

Skywriter



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Message from the Prez

by Gordon Keegan

Last month I told you about how we got into Calgary International for the 50th Anniversary celebration. This month I would like to give you an example of how not to leave Calgary International early on a Sunday morning. The tower told us the day before that they wanted us to leave at 7 A.M., if possible, to avoid any conflict with other traffic.

Well, at 6 A.M. sharp there were 7 very groggy, disheveled ultralight pilots standing on the tarmac waiting for the massive Home Oil hangar doors to open so that we could access our anxiously waiting birds. Preflights were done and fuel was added for the short flight back to Indus. A wave to the spouses, who had so valiantly arisen at the crack of dawn to play chauffeur, and we were ready to go.

We decided to do a formation takeoff with a point man followed by three pairs. Stewart Midwinter made contact with ground control and we taxied to the end of runway 34. With takeoff clearance we taxied into position on the runway and started our roll. At about 100 feet the engine failed in the lead aircraft and, as agreed, the formation continued to climb as Stewart made a forced landing in the grass beside the runway. We then made a right turn following runway 07 and were on course for Indus. At this point I made contact with the tower on my radio and explained what had happened. They responded that they would provide any assistance necessary and to remain on our present course.

As it turned out, Stewart was able to make a quick repair and rejoin the formation near Chestermere lake. Everyone arrived at their respective home airfields safely and all in all the whole experience was a lot of fun. I hope

more of you can join us at the next fly-in.

I have just received word that Ralph Winters was successful in his dispute with the tax man over his property at Indus. They were trying to tax Ralph as a commercial airport owner and he was rightly able to convince the government that the facility is recreational and save himself from some serious financial repercussions. Congratulations Ralph! Sometimes we may forget to let Ralph know how much we appreciate him letting us fly from his land and I hope the next time you see him you'll shake his hand and say thanks.

See you up top.

Dates to Remember

Meeting night is the first Wednesday of each month, 1930 hours, at the R.C.A.F. Association, 110-7220 Fisher Street S.E.

September 17 The Calgary Flying Club will be holding a fly-in and open house and would like us to fly some of our aircraft to Springbank. Please contact Gord Keegan if you are interested.

September 19 The Calgary Flying Club has invited CUFC to make a presentation at their meeting. All CUFC members are invited to attend.

September 23 The R.C.A.F. Association will be holding an open house and have asked us to set up a booth. Please try to attend.

3PM - 8PM

October 5, 6 & 7 The Alberta Aviation Council convention - Jasper Park Lodge.

Letter from the Editor

by Gordon Sorensen

Being a flying instructor, a lot of the flying I do is from the back seat (back seat pilot?). To tell you the truth, it does get a little dull after awhile. You can only get so much enjoyment out of circuits. I have embarked on a series of flights to try to make my piloting skills and knowledge of my airplane better.

One such thing I am doing is spinning the Challenger II I fly. I enjoy spins in the first place so this wasn't a scary endeavor. I did, however, refresh myself on the proper recovery techniques. I also talked to the designer at the factory, to make sure there would be no problems. A spin puts little stress on an airplane, it is getting into and out of the spins that can be stressful (to both the plane and pilot).

Anyway, I went out and climbed up to 5000 ft ASL, out west of the Olds-Didsbury airport. I tried the spins to the left and right. It took a couple of tries to get a nice incipient stage, where the plane goes inverted before it starts to spin. I found that I had to do an aggravated stall and kick the rudder at the right time to get it to flick nicely. Any relaxation of the controls and I found that the plane came out of the spin right now! All I had to do was level the wings and pull up. I spent about an hour playing around and felt alot better about the plane and my ability to handle it.

If you try anything like this, do some research before hand. The time spent preparing is well worthwhile. Let me know how things turn out. In case you are wondering, no, I didn't have a parachute. I have never flown with one.

P.I.C. of the Month

Gord Sorensen

I was born and raised in Red Deer, Alberta and went to school there until I graduated from high school. I moved to Calgary in 1987 to further my education.

I have always been interested in airplanes, and being as my father owned a flying business, it was only natural. I first got involved with ultralights in December 1983, and had my first flight as my 14th birthday present. It took me awhile to get my license because my father kept selling the planes that I was flying. I finally finished my requirements in January 1986, and after the government did its best with my paperwork, received my license in June. I got my instructors rating when I was 18 and have been working as an instructor at Sky Master Aviation at the Old-Didsbury Airport ever since. I have also built 2 Eippers, 7 Beavers and 2 Challengers and found that I like flying

alot better than building.

I have just finished my second year of the Aeronautical Engineering Technology course at S.A.I.T. and would like to become involved in designing and building my own ultralights. Besides ultralighting, I also like to bicycle (about 20 km a day) and downhill ski.

Flying the Renegade

by Bob Kirkby

In the last newsletter I promised to give you a report on what it's like to fly the Renegade Spirit. Fasten you seat belt!

I had flown a Renegade once before, at the factory, which was almost a year before mine took flight. So that didn't count. After Robin Dyck, Murphy's test pilot, completed the initial test flight I was able to get in two short circuits with him before he had to go. They were short because my engine started overheating after about 3 or 4 minutes in the air. I later solved the overheating problem by changing the radiator and making a number of modifications to the engine cowling. So about two weeks after my two short dual flights it was time to go solo.

Taxiing the Renegade requires some getting used-to for a trike pilot like myself. Solo flight is from the back seat, which means zero forward visibility over the cowling. Watching that hugh 68" prop swinging around the nose immediately instills a fear of striking an unseen fence post, a dim-witted dog that might be on the runway, or worst of all a person. So the first order of business it to learn how to taxi by snaking down the runway doing mild s-turns with ones head bobbing from side to side to maintain visibility.

After making my way to the end of the runway in this manner, I now discover what it's like to turn an airplane with the centre of gravity behind the main gear. At first my turns have a very wide radius because I'm being very cautious with the power (I've read the acticles about how easy it is to groundloop a taildragger). After a bit of practice, however, I've found that the turning radius can be greatly reduced by careful control of power input and rudder. It soon becomes easy to sense when the tail is getting ready to take over and start accelerating your turn. As long as you remain below that critical speed you are in control of your turn; above it and the airplane takes over. The centrifugal force, acting on the C of G, actually accelerates your turn and whips the airplane around in much to same way we used to crack-the-whip on ice skates when we were kids.

We're now ready to become airborne. Test the controls, one final zigzag to make sure the runway is clear, stick neutral, full power and we accelerate down the runway like a thoroughbred out of the gate. The tail gently

lifts after only a few seconds and I'm using rudder only, to keep her on target. The tendency to wander off course is now more pronounced and attention to the rudder pedals dominates for the moment. Once the airspeed hits 50mph I start to pull back on the stick. The Renegade seems to jump from the runway and immediately feels completely at home in the air. As the airspeed climbs to 70 I pull back more on the stick, expecting it to drop back to about 50. Instead she streaks skyward at an angle of attack I've never experienced before, all the time maintaining 60mph. After scaring myself, expecting a tailslide any moment, I level off, cut my power back and try to get my bearings. Full power on the 532 registered about 6500 on my tach. Now I'm cruising at 5600 and 75mph.

Now its time to get used to the controls. Without the second person in the front seat the airplane is extremely sensitive to all inputs. Initially I felt it was too sensitive, but like anything, once one gets used to it the word sensitivity is replaced by responsiveness. I'm used to throwing the slick full stop to bank and counting the seconds to 45 degrees. In the Renegade a slight twitch is all that is necessary to enter a gentle turn. No possibility of getting bruised knees from moving the stick back and forth in rough weather. I installed the elevator trim option and it turns out to be very useful. With two she flies level at 75mph and neutral trim, but solo nose down trim is required to releave the forward pressure on the stick. Yaw sensitivity is very much there. Fortunately the rudder is very responsive since constant rudder input are required to maintain coordinated turns and control yaw whenever engine power is changed. Not that its particularly difficult to keep the tail behind you, but compared to what I've been used to it yaws on a dime.

In level flight you can see quite well over the nose. The horizon is about 2 degrees above the cowling. The upper wings provide a permanent sun visor but because they are in front of the rear cockpit, upward visibility is fairly good. Downward visibility on the other hand, is limited. The cockpit is directly over the bottom wings, so you cannot see what is directly under the airplane. If you really want to see what's there, a quick roll from side to side will provide a momentary full view. Instruments in the front and rear cockpits are equally visible. I layed them out so that critical instruments are in the rear in case someone is in the front blocking the view. I installed ASI, Tach, Altimeter and water temperature in the rear cockpit and a second ASI, VSI, slip indicator, CHT, Hobbs meter and volt meter in the front cockpit.

Now that we've been cruising around for awhile its time to get back down. I found that it took me about 5 hours in the Renegade, alone, with about 10-15 landings before I felt comfortable with my approaches and landings. I've tried conventional, high attitude, power on approaches with occasional side slips to view the runway and ultralight-style nose down, low power approaches. I prefer the latter. For one thing runway visibility is much better. Initially I came in much too hot, expecting to lose speed

quickly after roundout. This was not the case, I had to get used to the fact that I was flying a much heavier and cleaner airplane which took much longer to bleed off speed. Once I got my mind around that I was able to get the wheels on the ground much sooner with fewer bounces. Doing a three-point landing turns out not to be too difficult. The Renegade seems to naturally assume the correct angle of attack as it stalls in, touching with three wheels. I have yet to try a significant cross-wind landing, however. This may require some practice!

Now that I am feeling at home in the Renegade, I am absolutely delighted with the way it flies. I am looking forward to some cross country flights to visit some of you that have your own fields.

I hope you have enjoyed reading about me and my Renegade. It has certainly been a great experience for me.

Classified

Mirage - 100 hrs TT, always hangared, instruments, parachute, 37hp Kawasaki, CB antenna and connections, helmet with headset, excellent condition, good beginner airplane, \$2900.00. Bob Kirkby 226-0720.

ABC Ballistic Chute - never used, hermetically sealed, excellent, new \$1900., asking \$1200. Paul Hemingson 931-2363.

Fisher FP101 - fantastic flying ultralight yet looks like a conventional aircraft. New, fly it away. \$7000. Ralph or Wayne Winters 936-5347 or 238-0406.

R/C Scale Modeller - magazines 1970-1989, A1 condition, 260 available, \$1. each. Dave Bendall 278-9175.

Boom Mic - M-87 low impedance dynamic microphone, fits most headsets, new, 2 available, \$25. each. Bob Kirkby 226-0720.

Hagar Wheels - 1 pair of 6" Hagar wheels, new, \$40. Bob Kirkby 226-0720.

Chinook Parts - brakes, fuselage landing back, some damage to a wing, make an offer. Sky Master 335-3306 or Gord 293-7990.

Classified ads for aircraft and related equipment are free to CUFC members.

Safety Corner

by Paul Hemington

Forced Landing

"A stitch in time saves nine"

No one likes to be forced into anything; but sometimes circumstances conspire to force us into doing something against our will. Such is the forced landing, to the pilot. We need to learn how to control our ships in the event of a motor failure, to ensure a successful landing. It's not as bad as it might seem. An airplane without power simply becomes a glider, albeit a poor one. Every glider landing is a forced landing, and we don't read about them augering in. So what's the secret? Mostly its preparation! ... where have you seen these words before.

In this months newsletter I will share some of the knowledge and wisdom built up by pilots of all kinds over the years. The skills they acquired were essential in the early years of aviation when motors were not so reliable, and airfields infrequent. They had to become skillful in selecting a landing spot or else gravity would select it for them. The pilot who knows how to glide and manoeuvre his A/C without power need not fear engine failure.

The Flame Out!

Once you're faced with an engine failure, the reason for the failure becomes largely academic. It's unlikely you will have the time or clearheadedness to diagnose the failure, fix it and get a restart. The ROTAX species is a sophisticated piece of engineering. But it does fail even with the most rigorous of maintenance. The causes can usually be traced back to fuel or electrical problems, but occasionally seizure or broken rings or other critical parts fail. Regardless, once the engine quits things get real quiet, real fast. Strangely enough, the quiet afterglow of an engine flameout does not seem conducive to clear thinking and peaceful thoughts. Your brain will seem scrambled in the deafening silence - this is no time to panic, you need to know what to do and in what order.

First things First

1. **Keep the A/C flying.** Don't stall it! Push over to maintain flying speed and control. Retard the throttle to its idle setting. This sounds dumb if the engine is dead, but there is a reason for it. Read on.

2. **Select a field to land in.** If you've been an astute pilot you probably already have a good idea of the possible sites available to you. I always try to fly within gliding range of a number of sites. Its considered good practice to play the mental game: "If my engine were to quit now, where could I land?" Play this game as you're flying along and pretty soon it becomes subconscious. With one sweep of your eyes, your brain will register the number and

location of possible sites as well as take in the beauty of the landscape, significant geographic features and things of interest. Thinking like this, the alternative sites don't take long to jell in your mind; and the decision of selecting the alternative goes quickly.

Motors seem to quit at the most awkward moments. You might be droning along fat, dumb and happy and be caught by surprise. One just never knows when it will happen. There are some subtle clues you might cue into. For example, if all the best fields for landing are oriented North-South, and the wind is gusting East or West, this is a good sign that extra caution is required. Or maybe, you're cruising low over a kennel that specializes in training Dobermans, Shephards and Pit Bulls for junkyard dogs that were terrorized as puppies by a gang of brats with radio controlled models. They can hardly wait to wreak revenge on a life size model complete with pilot.

Or maybe, you just changed the plugs, filters and set the timing to 4 decimal places. You're confident the engine is in top shape. Beware - this is the time to be on guard.

Seriously, the point is engines quit for such a variety of reasons, and it's foolhardy to trust it 100%. Fly high enough to ensure that a variety of possible landing sites are available to you. Keep a mental inventory of sites as you continue on your course, replace them with new ones as old ones go by underwing. It's not a big task, and it will give you some peace of mind since you know where you might head for in the event of engine failure. Its also one less decision which needs to be made when the inevitable happens. A lot of valuable time (and altitude) will be lost if you're caught completely off guard.

3. **Plan the approach.** Assuming that you already have a variety of "possible sites" open to you, you will now need to "narrow the field" down to one and plan your approach to it. Some things to consider are:

- a) the direction and velocity of the wind,
- b) the length and smoothness of the field,
- c) hazards on the approach (powerlines, trees, buildings....),
- d) your altitude and glide range.

Let's consider these one at a time.

a) **The direction and velocity of the wind.** As you fly along you are likely to be aware of the strength and direction of surface winds from the usual indicators. For example, the dust from vehicles or tractors, the drift of your aircraft, smoke, etc. The objective of any forced landing is to successfully land the aircraft. To do this it is best to land into the wind to minimize your speed relative to the ground. Consequently, wind direction is important - but so is its strength. If the wind is low or insignificant it doesn't much matter which direction you land - just select the most suitable site and go for it. But if the wind is strong you best consider landing into the wind, the groundspeed will be slow and the roll out short.

b) It's difficult to judge the smoothness of a field from the air. What looked like a flat terrain from 1000 feet could contain rolling hills. I think it makes piloting more interesting to be able to predict the nature of the terrain. Practice by viewing familiar fields from the air, and the ground, as you walk/drive by them. Pretty soon you will be able to discriminate rough pasture from smooth hayland, and flat land from rolling topography. Remember too that the smooth green/yellow fields of July and August are likely to contain 3 or 4 feet of oats, barley or rapeseed - this stuff will shorten your roll out to about 25 feet, if not flip you over. But even grain fields contain areas where growth is thinner or patchy. I've noticed that the top of knolls or ridges are less dense growth because they are too dry. Also the lower areas are often patchy due to having been drowned out by summer rains.

c) Roads in the rural areas are OK in an emergency, but watch for powerlines. Powerlines usually parallel the roads, but suspect an overhead line across the road wherever buildings are nearby.

d) Glide range: The gliding range of each machine is different depending on how heavily loaded it is and the given wind conditions. Remember a strong headwind will set you back considerably. Know your machine and how far it will glide under different conditions. It's easy to lose altitude - so I think a good general rule is to accept a good nearby field rather than a better one that may be at the limit of your glide range. Plan your approach to set up for touchdown at some predefined point. Altitude can be easily lost by doing a slip, or making some shallow S-turns on your final approach. Better to err on the side of being too high than too low. The last few tens of feet can quickly be lost in a straight side slip, or you can use the extra height to dodge a last minute fence or obstacle.

4. Cause check. If you have the luxury of extra time on your hands, the time to do a cause check comes after you've selected a field and setup your approach. While on base leg or on a long final a cursory check can be done to see if you accidentally hit the on-off switch with a clumsy gloved hand or cuff of your jacket. A restart might even be tried if you've got things made. Sometimes, the Rotax quits for no apparent reason. It might only be a minor plug fouling or temporary short circuit or momentary lapse of fuel flow and a restart might be successful.

Don't forget that your throttle has to be idle to get the best chance for a restart on your Rotax. Don't waste valuable time trying to restart it though. A few pulls is enough if it wants to go, otherwise something more serious is wrong and no amount of pulling is going to help.

5. Concentrate on approach and landing. By now your on short final and committed to landing. This is no time to get cold feet and freeze up mentally. Concentrate on your landing

point and determine if you are too high or too low. Maintain an appropriate airspeed for control and glide. Conduct a normal flare and touchdown. The roll out can be shortened by deliberately ground looping your A/C rather than meeting a fence, tree or building. If the ground loop is done at 20 mph or less you're unlikely to do any substantial damage, if any at all.

Now its time to get out and think things over. You may, or may not be able to fly out of the field you've forced landed in. The first course of action is deciding what caused the engine to fail. Chances are it will fire up and run well with only some minor tweaking. Satisfy yourself that it is running "faithfully" again before trying to take-off. If not, it's time to borrow a trailer or bring the tools to the A/C and fix it. Chances are you think you might have landed in the middle of nowhere, but it's uncanny how people are attracted to a downed A/C. Within minutes you're likely to have more help than you need.

It's good PR to repay the hospitality and help you might receive. Send that farmer a bottle of whiskey later - or if he is not too sociable to find you in his field then immediately offer to pay for damages you may have been responsible for, in the way of ruined crop.

In Summary

Forced landings happen. Often. Figure on one occurring every 50 to 100 hours of flying with the average U/L, even if your nickname is Tom "two-stroke". Forced landings can't be separated from flying they go with the territory. We need to know how to successfully execute the proven procedures for a safe forced landing. Think about this short list of steps and the order of the actions required: Memorize it and mentally play out what you would do. Visualize the situation and your actions until they become mechanical i.e. trained reflexes.

- 1) MAINTAIN SPEED
- 2) SELECT A FIELD
- 3) PLAN THE APPROACH
- 4) CAUSE CHECK (if time available)
- 5) RESTART ATTEMPT (if time available)
- 6) CONCENTRATE ON APPROACH

In this article I have concentrated on the forced landing which occurs during cruise. In a future article I will explore the procedures for a forced landing following a take-off.

Fly Safe

Take Note

Video tapes are available for rental at each meeting. \$5.00 each.

Library material (U/L magazines galore) can be borrowed by calling Bernie Kespe at 255-7419.

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Editor's note - here is the rest of the Harvard Checklist for those latent warbird pilots.

CRUISE CONTROL
 *USE CARB HEAT AS REQUIRED

RANGE: FOR MAX RANGE - LEAN MIXTURE
 - 108 KNOTS IAS / 1500 RPM AT MODERATE ALTITUDES UP TO FULL THROTTLE ALT. ADJUST THROTTLE TO MAINTAIN HEIGHT AND SPEED BUT DON'T EXCEED 26.5"
 - AT OR ABOVE FULL THROTTLE ALT. INCREASE RPM UP TO 2000 MAXIMUM TO MAINTAIN SPEED

DESCENT: ENRICH MIXTURE, MAINTAIN MIN 1500 RPM & ADJUST THROTTLE TO GIVE 108 KNOTS AT THE REQUIRED RATE OF DESCENT

ENDURANCE: FLY AT LOWEST PRACTICAL ALTITUDE - 1500 RPM, LEAN MIX. & SMALLEST THROTTLE OPENING TO MAINTAIN HEIGHT AND 87 KNOTS.

FUEL CONSUMPTION

- CONSUMPTION AT HIGH POWER, MIX. RICH			
2250 RPM	36"	- 56	IMR. GAL/HOUR
2200 "	32"	- 48	"
1925 "	29"	- 30	"

POST TAKE OFF

- B - BRAKES - TOUCH TO STOP WHEELS
- U - UNDERCARRIAGE - UP & LOCKED
- M - MIXT. RICH, CARB HEAT - AS REQ'D
- P - POWER/PITCH 28"/2000 RPM 96 KNOTS
- F - FLAPS - UP (OVER 300') TRIM

DOWN WIND 2000 RPM 104 KNOTS

- G - GAS, SELECTOR & CONTENTS
- B - BRAKES SERVICEABLE, PARKING OFF BRAKES
- U - U/C HORN, SELECT DOWN, THEN CHECK DOWN & LOCKED (GREEN)
- M - MIXT. RICH, CARB HEAT

BASE - 90-95 KNOTS

- U - U/C HORN
- P - PITCH - FULL FINE
- F - FLAPS - AS REQUIRED
- H - HARNESS - LOCKED

FINAL - 78 KNOTS

- F - FLAPS - AS REQ'D, TRIM - HELPS UP FOR RUDDER & BRAKES

POST LANDING

- FLAPS UP, TRIM 11 & 30'CLOCK

***SIDE SLIPPING**

- KEEP AIRSPEED FROM DROPPING BELOW 78 KNOTS, RECOVER ABOVE 200'

PRE-SPIN - STALL - LOW FLYING & AEROBATICS

- H - HYDRAULICS, U/C, HARNESS
- T - TRIM - LEVEL FLIGHT - TENSION
- M - MIXTURE, CARB HEAT
- P - PITCH - 2000 RPM
- F - FUEL, SELECTOR, CONTENTS
- F - FLAPS - UP
- G - GILLS
- G - GYROS CAGED
- R - RADIO COMPASS - OFF

PLUS

1. SEAT, RUDDER, LOOSE OBJECTS
2. COUPE TOP CLOSED
3. SUFFICIENT ALTITUDE
4. LOCALITY - NOT OVER PROHIBITED AREA, POPULATED AREA OR NEAR CLOUD
5. GOOD FIELD IN CASE OF F. LANDING
6. LOOKOUT, AROUND & BELOW

SPINNING 10-12"/2000 RPM

- CARB. HEAT COLD
- MAX. LOAN, THEN RICH AFTER RECOVERY

*NOTE - IF CARB. ICING CONDITIONS EXIST, A/C SHOULD NOT BE SPUN

AEROBATICS - 5490 LBS MAX.

- 228 KNOTS / 2250 RPM MAX.
- LOADING LIMITS 5.6 "G" & 2.33 "G"
- POWER - 28"/2000 RPM - MIX. RICH
- TRIM FOR 150 KNOTS
- ① LOOP - 156 KNOTS
- ② SLOW ROLL - 139 KNOTS
- ③ 1/2 ROLL OFF THE TOP - 174 KNOTS

FORCED LANDINGS

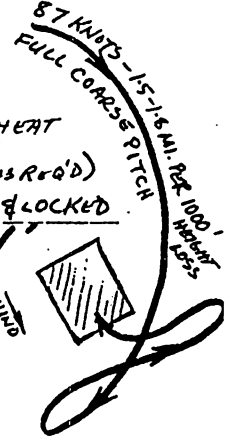
- M - MIXTURE RICH, CARB HEAT
- G - GAS, PRESSURE CONTENTS, SELECTOR
- P - PRIMER - IN & LOCKED
- S - SWITCHES - ON
- TURN TOWARDS FIELD - 87 KNOTS
- TRIM

PLUS

- G - GAS
- B - BRAKES
- U - U/C
- M - MIXTURE - CARB HEAT
- P - PITCH - COARSE
- F - FLAPS - UP (OR AS REQ'D)
- H - HARNESS - TIGHT & LOCKED

'REAL ACTION'

1. GAS OFF
2. SWITCHES OFF
3. PITCH - COARSE
4. COUPE TOP - OPEN
5. HARNESS TIGHT & LOCKED
6. U/C - AS REQ'D
7. FLAPS - AS REQ'D



ENGINE FAILURE - TAKING OFF

- NOSE DOWN TO MAINTAIN 78 KNOT.
- U/C UP - LAND STRAIGHT AHEAD, TURNING ONLY ENOUGH TO MISS OBSTACLES - SWITCHES - OFF
- DON'T TURN BACK GAS - OFF