling fins too fast to make me sweat in the cockpit. I'll have to work on the ducting a little. I am, however quite comfortable in my "Winston-made" seat, even when the outside temperature is dipping towards -20°° C.

Last Friday, Stu e-mailed me wondering if a 1:00 o'clock take-off from the Kirkby field was in my future. I never pass up the chance of going flying and just before 13:00 hours I touched down at Bob's. Here we were going to Glenns place again "up north" in Carstairs. As I have mentioned earlier, the Carstairs run is just right for an afternoon flight. The west winds were starting to bring in warm air aloft and the snow on my skis were melting fast. We encountered some strange wind patterns which were blowing from both south-west and north-west and sometimes shifting to southerly. The heavens were dressed in a strange haze that made the sky very bright despite the cloud cover. Glenn had plowed the west half of his runway and had left the east part snowcovered for us ski-flyers. Very accomodating as always.

The flight back to east Calgary had us crabbing into the westerly Chinook-flow which was increasing by the mile. The haze obscured the downtown skyline with a thick blanket of smog but we could see the tops of the mountains sticking up above the brown cloud. At Delacour I peeled off and lined up for two-five at my home strip. The horses that had been trying to cool down in the snow earlier had evacuated my landing field. For all of you who wonder what happened to the "killer cow" that used to guard my little airport. I'm sure that her spirit soars over my airfield. "She is long gone but not forgotten - her spirit lives on, but the flesh is rotten".

Happy landings. ✈

Tank Straps and Tank Security



It doesn't seem possible that a couple of skinny straps could be capable of supporting large tanks full of fuel...but they can and do.

The ideal tank strap is made of stainless steel approximately .050" x 1" wide with the length to suit the installation. Usually, some means must be fitted to the strap which will permit it to be tightened around the tank to better immobilize it.

It might seem like a good idea but forget it, amigo. Aircraft tanks never have tabs welded to them for bolting directly to the aircraft structure. Vibration will usually terminate such an installation with leaky cracks or broken lugs as your reward.

Fuel tanks, you will find, always are suspended or cradled in padded straps. The padding is neoprene or a material that is, preferably, fire resistant and non absorbent. However, many builders are using felt strips stuck to the steel straps with polyurethane varnish, contact cement or some other readily available adhesive.

No part of the steel strap should ever be permitted to touch the tank lest it damage it.

If you intend to fabricate your own tank(s) you ought to obtain or make all of the components you will need before you start fabricating the tank. Then, you will know what size openings you will need and if you can get the proper orientation and clearances for the various units that go both inside and outside the tank. ✈

For Sale

Bushmaster - 1986, 2-seat, dual-control, fully enclosed cabin, 503 Rotax, ground adj prop, 510hrs, complete with crop spraying equipment, always hangared, $12000. Ken Giesbrecht 403-572-3294 (3/00)

Skis & floats - Powder coated skis for tri-gear or tail-dragger $850, floats $1500. Don Leonzio 250-427-2046 (3/00)

Hanger - One half share in indus hanger for sale, 38 ft door facing east call Ray Waller at 274 4388 or cell 540 2492 (3/00)

Flying-Flea HM-293 - Famous MIGNET Aircraft redesigned by GRUNBERG as an Ultralight. More than 100 flying. French plans and brochure with English translation, $110.00, mailing included. Paul PONTOIS, 1890 Rang des Chutes, STE-URSULE (Quebec) J0K 3M0 (3/00)

Yarrow Arrow- Enclosed heated cab, dual control side by side seating, 55 HRS TT on new 503 dual CDI dual carb,100 CH Alpha/100 radio, alum. skis, hangared. $13,000. Located in Lac La Biche AB. PH: 780-798-2404 FAX: 798-3011, e-mail: rckb@telusplanet.net (1/00)

MiniMax - Rotax 447, GSC Ground adjustable prop, full panel, always hangered, only 115 hours since new. $9,500. OBO. Dale 293-3826. (12/99)

CH701 STOL - Rotax 912, 190hrs TTSN, always hangared kit cost $36,000, labour to build 815 hrs, offers. Bob Campbell 403-934-3657 (10/99)

Oil Injection Pump - for Rotax 582. Call Dave Dedul, 403-823-2214 (8/99)

Chinook WT II - single place, 1983, warp wing, "0" time 277 Rotax, can be seen at Indus Airfield, $3,500 OBO. Dan 403-243-7934 H or 403-230-6415 W (6/99)

Forward ads to Bob Kirkby 569-9541.

Feature Kit

Skystar's Kitfox Lite

SkyStar decided to offer an entry-level airplane to satisfy the wishes of their customers. With about 30,000 people in their database and over 3,000 Kitfox kits sold, they recognized that a certain number of their customers simply didn't want to deal with the bureaucracy of licensing, had lost their medical or were worried about that happening, etc. They just wanted a simple aircraft they could go out and fly after dinner. Consequently, SkyStar decided to build a small Kitfox that also happens to be ultralight legal with a lightweight engine.

The factory's main objective was to build a machine that had aircraft-like qualities. They put together a team of dedicated people and asked Harry Riblett to develop a specific airfoil that would allow the aircraft to meet the 28 mph required stall speed of FAR Part 103. The result is an ultralight that has the handling qualities of a traditional aircraft ... which has proven popular with consumers.

The Kitfox Lite uses a chromoly welded fuselage structure like its big brother, the Kitfox IV. "We analyzed the tubing sizes necessary for a 550 lb. gross weight airplane versus the 1,550 lb. gross weight we used for the Outback and found we could use some smaller diameter tubing in certain areas," says Frank Miller, SkyStar's product development manager. "While the spar sizes are the same as for the Classic IV, the wall thickness are slightly less. And, we use fewer ribs in the wing to save weight as well. Overall, the aircraft's structure is certainly strong enough to carry the biggest person you can fit in it. SkyStar's never had a structural failure in a Kitfox, and we're not about to start now with this little aircraft."

To make the 254 lb. weight limit of Part 103, a lightweight engine was essential. SkyStar worked with the 2si engine manufacturers to develop an engine that would provide sufficient horsepower while still being light weight. The prototype Kitfox Lite was flown with a specially built 2si engine, using two single cylinders in a two-cylinder crankcase, with a small carburetor and free air cooling. While that engine worked reasonably well it wasn't "bullet proof," says Miller. "We want to supply a machine that's dependable, and we came to the conclusion that the margins on heating and cooling that engine were too close for our satisfaction using the free-air version." Consequently, the factory has switched to the stock, fan-cooled 2si 460F35 engine, producing 35 hp. That engine added six pounds to the aircraft's weight—six pounds which had to come off the airplane someplace else to still allow the machine to meet the 254 lb. weight limit of Part 103. One of the areas they saved weight was in reducing the size of the tail wheel spring and tailwheel. In addition changes were made to the control systems, and weight was removed in other areas as well.

The Kitfox Lite business end

SkyStar recently announced the availability of the Kitfox Lite as a "firewall-back" kit, enabling builders to select different engines for the airframes. SkyStar Chairman Phil Reed explains their reasoning, "Builders have shown an interest in a variety of engines ranging from various Rotax models to others as well. We haven't had time to install and evaluate these different engines, so we're unbundling the airframe and engine combination in order to allow builders to use different engine options." The factory only recommends the use of the 2si engine for any ultralight-legal installations; however, builders electing to license the Kitfox Lite in the experimental amateur-built category have more freedom regarding weight, and several builders are choosing to power their aircraft with the 40 hp Rotax 477 or the 52 hp Rotax 503. Miller says the weight of these engines is not a problem

(continued on page 6)

Feature Kit *- continued from page 5*

for the airframe; the biggest concern is to avoid installing an engine that will take the aircraft beyond its 80 mph Vne or gross weight.

The airframe only/firewall back kit sells for $11,445, while the complete airframe/2si engine/Tennessee propeller package lists for $14,995. Powered by the 35 hp 2si engine, the Kitfox Lite has a 600 fpm rate of climb, cruises at 63 mph, stalls at 28 mph and gets off and lands in approximately 100 feet. Empty weight is 250 lbs. However the factory is quick to point out that builders won't be able to use a heavy, showplane paint job and keep the machine under the weight limit. Their preference would be for customers to go easy on the paint and add brakes. While the prototype Lite had a single brake lever, kits are now shipped with differential heel brakes as a stock item.

Like the popular Kitfox, the Kitfox Lite features a handy folding wing mechanism, making trailering and storage of the aircraft easier to manage. The factory attempted to make disconnecting the flaperons a very easy task and accomplished that via the use of push/pull cables that run out into the wing and attach to the flaperons. Miller says it's a five-minute operation, with all connections readily accessible.

Aircraft Dimensions and Features
Wing Span: 25'2"
Wing Area: 101 ft²
Length: 16.5'
Length (Wings Folded): 17'7"
Height: 5'2"
Width (Wings Folded): 7'10"
Cabin Width: 24.0"
Useful Load: 296lb.
Cargo Bay: 10lbs
Folding Wings: Yes

Performance at Average Weight, Pilot Skills & Std. Temps.
Gross Weight: 550 lbs.
Top Speed: 63 mph
Rate of Climb: 750 fpm
Cruise Speed: 55 mph
Stall Speed: 27 mph
Takeoff Roll: 100 ft
Landing Grd. Roll: 75 ft

For more information contact
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(208)454-2444 (800)554-8369
fax (208)454-6464
Web site: www.skystar.com

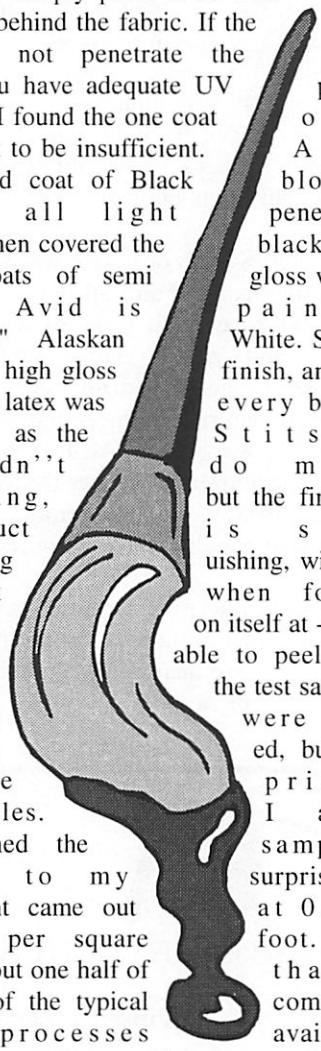
Painting your Ultralight

by Ed D'Antoni

The performance of the 5 most popular coverings are reviewed in the March issue of Kitplanes Magazine. Ceconite and Cotton finished in Randolph Dope, the Air-Tech, Superflite and Stits processes are compared. They are tested for ultraviolet degradation, yellowing, gloss retention, low temperature flexibility, breaking strength and high temperature strength. Finished weight of each process is also provided. It was interesting to note that cotton and dope still provide properties that none of the other products can match.

The weight of most processes is about 0.1 lb. per square foot. Since most single wing ultralights surface area is in the 600 to 800 range, covering accounts for 60 to 80 lbs. I have heard and read of finishing with polyester and latex paint. It is recommended a base coat of black latex be applied to provide ultraviolet protection for the polyester, then the final color coats. One club member told me black would not provide UV protection, and another that latex would not bond to polyester fabric such as Ceconite. Curiosity got the best of me so I made up some frames, covered them with Ceconite and did some covering and painting. I used a roller, so the end result was probably a much thicker system than if one sprayed on the latex.

No paint will adhere to Polyester, therefore the first coat must penetrate the weave and form a mechanical bond with the fabric. To insure a good mechanical bond most processes recommend brushing on the first coat, using enough force to have the paint penetrate the fabric. I brushed one coat of black onto my first frame. It was obvious that the paint did not penetrate the fabric weave. The next frames were primed and given one coat of Black. Inspection of the back of the fabric revealed the primer had penetrated the weave and would provide a mechanical bond.



There is a simple test to determine whether or not your UV protection will work. Simply place a 60 watt light bulb behind the fabric. If the light does not penetrate the fabric, you have adequate UV protection. I found the one coat of Black to be insufficient. A second coat of Black blocked out all light penetration. I then covered the black with 2 coats of semi gloss white. My Avid is painted "Stits" Alaskan White. Stits is not a high gloss finish, and the white latex was every bit as shiny as the Stits. I couldn''t do much testing, but the finished product is self extinguishing, will not crack when folded back on itself at -20 C. I was able to peel paint from the test samples that were not primed, but not the primed samples. I also weighed the samples, and to my surprise the weight came out at 0.048 lbs. per square foot. That is about one half of that of any of the typical commercial processes available. This can be a potential weight saving of 35 lbs. on a typical ultralight.

Unfortunately I have to stick with what is already on my Avid, Stits; but I will try something different if there is a "next" aircraft. ✈

The Ducati Ignition

The face of 2-cycle aviation definitely took on a new look with the advent of the dual ignition Rotax 503 and 582 engines. Possibly nothing has done more to break the myth of two-stroke vulnerability than the redundancy provided by the italian-made Ducati ignition.

How it Works

The Ducati capacitor discharge ignition system (CDI) consists of a flywheel generator, two control units with integrated coils (transducers) activated by two phase sensitive trigger coils or pickups. The flywheel is an outer rotor type with 12 magnets molded in a ring form that rotates around the stator plate. The matching 12 pole stator assembly resembles an early model radial engine. Two pair of windings or poles supply the voltage to two separate external transducers or "black boxes" that fire two sets of spark plugs each.

The other eight stator windings are used to feed the single 165 watt lighting coil. Unlike the point system engines, there is only one (larger output) lighting coil versus the 11 0 watt lighting and 30 watt charging coil of the old Bosch ignition. While the tachometer is not dependent on this pulse of the lighting coil as before, the single output coil limits your choice of attachments. See Figure 1 for system layout.

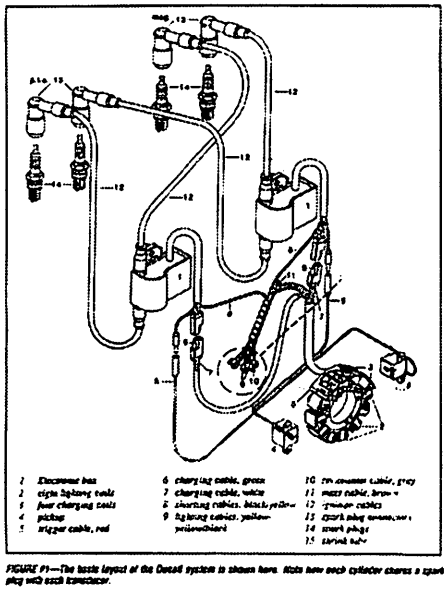


FIGURE #1—The basic layout of the Ducati system is shown here. Note how each cylinder shares a spark plug with each transducer.

The external transducers or "electric boxes" incorporate a storage capacitor coil that stores the build-up of voltage from the internal windings. It also has a coil and "SCR" (silicone control rectifier) which acts as an electronic path to release the energy on command from the signal via the trigger coils. They are vacuum-molded in a single housing with dielectrical strength epoxy resin to achieve a compact and long life unit designed to survive in the severest of environments.

On the signal from the pickup trigger coils all four plugs fire at the same time. This signal is prompted by two magnets 180 degrees apart on the outside of the flywheel surface. Yes, the plugs fire at the bottom of the piston stroke, but this does not affect performance in any way.

You may also note from the illustration that each "electric box" or transducer fires a single plug in each cylinder. This makes a complete ignition failure nearly impossible considering the two systems have only the rotating flywheel in common. Everything else right down to the windings on the stator are separate yet equal. About the only thing you as the operator can do to harm this system is to disconnect the plug-in connectors while the engine is running.

Ignition Switch

For a "mag test" a dual ignition switch is available that will kill one transducer at a time, see Figure 3. You will also note that there is no way to kill both sides unless the key is turned to the off position. A toggle switch is okay if the test position is spring-loaded as to make killing both ignition sides a dual or two-handed function. The proper spring return switch simply requires that you take your tinkers off either switch to keep from killing the engine completely. A good safety feature that makes the mag test sequence idiot proof.

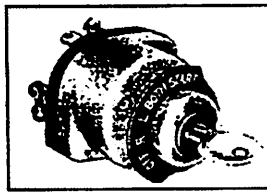


FIGURE #3—This keyed dual ignition switch is ideal for the Ducati ignition. Allows for right and left mag test as well as electric start.

When doing a mag test the rpm should not drop more than 400 rpm. It is not uncommon to have one cylinder drop only 100 rpm and the other drop 250 or 300 rpm due to variances in electrical output and plug conditions. You should never run the engine without both ignitions operational as this could lead to possible engine damage after a prolonged period.

To test the transducer use the chart in Figure 6 to check resistance values at the plug harness with the ohmmeter probes placed on the colored wires as shown.

TRANSDUCER CONTROL CIRCUIT

	GREEN	WHITE	RED	Yellow/Black
GREEN	———	>1,000 OHMS	open	open
WHITE	>100K ohms	———	open	open
RED	>100K ohms	500-3,000 ohms	———	open
Yellow/Black	1K-5K ohms	>100K ohms	>100K ohms	———

FIGURE #6—Checking the transducer is done by reading the resistance values shown here across the wires at the connectors.

Tach Service Bulletin

On early model Ducati 503 (before serial #3952143) and Ducati 582 (before serial #3957334) engines, it was common for the tach to stop functioning after a Certain period of time. This was caused by breakage of the leads to a resistor mounted on the stator due to excess vibration. Removing the resistor to a location outside the engine was the fix as outlined in the factory service bulletin dated November 1990. The grey tach wire is now mounted directly to the terminal on the stator. It is important to note that this failure had nothing to do with ignition and should not be considered a possible reliability problem. See Figure 7. The actual Service Bulletin is available from any Rotax Service Center.

Attaching Plug Wires

Some manufacturers require you to relocate the transducers off the engine. Unlike the screw-on terminals used on Bosch Ignition systems, the plug wires are *(continued on page 8)*

Ducati - continued from page 7

bonded or glued to the transducers. Use Loctite #380 Black Max" fixation product on this union. You will find only a pointed post at this connection that will not retain a plug wire Without this bonding agent.

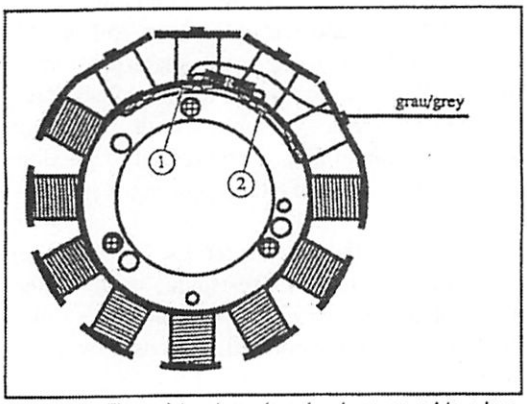


FIGURE #7—The resistor shown here has been moved to a location outside the engine. A service bulletin is available detailing this procedure.

Ignition Timing

One of the real nice parts of the Ducati system is, there is no timing to check or set. The only adjustment that needs to be set is the "air gap" between either pickups or trigger coils and the rotating magnets on the exterior of the flywheel. This gap must be set at .020". This need only be reset when the engine is disassembled as there is no wear on these pieces.

Contrary to what you might think, this type of ignition does have a timing advance that increases with rpm. see Figure 8 for timing advance chart. This is all done electronically with no moving parts to service.

Lighting Coil Output

The eight dedicated windings on the stator plate for the lighting coil circuit pumps out a healthy 170 watts max. This is generally sufficient to handle the needs of all but the most lavishly loaded aircraft. Using a regulator/rectifier to charge a battery, Figure 9 shows what kind of amps can be expected from the regulator output. Of course the figure varies with rpm.

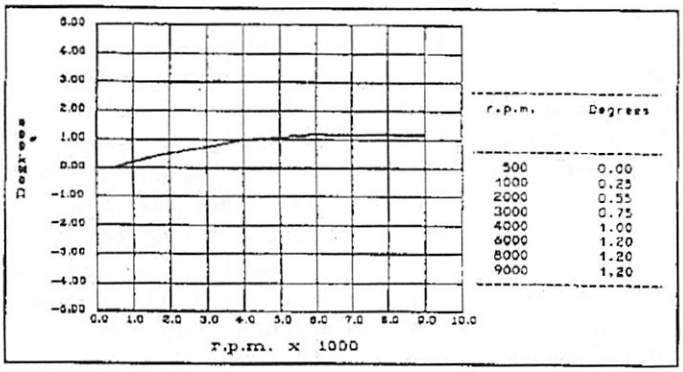


FIGURE #8—An electronic advance curve is programmed into the Ducati ignition system.

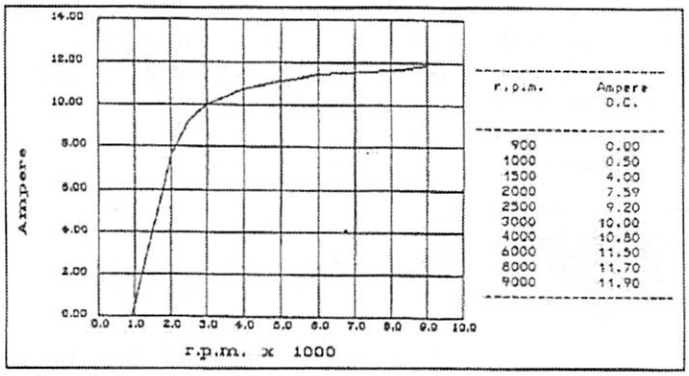


FIGURE #9—Shows the DC amperes output that can be expected after a regulator/rectifier is installed in the system.

And there you have it. Because there is no timing to set and only one moving part, the flywheel, there is very little that can be expected to go wrong with this system. Because of the redundancy of the design, engine failures due to electrical trouble should be a thing of the past in dual ignition 2-cycle engines. ✈

Membership List Revisions

Christensen, Finn	403-253-5273
Beck, Fred	250-787-7098
Bergman, Dick	403-253-7239
Winters, Wayne	403-936-5347
Winters, Ralph	403-238-0406

Just Watch

A couple of A-10's are escorting a C-130 Hercules and their pilots were chatting with the pilot of the transport to pass the time. Talk fell to the subject of the relative merits of their respective aircraft with the fighter pilots holding that their planes were better because of their manoeuverability, weaponry and the like.

The C-130 pilot replied "Yeah? Well I can do a few things in this old girl that you'd only dream about."

Naturally, he was challenged to demonstrate. "Just watch," he tells them..

The C-130 continues to fly straight and level, and after several minutes the Herc pilot returns to the air and says, "There! How was that?"

Not having seen anything, the fighter pilots say, "What are you talking about? What did you do?"

He replies, "Well, I got up, stretched my legs, got a cup of coffee, then went in the back and used the can."

Nobody's Flying School

RRRiinnng. RRRRiinnggg.

"Good morning, Nobody's Flying School, Miss Pitch speaking. May I help you?

"Yes ma'am, I'll see if he's in. Please hold.

"Lazarus? Are you in this morning? It's that nice Mrs. McMalley. I think she wants to start up her lessons again. Lazarus? Lazarus . . . (why, you old coot. . .).

"Hello, Mrs. McMalley? I'm sorry, but Mr. Nobody, seems to be out of the office at the moment. Would you like to call back later? OK, have a-nice day.

"Now you come here, Lazarus Nobody, ancient one, and tell me just why you don't want to talk to that nice Mrs. McMalley. I think she likes you, just fine. No?"

Nobody shifted nervously about on the couch, wiping an unusual expression from his face and turned to address the stunning instructress.

"OK, Polly. I'll tell this story once. Then perhaps I'll assign you to that 'sweet little old lady' I'm just too old, myself, to repeat the terrifying case of 'Gunner' Gertrude McMalley.....

It was a long time ago, I guess or I wouldn't have to strain to recall her face. Or perhaps my subconscious defence was to erase that frightening memory altogether. I do remember being delighted to see a mature lady commit herself to learning to fly, especially in a first generation ultralight.

But I was cautious as well. she was, after all, 65 (and holding), as well as a little out of trim in the hearing department. But her enthusiasm and good humor infected all of us. We fussed over her, worked her pretty hard, and in no time she was ground-school qualified.

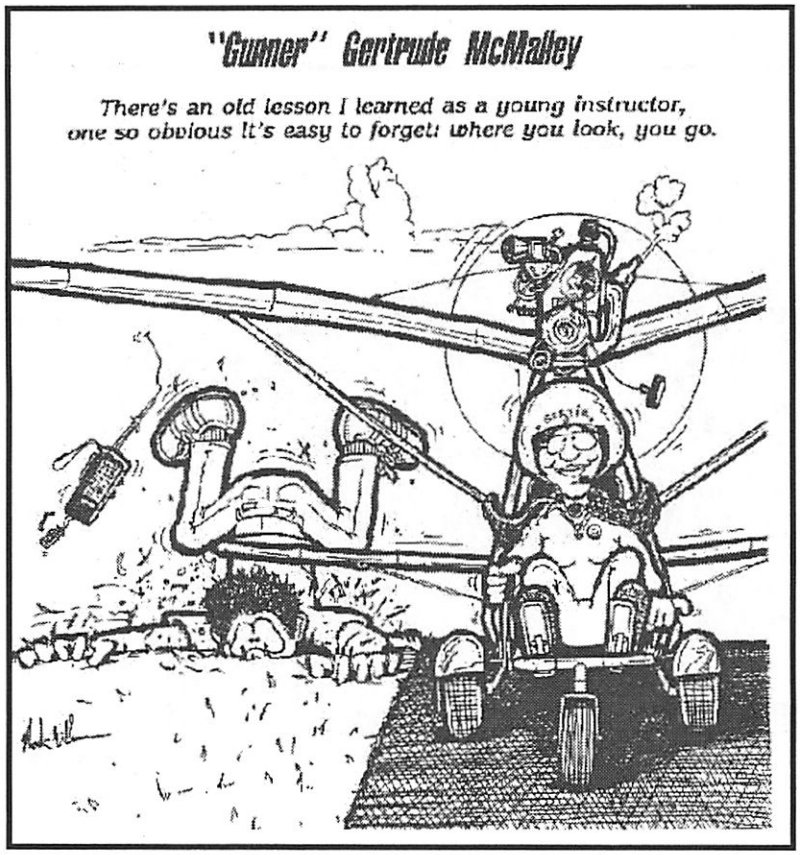
And then we moved to the flight line.

In the Piper Cub, she was an angel of the old school. She took to the air like it was her home. After only three hours, we moved her to taxi training in the ultralight.

Around the triangular course, straight as an arrow, she handled her little winged go-kart like a pro.

And then we moved her to the runway.

There's an old lesson I learned as a young instructor, one that's easy to forget: where you look, you go.



Standing slightly off the runway, I talked to Gertrude in my best "trust me" voice. Eventually, there came an end to the commentary and a brief wait while she reviewed the first exercise mentally and proceeded at her own pace.

By the time she was approaching my position, I was so pleased I looked off to give a silent nod to the other instructors standing nearby. Their curious expressions belied my own pleasure, but I ignored them.

And then I looked up just in time to dive out of the way of the outboard leading edge of the trainer's wing. I clawed the crabgrass as the right stabilizer cleared only inches overhead. Breathing was a deliberate function,

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Nobody's - continued from page 9

and as the stars cleared from my vision I heard the noisy engine throttle back.

Miraculously, the radio still functioned. Talking her through a turnaround, I started over, urging her to proceed more slowly this time and to concentrate on looking through her intended path, with the goal of maintaining the runway centerline exactly.

Slowly and cautiously, she began her run with perfect control. As she approached my position, however, she began a swing to the left and a slow-motion repeat of the last performance. Her low speed was a comfort, and talking her out of her problem seemed wiser than halting the session.

As she approached, I called upon every convincing short command I knew, she would not look away from me, and I would not run. She kept coming, and I kept stepping up the anxiety in my voice. Before it was too late, I turned to run away and clear her path. Without wasting precious time to look, I simply fled the sound.

It did not go away. Every subtle turn and dodge I made was answered by the intense feeling in the back of my neck of being followed. Closely. When the engine finally died, I collapsed to my knees, panting, as the nosewheel of the trainer rolled up and pinned my toes to the ground.

The other instructors were all guffa'ing, pointing and wiping tears from their eyes. One appeared to be about to choke to death on his own amusement. I made a mental note concerning his future.

SUMMARY:

Think about it. Have you ever watched a little old lady driving nervously down the highway, when a huge truck approaches? Did you notice her tendency to draw closer to the object of her terror, rather than moving away? Unless she is trained to ignore the traffic, she has no choice but to drift closer.

We are programmed all of us, to watch in the line of our motion. When we look away from the line of motion, we have strong physical instincts at work to change the line of motion to agree. It's weird, but it's true. If you don't believe it, try walking through a door sometime, while you stare constantly at the wall beside it.

Use the proven system of eye mechanics developed for defensive driver's training:

AIM HIGH: In order to plan safely, we are less interested in where the craft is, than where it is going to be in the next eight to 12 seconds to a minute.

GET THE BIG PICTURE: The big picture is constantly changing. It is important, therefore, to-have a current big picture on which to base decisions. Extending 360 degrees in every direction, above and below, the big picture must be updated at least every five to seven seconds.

KEEP YOUR EYES MOVING: Staring at an object not only reduces the ability to see other objects, it also increases your chances of leaving the safe flying path.

LEAVE YOURSELF AN OUT: Which means, never fly into or over an area where you have only one safe path to follow. Due to the fluid nature of air, and the mechanical nature of flying machines, you may not be able to maintain that one safe path.

MAKE SURE OTHERS SEE YOU: Be visible. Stay out of their blind spots. Give wide clearance when overtaking another flyer.

Gary Fox and his Merlin *Photo by Adrian Anderson*

Club Crest Contest

Don't forget to send or e-mail your entry for the new club crest design to Bernie Kespe by March 6. Enter as many times as you wish.

The winner will receive $25.00 and be published in the Skywriter.

E-mail to: kespeb@cadvision.com

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