

FREE FLIGHT

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FREE FLIGHT



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Issue 5/76 September/October 1976

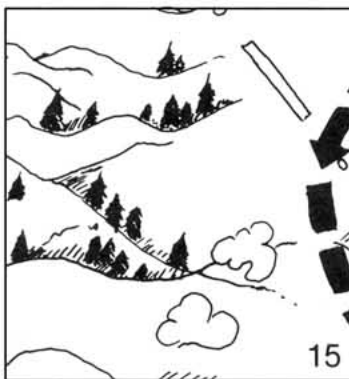
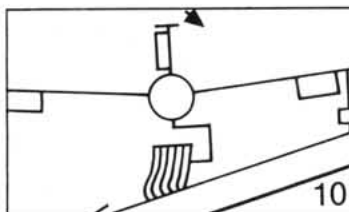
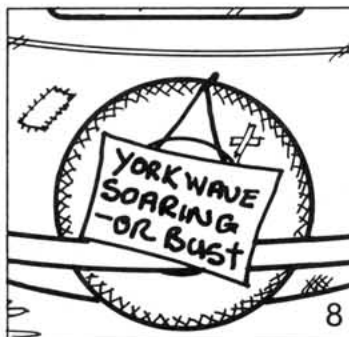
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who built the sailplane with his brother John; all of SOSA.



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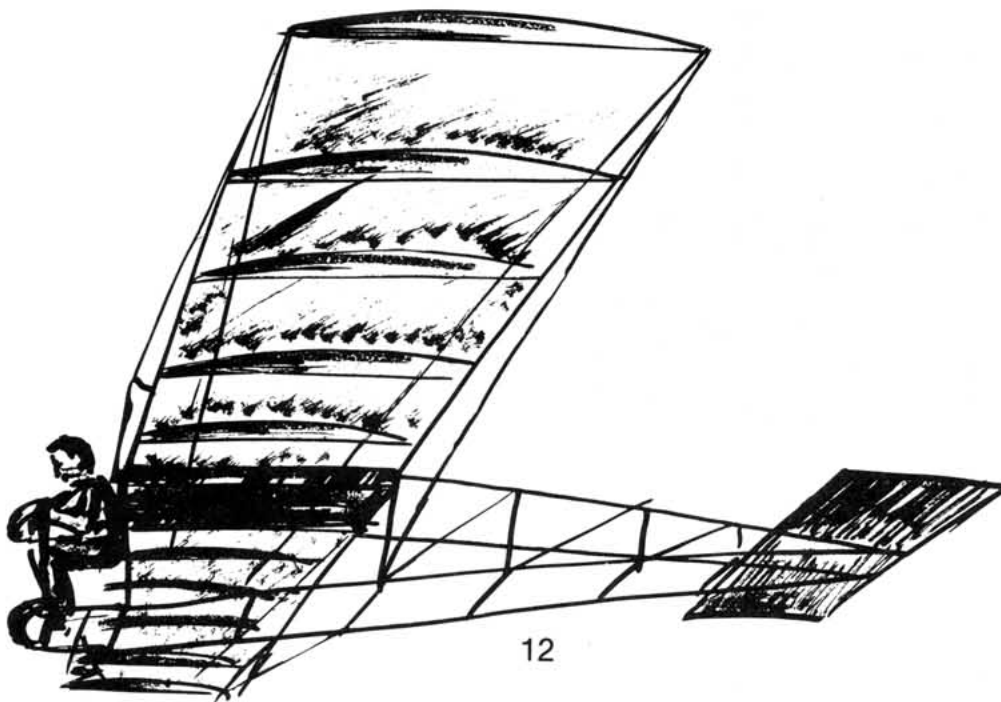
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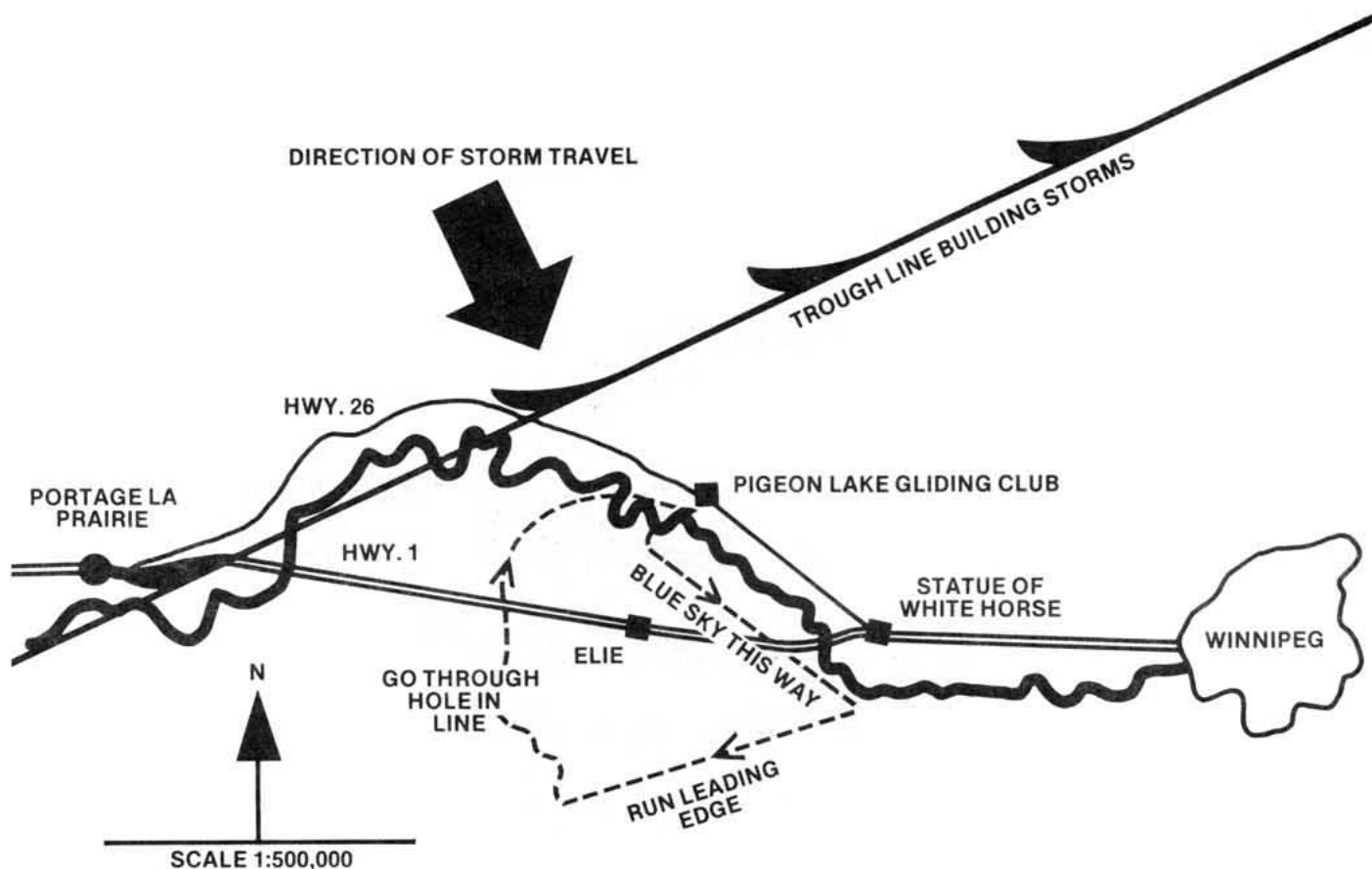
“You can keep your class one hero award thanks”

by Chris Pedersen

The wings of the HP-14 whispered to me with every gust. I was in the airman's world, threading silver wisps of cloud into a new memory. I didn't expect the nightmare the yellow bird and I were about to have.

It had been a pleasant afternoon, and meteorology thought soaring was likely. Dave Tustin, a partner in CH-HPI, had arranged for a cross-country, and I was his ground crew. But high overcast moved in ahead of a trough line, so cross-country was out. I shot a few circuits, and when a few Cu started in the late afternoon, I began working weak lift.

After 20 minutes of slow going, some promising Cu started west of the Winnipeg Gliding Club field, near Pigeon Lake. By the time I reached base at 5500' asl, it



was well developed. It seemed only moments until my world had become a well developed line of towering cumulus, running from west to east. Broad areas of good lift were numerous near the leading edge of the trough.

"Why be concerned in this situation?" I thought. After all, I'd seen it many times and knew all its limitations.

Soon I was under darkening TCU, in steady lift, 400' below base. Rain was pouring out of the down side of the line. I realized I would have to land soon because of cumulo-nimbus development.

A small shower hit the aircraft, then a harder pounding-like hail. I could see lightning and hear thunder in another cell.

"Where is the field?" I asked myself. I was just north of Elie, about six miles southwest of the field, and it looked like showers at Pigeon Lake.

Dave Tustin called on TRSA, asking me to go to 123.3, the Club frequency. He wanted to know where I was. I explained. He said to hold on out there, and then something about cats and dogs at the field. And hail.

OK Dave, I said, I'd just back off to the leading edge and stay out of harm's way in weaker lift.

In rapid fire, three bolts of lightning hotly pursued by thunder flashed within 50 yards off the nose, then left and right wings. Now, ozone is supposed to leave a peculiar refreshing essence. I thought it

smelt crappy.

This little boy then knew he had thrust himself into a bout with Nature.

There had been blue sky on my tail about two miles back. On with my artificial horizon--nose down--and a smart right 180. Airspeed 90-100 kts, 200' to base.

All I could think of was that aircraft I once saw with holes punched through the wings by hailstones, and that friend of mine who came out the side of a CB upside-down--in a Vickers Viscount!

More trouble: the gyro had tumbled on my horizon, and as I looked for blue sky, I saw the line had built up behind me. I was boxed in, going up, and the air was definitely getting turbulent. God bless aluminum.

Then I hit lift.

Consider the gliding characteristics of a crow bar. It's no lift, all drag. Then, if I'd had one to throw out, it would've passed me going up. At 100' below base, that's a drag. The fact was being screamed at me by the audio vario, as if it was shorting circuits to do it.

After a few breathless minutes, I luckily managed to avoid cloud and exit that mountain of water vapour. All I had to do then was find some way of putting tread marks on the ground.

I was south of the White Horse, a monument at the junction of Highways 1 and 26, about nine miles southeast of the field. If I landed out, I'd touch down just as the weather hit, with no tie-downs. I

called Dave. The field was OK, but wet, and white with hail. All the weather was between us. I wondered if I could lose 1000'-1500' and find a hole.

I started running the leading edge, going west, in steady smooth lift, at 100 kts. I finally lost some altitude, and was then 12 miles southwest of Elie, about 18 from home.

I spotted a small hole. If I could penetrate it I would be close to the Club.

I put the nose into it--and it closed. Did you know that in turbulence your eyes actually bounce in their sockets, obscuring sight of the instruments?

There was a large hole about two miles west, which I navigated successfully. I made a circuit over the field and finished with what turned out to be a splashdown. The grass was still white with hail.

Besides a bad case of nerves, the only physical discomfort was an acute charley-horse of the sphincter.

Dave Tustin and the evening students met me. After we'd tied down, someone provided a strong shot of "coffee" which insulated my nerves nicely.

Evening flying was cancelled--field conditions.

Epilogue: Log Book Entry: 04 Sept. Alt. reached 5500' Time 1:45. Remarks: CB, HAIL, SPITZ and SPARKEN (oh mama!) Note in Little Black Book: Go to church this Sunday.

Amen.



by Chris Pedersen,
Safety Chairman, Winnipeg Gliding Club

Numerous gliding incidents occur during take-off, approach and landing in Canada each year. We often attribute these incidents to pilot error, when wind shear is the major factor. Gliders are helpless to the effects of wind shear and only good airmanship can prevent an incident when wind shear is present. It's sad that most glider pilots don't understand the effects of wind shear.

What is wind shear? It is a change

in wind speed and/or direction in a short direction resulting in a "tearing" or "shearing" effect. It is produced by a relatively steep wind gradient (rate of change) in wind velocity along a given line of direction. It exists in either a vertical or horizontal direction or both. Since the zone where the abrupt change occurs produces a churning motion, shear often produces turbulence. It should be noted, however, that minor shear, which is often

encountered by gliders, does not always produce this buffeting. The results of wind shear can be quite hazardous if unrecognized by glider pilots.

Shear occurs in thunder storms, and is associated with the movement of warm and cold fronts. Glider pilots do not often become involved with these so we will limit this discussion to the types of wind shear more often encountered by gliders. A cold pocket of air trapped in a valley, or prevalent in the evenings close to the ground, with warm air above, will cause wind shear. The temperature changes that occur between every thermal and it's surrounding body of cooler air causes wind shear. Trees or other obstructions close to the ground produce wind shear.

To understand the effect of shear on an airplane we have to consider the lift, weight, thrust, drag, vector diagram. Let's consider a normal glide where weight equals lift and thrust equals drag. (Fig. 1).

Suppose the glider passes through a shear that reduces the indicated airspeed 20%. The new airspeed (80% of original value) produces only 64% of the original lift and drag at the same angle of attack. This will cause an unbalancing force (fig. 2) that accelerates the aircraft down and forward until equilibrium is reestablished. There will also be a change in pitching moment which will cause the glider to pitch down.

Generally if you encounter wind shear that reduces the indicated airspeed, the glider will tend to sink and lose altitude before equilibrium is regained. Similarly, if the shear increases the airspeed, the glider will float and may gain altitude before regaining stabilized flight.

To better understand these variables we must consider ground speed. Ground speed is the sum of the indicated airspeed and effective wind component. It is directly related to rate of descent needed to keep the glider on its intended glide path.

For example; if we are approaching at an indicated airspeed of 55 mph into a 15 mph wind, the ground speed is 40 mph. If the wind quickly subsides, the airspeed will drop to 40 mph, but will increase as the glider accelerates back to the original airspeed of 55 mph. The airspeed was regained by an accompanying loss of altitude, (changing potential energy for kinetic energy). You will now find that you have a much improved glide angle because of the increased ground speed.

You can see (fig. 3) that the effects of decreasing headwind shear are

different depending on the height above ground, the rate and magnitude of shear. If the wind shear occurs close to the ground, the glider would hit short of the runway, however, if it occurs at a higher altitude, the glider would tend to over-shoot the desired touchdown point.

Consider the decreasing tailwind shear by assuming a tailwind becoming calm on the ground, (fig. 4). The glider will be floating while in the tailwind due to the increased ground speed. Upon encountering the shear zone and calm winds, there would be an increase in airspeed. An increase in airspeed will cause the glider to pitch up and maintain altitude with the same angle of attack, resulting in overflying the intended glide path. After the airspeed is restablized, the reduced ground speed will give a poorer glide angle. This will cause the glider to drop the intended approach path and end as an under-shoot.

If the wind shear occurs close to the ground, a long floating landing could result. If the shear occurs at a higher altitude, the glider will hit short of the runway.

The aerodynamic forces resulting from passing through wind shear are the same during take-off and climb as they are on approach.

Consider the effect of a decreasing headwind shear shortly after take-off. This occurs when take-off is made around trees or other ground obstructions, or more dangerously under calm conditions.

The glider takes off in a calm wind then passes through a sharp shear and encounters a 15 mph tail wind. At lift-off, the glider and towplane achieve a speed of 55 mph. When they come from behind the ground obstructions, the airspeed drops to 40 mph in the tail wind. As the airspeed drops both the glider and towplane will start sinking, the pilots will increase the angle of attack and thus both aircraft will be at or near the stall. Hopefully the glider will be in a proper tow position, and thus not compound this bad situation.

Good airmanship dictates that you always plan your circuit with an ace up your sleeve. If you are not aware of the wind condition, don't extend your landing glide. Always land into wind, and be aware of the effects of trees, hills or other obstructions on your final approach path. A well planned circuit at all the proper altitudes for your glider is essential, particularly when landing out on a cross-country. The SAC recommended approach speed should be used. Stall speed plus 10 mph plus one third the wind speed, plus more in turbulent conditions.

FIGURE 1

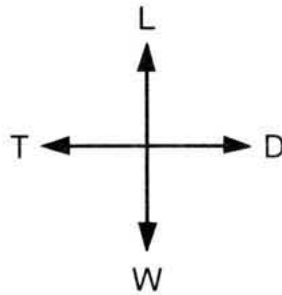


FIGURE 2

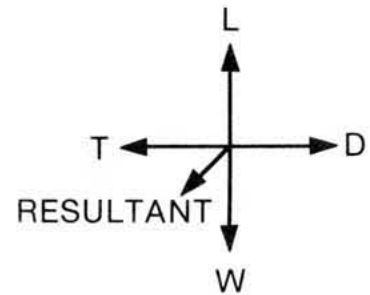


FIGURE 3

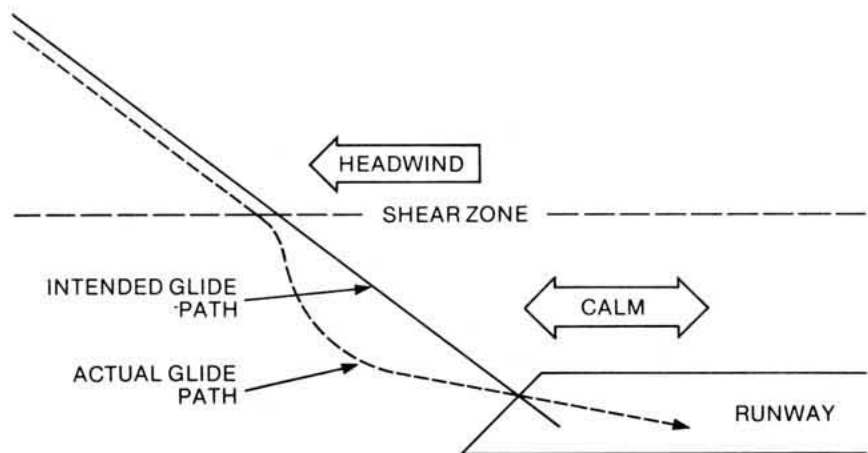
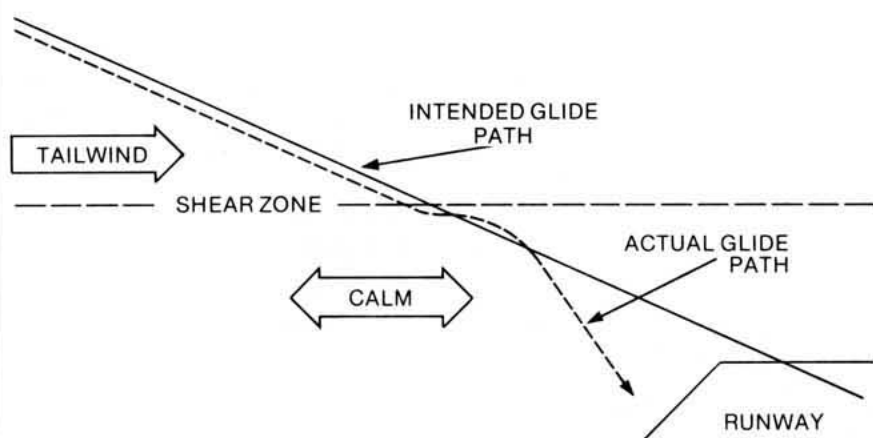


FIGURE 4



Although it is a rare occurrence that a glider pilot ventures (or blunders) into a positively controlled airspace I cannot help but add my my two-bits worth to the raging controversy over the use of French language in communications with control towers.

The various associations within the aviation fraternity formed a phalanx of opposition against the introduction of French. The first argument used is that English is the official international language of aviation. The second is safety, whatever that much misused word means. Incidentally, to the best of my knowledge, most, perhaps all of these associations, are dominated by Anglo-Canadians with very little French participation. Considering the severe case of lockjaw most Anglo-saxons suffer trying to pronounce a French, or any other foreign word, it is no surprise to see such a concentrated opposition.

Since I am in the comfortable position of being neither Anglo or of French origin and having many good friends on both sides, I shall attempt to illuminate the question at hand from a neutral point of view and bring up a few items which seem to have escaped the attention of the opposing groups.

First of all French is an official language in Canada by law. All our federal institutions are supported by taxes levied upon the population at large including the French, therefore they are entitled to use federal services in French. This point alone should suffice to settle the matter once and for all.

As for English being the official international language of aviation, the emphasis is on "international". That is, English is to be used in addition to the native tongue, in order to accomodate those pilots whose French, German, Spanish, Italian, Greek, Hindustani or Swahili is not up to par. I have flown extensively in Europe, South and North America and with the exception of the latter, bi-lingualism is the rule rather than the exception. Our airline pilots objecting to the French language in Canada surely must have noticed this bi-lingualism elsewhere in the world; unless in addition to lockjaw they also suffer of selective deafness like my father-in-law in family arguments.

Elemer's Briefs

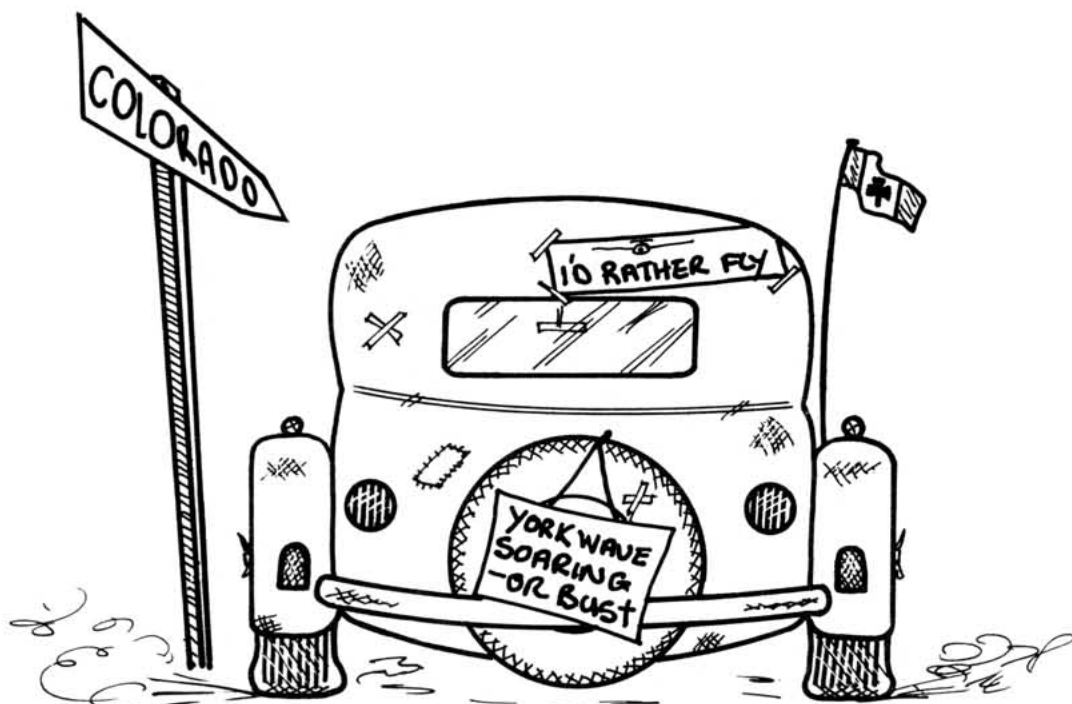
By Elemer Balint



While our Anglo-saxon pilot fully expects and gets tower communications in English while flying in Quebec, he seems to deny the reciprocal service to his French counterpart. Apart from the questionable morality of such an attitude, it is patently unsafe not to provide French communication to a pilot who does not speak English (and he does not have to, you know), particularly since it is not possible to deny him the constitutional right of using any Canadian airport. That is his right by birth, as a citizen and as a taxpayer who helps to finance those facilities. He would be a poor

citizen if he did not insist on receiving his due. In trying to prevent the use of French in communications in Quebec the opposing forces are totally missing the point that a French-Canadian pilot is fully entitled to use French anywhere in Canada. It would be amusing to test the case by dispatching a few hundred French-Canadian pilots at five or ten minute intervals to some major Ontario airport.

I admire the patience of the French in dealing with this subject, which should have been tested in the Supreme Court of Canada a long time ago.



A while ago the editor of "Free Flight" asked me to write a few words on the operation of the York Soaring Club wave camps, which have been annual events for several years.

I have now attended the camp five times, so I am somewhat familiar with the operation.

Though the camps are sponsored by York Soaring, and all of the organization is done by Walter Chmela of York Soaring, the camp is not restricted to members of that club. If you want to go, contact Walter in the summer or early fall and leave a deposit with him. The camps take place during the first week or so in January at the

"... be sure
that somebody
hollers loudly
on your
behalf.
No Speak up,
No aircraft."

Black Forest Glider Port, near Colorado Springs, at the foot of Pike's Peak. For those who require transportation, Walter usually arranges car pools. Expenses for gas and oil are split, and many drivers travel through to their destination without over-night stops. Such a trip takes 25-30 hours of steady travel.

At Black Forest, accommodation is dormitory style, though a few motel rooms are available at the Lennie Inn,

on the airport site. One dormitory room accommodates 8 persons in 4 double bunks, another takes 4 people in two double bunks. Sheets, pillows, electric blankets, face cloths, towels are provided. A couple of members of the camp act as cooks in the dormitory kitchen, and dishwashing and other chores are done in rotation by the rest of the camp. Most of the time we have had good cooks, so we have not existed on hot dogs and hamburgers and beans. Your major food problem will be overconsumption.

What about the flying arrangements?

First, Black Forest requires an orientation flight before you are sent off solo in the wave. Naturally you should check out as soon as possible after arrival so you will be ready when the wave is present. A brief manual describing the wave-flying operation is available and usually you will get one when you make your deposit with Walter Chmela. You should be familiar with its contents. Once the check flights have been completed, then the usual procedure is for Dick Sayer, the CFI at Black Forest, to hold a briefing session about 5 p.m., to consider the forecast for the next day, and to assign aircraft. If the weather looks good - i.e. there is a likelihood of a wave, there will be another weather briefing the next morning, before flying. Aircraft are assigned in the order in which pilots register in the fall. If all pilots who desire to fly do not get a flight on a given day, those who did not fly head the list on the next flying day. If you cannot be present at the evening briefing, and want to fly, be sure that somebody hollers loudly on your behalf. No speak up, no aircraft.

If the weather forecast of the prev-

ious evening has been good, breakfast is usually over by 8 a.m. when Dick will arrive with the latest weather situation. If it looks good, then it is up to you to preflight your assigned ship, and get ready to fly. The nominal take-off order is according to the aircraft assignment order, but if the persons on

"... squeeze into
the cockpit,
and you may
be off
right away."

the list aren't ready, and others want to go, as often happens, the prepared pilot gets the tow. Customarily, those who are down on the list help those first on the list to get the aircraft out of the hanger. Returned pilots help those who still have to go aloft. As to your own preparation, after you have checked the ship and gotten dressed, then you get your ship to the flight line. Put in the plane the emergency oxygen bottle, barograph, parachute, microphone switch and helmet and oxygen mask which you should have previously checked for fit and leaks. Add your own sunglasses, camera, extra gloves and whatever other paraphenalia you need. When you are all set, two or three friends will help to squeeze you into the cockpit, and you may be off right away, or there may be

York Wave Soaring Camps

by Don Clarke

a short wait till a tug appears. Never very long, once you are ready. After the usual flight checks, the office will ask for a radio check, oxygen and barograph check, and you will be reminded of the maximum altitude allowed. (If there is a wave, a block of airspace is set aside for gliders, and you must remain within this block. No problem, usually.)

I won't go into the business of flying rotor and wave. If your head hits the canopy no more than twice, that is mild rotor. If you find yourself upside-down, rotor is severe. As for the wave, be realistic. All waves are not of the 2000 feet per minute for 10 minutes variety. You may hit something like that, and it is a wonderfully heady experience for the average Ontario

“... if you
find yourself
upside down,
rotor is
severe.”

pilot to see the altimeter hand winding about at a rapid rate. More frequently the lift is considerably more modest, but it is lift, it is wave—very smooth, very quiet, pure bliss.

After you return from your successful diamond or gold flight, deliver your sealed barograph, along with some additional information to Dick Sayer.

Then leave him alone. He will be very busy. Then buy a case of beer, as is the custom for such flights. Then tell everybody how superbly you flew a difficult rotor and wave. Others will listen to you, if you will listen to tales of their superb flight.

A frequent question concerns clothing. Generally I have been comfortable, after 2-4 hours above the peak, with the following: Long underwear, then a half (lower) suit of thermal underwear. Flannel trousers on top of that, and a lower half of a padded flight suit over that. The latter is available at Black Forest, as are several other items of cold weather flight gear. For the top half, I wear a heavy shirt, heavy sweater on top, and then a ski jacket. I usually start and finish flying with lined gloves, switching to ski mitts during the latter part of high altitude flight. For the feet, heavy sox, shoes, and then an ancient pair of fleece-lined flying boots have kept things snug. I have observed that snowmobile outfits are used by many pilots, and they seem to be satisfactory. Electric sox, have not been used much.

How about costs? My figures are approximate, but will give a “ball-park” estimate. If you are one of a group going by car, allow about \$75 for your share of gas, oil, depreciation, food. Food while there will not be more than \$20. Your bunk will cost \$40. Add \$10. for books and odds and ends you might pick up at the Glider-port. If you ski during the non-flying days, additional costs will be about the same as they are here for rental, tows, etc. The heavy cost will be flying. Each tow will cost \$15-\$20. You start at 7000 feet, and release is between 11,500 and 14,000 feet. The cost of

flying time depends on the ship you use, and how long you fly. On the average it would be fair to say that each flight to the Peak will cost about \$50. Better allow \$200. for flying, so the total cost will be about \$345. If you want to fly out, economy return fare is \$221.

What are the chances of getting a wave? In the five times that I have

“Electric Sox
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been
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much.”

been at Black Forest, there has been flyable wave activity on at least two of the five or six days that I was there. So the chances of hitting something on any given week would seem to be good. It is perhaps worth emphasizing that you must be prepared to take a chance that you may not get in the wave on any given flight, and that if you really want a gold or diamond altitude gain, then you should be prepared to fly on almost any day that there is an indication of any activity. Sitting about the airport wondering if the wave is workable does not gain altitude.

So there is a summary of what you might expect at a wave camp. Is this for you?

INS AND OUTS OF RUDDER

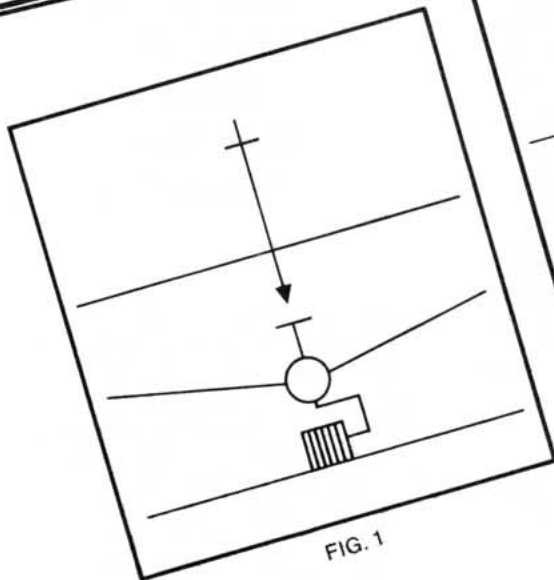


FIG. 1

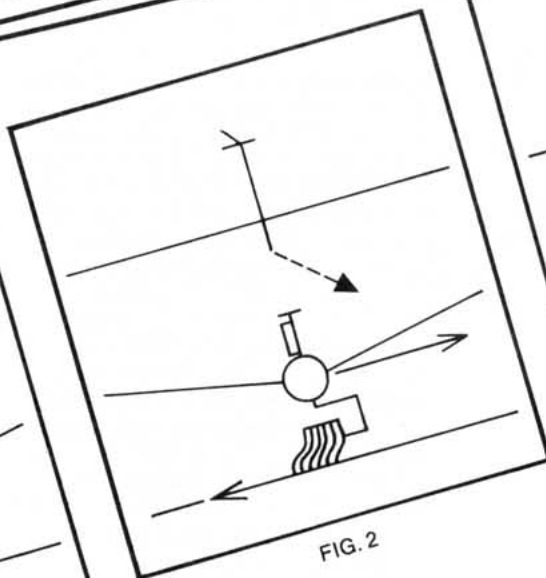


FIG. 2

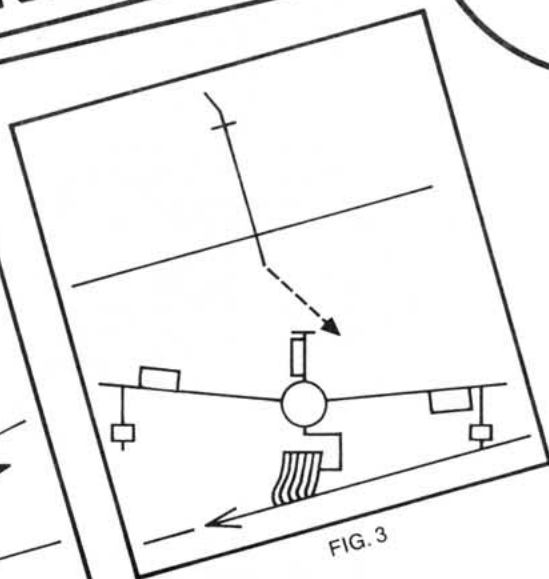


FIG. 3

ON THE GROUND

by Don Band

I have noted in the past that much attention has been paid to thermalling techniques, turning on tow and secondary effects of controls on the ground. Wait a minute! Did the last one get by? We all know about secondary effects of controls, don't we? Or do we? We step on right rudder and the left wing comes up, right? Wrong! At least wrong on the ground. Let's have a look at the physics involved.

In fig. 1 we have a sailplane on tow but not yet airborne. Rudder is neutral, wings are level, and our glider pilot is happy.

What happens if we push right rudder? Well of course, the aircraft yaws right. The left wing moves forward, produces more lift, and tends to rise. This is the effect that we are so familiar with in the air. The bywords, however, are "tends to". On the ground, on tow, we have other forces that come into the picture.

Take a look at fig. 2. When we yaw the aircraft, if we have any weight on the wheel, it will produce a side force. The magnitude of the force will depend of course on the yaw angle (thus the rate of turn) and the weight on the wheel. Now this force accelerates the aircraft sideways. If the centre of gravity is high in the aircraft, the resulting rolling tendency is large - and tends to roll the aircraft to the left. Add a misaligned tow rope and the situation becomes downright interesting!

Let's take it from the beginning using some typical conditions. We have a 2-33 taking off with an

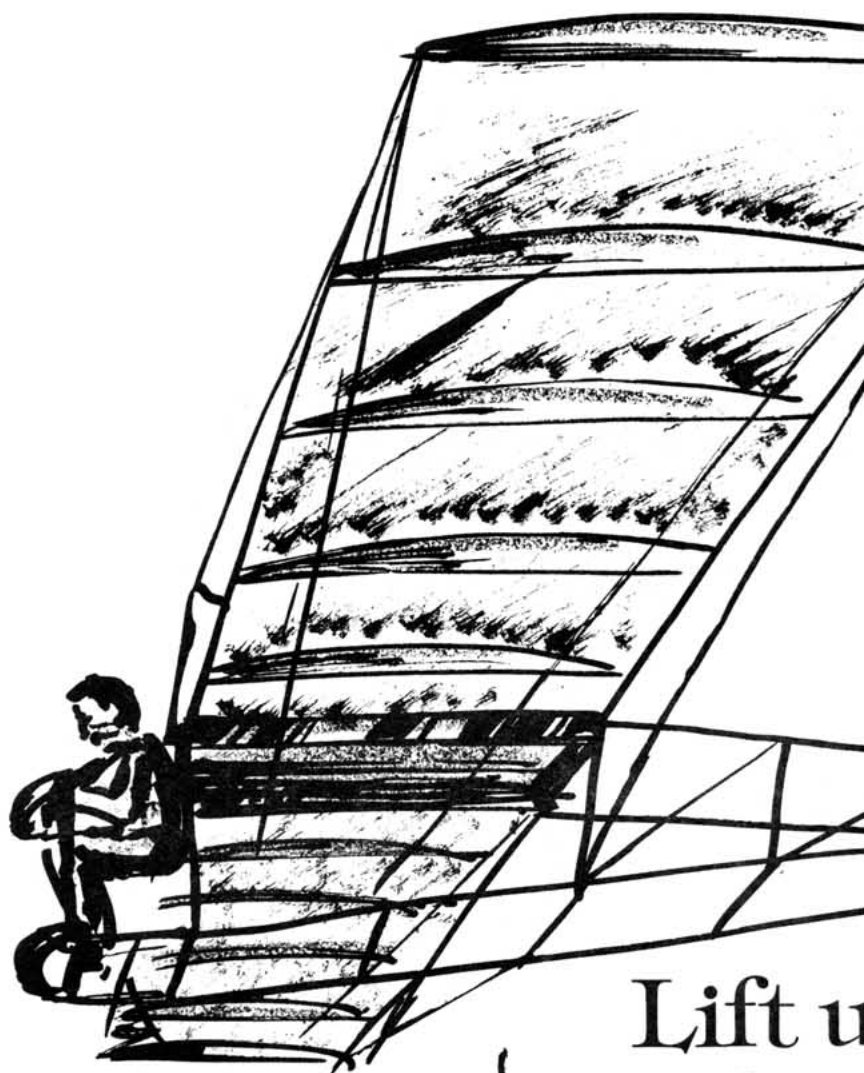
inexperienced wing runner. The 2-33 has a high C.G. and a high mounted tow hook. Our wing runner drops the left wing. The pilot applies full right aileron, but this is not enough to raise the wing. Perhaps there is a bit of cross-wind. In desperation he applies full right rudder in an attempt to get the wing off the ground. We now approach a situation similar to that shown in fig. 3.

The aircraft has begun to yaw to the right under the influence of the full right rudder. Centrifugal force, low airspeed, and an out-of-line condition on the tow rope have combined to produce a hopeless pinning of the left wing on the ground.

The pilot releases, and when asked what happened, he states, "The wing went down and I couldn't raise it. Who was the wing runner? I want to talk to him." Sound familiar?

Of course in practise an experienced wing runner can keep the wings fairly level and because of the higher airspeed, aileron may be sufficient to raise the wing. Then again as soon as some weight is off the wheel, the aircraft rolling tendency is limited and the above analysis becomes less representative. In some types, the wingtip does not slide or roll well and rudder is necessary to maintain directional control - wing down or not.

The point of the matter remains however; on the ground right rudder tends to bring the right wing up, and left rudder tends to bring the left wing up, particularly at low airspeed. Don't get caught in the trap!



Lift u

Heard the glider

Don MacClement was one of the founders of S.A.C. In March he was guest speaker at the A.G.M. banquet and FREE FLIGHT asked him to write out his talk for all members to enjoy. Don is still very active in gliding having helped form a new club at Okanagan within the last year.

It was 1905 and the Wright brothers were qualifying for their soaring badge at Kitty Hawk. My being born then had little influence on the Wright brothers but their soaring certainly influenced me. We lived in Queen's University grounds and I had the run, more or less, of the University buildings. A favourite place was the Faculty Reading Room where there were lots of fascinating magazines. One in particular was my favourite - Scientific American.

In the spring of 1915 I came across a full page illustration of a glider. At the top of the page was a drawing of a brave young man standing poised at the top of a cliff overlooking a river. He was holding under his arms a delicate looking biplane glider. The dotted line showed his flight path out and up over the river, then gently down to the far pasture field.

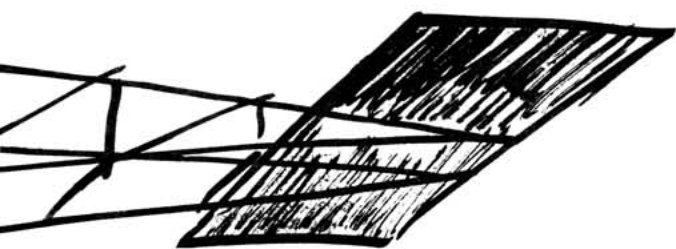
I was already fascinated by flying machines and here was one that maybe I could build. The text below the picture had several little drawings showing the details of how the spars and compression members were braced by wire from metal fittings, and the magic curve of the single surface aerofoil.

That picture was looked at so often

that the magazine opened automatically at the place. Then, when it was put on a back shelf with the arrival of the next issue, I cut out the page. Weeks went by and my theft went undiscovered. After a while my conscience didn't even bother me.

With the beginning of summer holidays we moved out to the family farm at Collins Bay. The huge empty barn was a good workshop. I soon bought up all the long bamboo poles at the village store and set to work whittling out the curved ribs from a crate of long 4" cedar shutter slats left over from building the house.

A pocket knife, many hours and blisters later made slow progress. And how was I going to make all those odd-shaped metal fittings that



up your feet - you can fly!

by Don MacClement



held the compression members to the spars, and the spars to the struts and longerons? The solution came from an unexpected source. I had gone to the village a mile away to visit my friend Dave Rankin. He was not at home so I went on to watch Billy Bonney, the village blacksmith - and village drunk. My parents did not approve of him but I found Billy good company, always full of good jokes and wise sayings. I told Billy by problems and showed him the pictures. His remark, "So you're building an aeroplane!" startled me. I thought of it and spoke to my parents of it as a "kite".

This was the turning point. Next time I visited the blacksmith shop, there were dozens of neat metal fit-

tings, and I was shown how to split the slats into 1/4" square sticks, boil them in a copper wash boiler, and bend them around a pattern of nails Billy made on a plank.

A big purchase was the piano wire from the Webber Piano Factory at the bottom of Princess Street in Kingston. Have you ever wrestled with a roll of spring steel wire? I'll bet you lost! Somehow Billy cut it and shaped the ends to fit the metal plates. I drew out the last of my Post Office savings to buy a lot of little turnbuckles, the most expensive things in the whole machine.

It was getting late in the summer when the spars, ribs, compression members and longerons were all fastened together. The village store had

run out of fishing poles, so it became a wire brace monoplane instead of a strut braced biplane. And anyway I weighed barely half that of a full grown man.

Billy Bonney seemed to find no difficulty in designing a rectangular pyramid in the middle which extended above and below the wing and held the flying and landing wires. There remained only the fabric for wing covering. My bed sheets soon disappeared and although I got a scolding, it was worth it. The stitching was by hand and nearly wore out my patience, and my fingers.

I was impatient to try it, but Billy insisted that we "do it right". A foul smelling mixture of drying oil, castor

oil and heaven knows what else, was brushed on the fabric. According to my aeronautical advisor, it made it waterproof, airtight and flexible. It certainly made it a pale mottled brown colour.

Days later, when the "dope" had dried, I carried it out into the big pasture field behind the barn. Getting inside the central pyramid was no trouble, but lifting the whole contraption, and trying to run took a lot of practice.

When I could run fast enough the tail came up off the ground and I felt the wings begin to lift. But every time I stumbled it was a nose-over in the dirt plus scraped shins. It helped when Billy Booney added a rattan half circle bumper in front of the longerons. Wind helped, and soon I was running down the slight slope into wind taking giant strides.

Summer holidays were coming to an end, the wind was stronger, I was practicing running up and leaping off a huge boulder half buried at the top of the slope. Billy Bonney had walked up from the village and was watching and coaching. As I ran and jumped off the boulder he shouted, "Lift up your feet, you can fly!" Only a few seconds but I was hooked. From then on the only important thing was how to make it last longer.

Fall and school in town and the "kite" was hauled up into the hayloft out of sight. My parents never knew that the "kite" was a real flying machine. Mother was an invalid, in bed most of the time, and father was too busy with his teaching. I spent the winter dreaming of flying and doing as little school work as possible.

Summer and the close of school and the hope of a bigger hill. Kingston is on mostly flat limestone, so it had to be an artificial hill. Our big old stone farmhouse had a large back shed facing north-west. From many roof climbs, I knew that the wind often blew up this combined slope from the field behind it.

Ambition is a powerful force and can overcome even gravity. After more practice in the field, I dragged the machine part way up the roof. Getting into it on the shingle slope was a tricky business. When I straightened up there was no stopping. A few quick steps and my feet left the shingles. Over the shed roof and out across field, filled with a mixture of fear and delight, almost ready to be sick, but wanting the sensation to go on forever. Leaning back brought the tail down and slowed the landing to a short run.

I had flown into another world. If it hadn't been for alarming the people in the house, I'd have shouted and

yelled. I know that I was shaking. It looked a long way back to where I had started, and the only thing to do was to get back up and do it again. And again and again. I was soon starting from the ridge and gradually wearing a path down across the old cedar shingles.

Now the glides carried me close to the rail fence along the next farm. A slight lean produced a slow turn away from it and I gained a lot of new confidence. I was lucky, very lucky, for the little by little system of learning had avoided serious mistakes, and Billy Bonney's magic had produced a remarkably stable flying machine.

I could never get Billy to fly off the roof but his merely running and jumping around the field with the kite left him grinning from ear to ear. When he watched me sail out from the roof top, I could hear him below, jumping up and down and waving his arms as though trying to take off.

That fall the rain came through the house roof where I had worn the shingles. As punishment I had to work in a cold rain, hammering in shingles to stop the leaks, and had to promise to stay off the roof.

That winter with the kite safely in the hayloft, I didn't dream of gliding nearly as much as the previous one. I read all the stories I could find about flying, and there were lots about the fighter aces in France. We had one of our own, for Billy Bishop spent much of his leave in Kingston. But the gliding pioneers lived in a special world, and I could share some of their feelings.

Spring of 1917 brought a solution to one of my problems. Mr. Flynn, who ran our farm, had built a lean-to pig shed at the back of the barn. It was a bit scary at first, pushing the kite up the ladder onto the shed, then up the long slope of the barn roof. It seemed to take ages, inching my way up, pushing the machine ahead of me until I could hook the tail over the ridge.

It surely looked a long way down, for the barn was higher than our house, and the whole pasture field lay in front of me. The familiar contortions of backing up the slope into the centre pyramid was not difficult, for the barn was newer than the house, and the shingles not nearly so crumbly. Then the quick run and easy lift-off. What could possibly equal the wonderful feeling of being in the air?

There were chores to do, for we were all supposed to be helping the War Effort, but they left lots of time for gentle glides across the pasture. Mr. Flynn did not approve of my activities, calling the kite a "devil machine", and just knew I would break my silly neck.

For some reason he never told my parents. The only other one who knew of my flying was my chum, Earl Morris, who from the age of a year older couldn't believe that anything that I made would really work. He was interested in flying, but only in things with noisy engines.

I soon learned that when the wind blew up the barn roof, the flight was higher and longer. As fall approached the winds were stronger, and there were several tussles with part cross-winds which made the whole operation tricky. Exploring the lower end of the speed range left me hanging almost motionless in an unnatural quiet without the usual humming of many wires. It also introduced me to the stall, when the kite suddenly went down and my stomach went up. Once was enough to teach a healthy respect, and fortunately I was high enough to recover.

With low clouds scudding by, and the wind whistling squarely up the barn roof, I needed no run at all, being lifted off the roof as soon as I stood up. Looking back down between my feet, the ridge was well below me. Slowly we crept forward without seeming to lose height. Wouldn't it be terrific not to have to come down at all! The air was rough and the landing was scary, for the gusts tossed up around unpleasantly. Getting the machine back into the barn was quite a struggle. When it was put away I felt weak from the combined physical and emotional strain.

Here was a new door opening. Given a big enough hill and a good wind, one could surely stay up, instead of sliding down through the air.

Next day it was raining slightly but the wind was just as strong. Getting the kite out of the barn and up onto the roof needed two men instead of one skinny boy. The men were not there so the boy thought he could do it. Half way up the roof a gust wrenched it out of my hands, it cartwheeled up over the ridge and disappeared with sounds of splintering and tearing. I hated to go and look at it. The wreck was much more complete than I expected. There was nothing beautiful about the junk that I dragged over to the little stone quarry in front of the barn. Getting matches from the kitchen I set fire to the remains. Seeing the flames, my sister came out and asked why I was burning my kite. I don't think I even replied.

Strangely, I did not feel sad. Disappointed, yes, in not having another soaring flight. I knew the kite had been a real success. No one could take away from me that deep satisfying thrill of having built and flown my own glider.

THE RETRIEVAL OF

SIX

SIX

SIERRA

By Geoff Morgan

Last-minute negotiations were the order, as weather and crew changes held us in suspense. Friday 26th was finally decided upon, and the day greeted us with snow showers and low cloud. Ken Thoms, Ken Holmes and myself made the Enderby strip by late morning, and finally trundled off the snow-covered ground at 1145 heading south for Kelowna and the fourth member of the crew.

Randy had come somewhat overprepared, and a reallocation of gear had the Champ-ions finally loaded with a full complement and out bound for Oroville, Washington, and the customs check. A friendly official made a brief inspection of persons and planes, and stopped to shoot the breeze about dope freaks and immigrants. One Geoff Morgan was seen to lurk! A cache of oranges was dug out and peeled, the skins being consigned to the man, and the insides to insides. Then up and away into the sunshine, cruising at 6000' over the barren uplands of Northern Washington where wheat farmers scratch amongst the rocks and humps for soil. Central Washington gives way to easier climes and good soil, with tractors furiously cultivating and seeding, and the huge circular irrigators describing lazy circles in the sun. First fuel stop at Ephrata, an old A.F. base. Feeling we'd made pretty fair progress, we consulted the large wall map in the office to note our general course. Incredible how little of the total distance had been covered. Oh, well!

One more leg saw us to Pendleton, Oregon, at last light, and a warm welcome by Jim and Betty? of Roundup Air Services. Bourbon and whiskey was the order and, after a pleasant hour of such fare, bags were pulled and planes locked for the night. Our ground transport was Jim's car, kindly donated to the cause - a 1975 Sedan de Ville Caddy with all the trimmings. A "wait-till-I-tell-the-folks-at-home" car. We hit John's Cafe for smorgasbord, then back to the motel to spread maps and decide upon day two's moves.

Saturday, March 27 - and a shot of motel Maxwell House got us going, early. John's provided the nutrients, and after fueling up and inspecting Jim's fleet of crop-sprayers, we departed Pendleton at 804 hours for points south. Country rose quickly to snow-covered uplands as we made toward John Day under a lowering ceiling - and lowering boot temperatures! Made John Day for fuel, and with negative weather reports preceded south toward Burns where from there on, we were assured, the weather would be A1 to Phoenix. So near, yet so far! Low ceilings turned us back from the southern route and, after a try to the east and Boise, we again went in at the South and made it through between pine tree and cloud. Ah, the sun! Still bitterly cold wind, so we stayed long enough to fuel, and then back in the air with destination Winnemucca. Bog land gave way to low, snow-covered ranges to craggy cliffs and dry alkali lake deserts as we crossed the state line to Nevada.

My first hour of power flight was experienced as we tracked across an empty expanse of brushland south to Winnemucca. Not so cold in Nevada, but even with the sun, it was a shivering group that had

cold pop and sandwiches on the tarmac. Sky was looking very lively with a good steady wind to support some fine cross-country soaring. Southerly heading still with destination Lovelock. The ground rose steadily and was very barren and deserted, with trails criss-crossing it in long straight lines, seemingly coming from and going to nowhere. A low summit area showed signs where a seemingly berserk bulldozer had gouged holes in search of surface ores, and old workings were testament to something of value being found. The place and purpose of the very occasional habitation seen remained a puzzle. A restricted area forced us into a range of mountains to the west, and we flew along the extremely rugged flanks, seeing the foxholes on impossible slopes where miners' hopes were sweated out. Gouges and diggings and remains of old shafts showed the success of some. To most it was desolate and dry and dead." "How's the water-bag Ken?"

Across the bottom of the Carson sink we flew, spending a little time relocating each



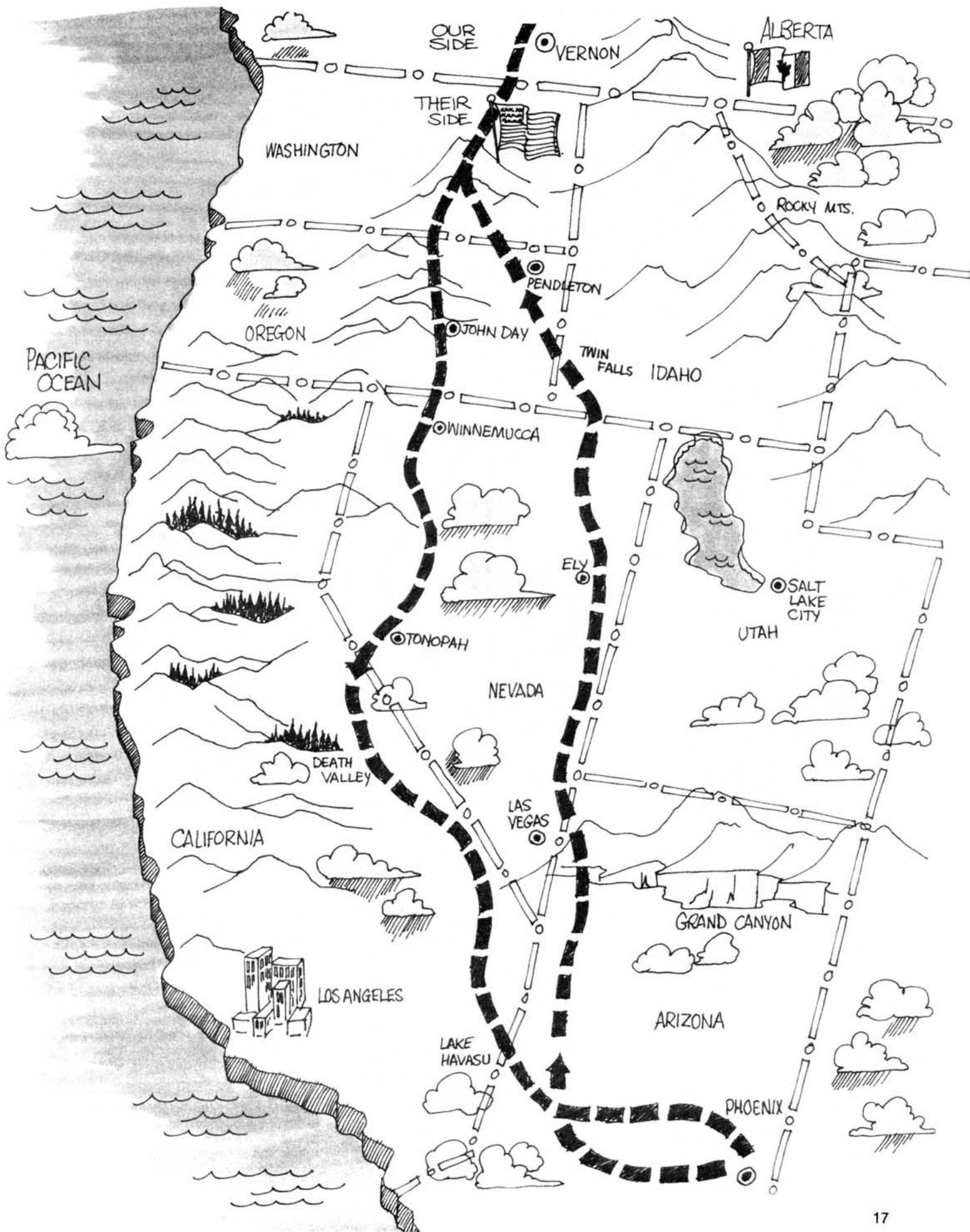
other after crossing the mountain range. The little Citrabria didn't really want to jump that high in one leap! Hawthorne was bypassed its miles of military ammunition dumps providing an interesting spectacle from the air. Hills to the south were socked in, pushing us to the east, where low fuel reserves dictated Tonopah as our next stop. The light was fast failing as we fueled. "How many gallons do your tanks hold, Ken?" "Oh!" Tonopah is an old W.W. 11 bomber base, and is quite huge, with long runways and extensive ramp areas. The base is long dismantled, and all that remains are some old hangars, a flying school, and an F.A.A. station - and the wind, cold and mean. Oh, for Death Valley and eternal warmth! Eight miles from town, and no Caddy tonight. Scratched amongst the debris for a sheltered place to pitch the tents, until Randy mentioned a rental car sign. Good enough! Maverick and us headed for town and food, the first consideration. The "poke" machines rattled and the keno numbers blinked as we ploughed

through liver and chicken and beef and stuff in the Mizvah hotel cafe. That done, and some small change "deposited," we headed for the cheapest digs on the west end of town. "Room for four, please." Two of the four were later seen to sidle back up the street and enter the Mizvah once again, there to pressure a few machines, and park comfortably against the old bar and see Tonopah as it was - and is. Raunchy old-timers pumped their partners about to some good old C & W, bullriders rode every Brahman bar stool in the territory, and the grizzled staked his week's welfare claim on the dice roll. Quite an evening!

Sunday, March 28 - and the early morning sun swept into a bright, clear sky as we returned to the Mizvah for breakfast. Several revellers were still propped to the walls and bar from the previous evening, and were largely oblivious to the world stirring about them again. A quick tour of the town's one back street to look at the old mine site and the impressive stone black jail followed, then out to the airport to be greeted by the same cold north wind. An old hangar revealed some "gems" as Ken T. called them - an Avenger, some Stinsons and a lean-to full of old radial engines. An intact B25 had been flown out some days previously. Up and away we went again, heading southwest to Goldfield to view a well-worked-over area of goldmines, attended by a largely derelict town. A most interesting spectacle when seen from the air. Then, south over low boney hills to Scotty's Castle, then into Death Valley itself, flying along the eastern rim mountains with their dry washes and steep-sided canyons. Death Valley Monument is a real oasis, complete with date palms and cool, shaded water. We hoofed the half-mile to town to view the museum, old mining equipment and other relics of this historic area. Randy was seen to stare wild-eyed in the direction of the pool, so we whisked him out of there and on down the valley at 2000', bound for Lake Havasu. The salt flats gave off a relentless glare, and it was almost pleasant to see desert brush and cactus again. A large dune area in the midst of a barren plain was crawling with buggies, whilst a village of airconditioned campers waited nearby. Such contrasts.

Upland ranches dominated the cactus plains of Southern California, and the busy four-lane highways provided further contrasts as they bisected the barrenness. Flat-topped butresses - characteristic of the canyon country - featured, and much UP was experienced as the ground heated in the early afternoon sun. Across to the southeast we headed, getting lost from each other occasionally, and finally coming together along the Colorado at Lake Havasu. Ah, the Arizona sun! The town waited under it, all laid out neatly for people from the snow country to buy. The hotel complexes with manicured lawns and blue-green pools attested to the area's clientele, as did the well-heeled marinas and impressive lineup of aircraft at the airport - which, incidentally, is linked to the mainland by London Bridge.

Attendant on a golf cart has the plane tied down before you've had a chance to think "ground" and everyone piles into its shade for a ride back to the terminal.



Service! "Havasu hospitality, folks" "Care to buy a lot?" Fuel was all we wanted, then on to the final leg to Quartzsite, where a good gravel strip and a kindly old codger greeted us. With soft grass under the trees for camping and wash facilities provided free, we had it made indeed. Morgan and Thoms were taken down in some fool card game devised and refereed by the opposition. Day three, pleasantly ended.

Monday, March 29. After a breakfast of ginger nuts and orange juice, we were up and away again, into the hot morning sun, east to Scottsburg. Some claim the Morgan-Holmes team cut across a jet-training restricted area, but that really wasn't true. Across Sun City we tracked with its orange groves and run-of-the-mill backyard pools, and into Scottsdale. A lick and a shine and a visit to the F.A.A. offices saw us all with U.S. glider ratings, despite the "is this all you have" comment concerning my New Zealand license. The last leg of the journey was the 30-minute flight around a sweltering Phoenix city to the Estrella Sailport, some 30 miles south. The soon-to-be vacated home of "66 Sierra" is plumb in the middle of roadrunner country, and a rising southwest wind confirmed this fact. Tied everything down, and retreated to the large hangar to work over the 2-33 and inspect the full range of Schweizer ships and a few slippery glass ships of private owners. Outside, a Canadian 1-26 scrambled at 500' over the field before catching a 12 to 1500' per min. thermal for a gold height gain and a 160-mile flight. Great spot, despite the flying dust and gravel. Things calmed toward evening, and Ken and I flew into the dirt strip on the outskirts of Maricopa for groceries and radio batteries. That night we ate and camped comfortably in the soaring centre's office, evened the card score, and even went swimming in the cool night desert air. Leastways I did!

Tuesday, March 30 dawned hot and sunny, and after a big breakfast we were packed and ready to go. Unfortunately, the resident engineer and holder of the hangar key had not returned from his Phoenix forays of the previous eve, so there we sat in the midmorning sun, cursing his dog Julie and waiting. Ken T. went goofing off in Q.D.Q., chasing roadrunners and looping the loop. Ken H. just went off, so there sat the glider crew, locked away from their beloved. With the arrival of the key, there was action, and with the radio rigged and maps and water and gear stowed, we were off in a cloud of dust and gravel behind K.Y.Q., staggering along the hills looking for height. A restricted area southwest of Phoenix caught our attention, as three F4 Phantoms streaked across our bows in a low, sweeping pass of a Lucas A.F. base. With two up the forward trim was largely ineffective on tow, and before long Randy and I were spelling off regularly in order to keep in behind the Champion, with constant forward stick pressure. Ken T's string and spring device wasn't too successful, especially in such bumpy air. Some steady thermalling over Parker had me getting the feel of the ship, and after a sandwich and fuel stop, we headed on north again, along the Colorado to Boulder City. A hunt for the cause of low oil and oil pressure in the Champ kept us busy

until the sun was in behind the hills, leaving it too late to make another leg north. "66 S" was chained to the ground and we went for chicken, followed by a most welcome cleanup at a nearby motel. Cause of the trimming problem was then discovered - a pair of very strong sox had been flying in the front seat. Phew!

Wednesday, March 31. Ken T. scouted out a 30 lb. flywheel which, snug under the front seat with one up, should help the forward trim. With Randy on first shift we headed out into a smooth, clear sky, across the mighty Hoover dam and north to Lincoln field at Pioche. Most of the trip was spent in looking for the towplane/glider combination in the empty sky. Radio contact didn't seem to help, as Ken and I cast about in the Citabria looking for them. Finally found them "over the train in the canyon," ten miles out of Lincoln, and whilst Randy put the 2-33 through some aerobatic paces, we went in to the largely deserted strip for fuel and food. At \$1.75 for fuel, we didn't get much more than was



really needed before heading out with Capt'n Morgan tied on behind the Champ once again. We literally clawed our way north, scratching for lift by skirting the flanks of a low ridge in search of assistance in the upward battle. "Six Six Sierra to K.Y.Q." "K.Y.Q." "Would like some more height if possible, Ken" ... Silence! Stuck with the ridge, peering into worked-out mining holes that I wished I couldn't peer into. The highest peak of the ridge finally gave us what we sought, putting us up into the clear a little. Air was very rough, and further ranges of low hills provided more minutes of sweating palms and rapidly changing contingency plans as we sought the main valley leading to Ely. It was a matter of scrape and circle and peer amongst the bushes with Q.D.Q. searching ahead for lift areas. Contingency plans usually centered on the odd dirt track or dry wash - and occasionally they didn't centre on anything!

Finally picked up a good ridge that lifted us clear of the canyon walls and away

from the desolate brush and desert sand that was so close for seemingly so long. Ely provided sport for me while the Champs refueled - good 1000' per min. thermals took me to 10,500' with ease, and a cross-country dash in the direction we were headed, aided by a good strong wind, was definitely on. However, the thought of packing that 2-33 out of a strip too short to tow out of at this height was deterrent enough. Downwind leg, and the wind fairly gusted me along. An early turn on Final and hasty crab into wind brought me across the end of that huge, lone strip with need for very little of it on which to land. "It's all yours, Randy" as I thankfully retreated to the Citabria to relax for the next leg of the journey. Gaining altitude was again a problem out of this high, windy place, and apart from getting lost from each other again, it was a relatively uneventful trip north to Twin Falls, Idaho, and the little grass strip at Buhl. Randy cruised the town looking for some lift, then cranked in for a good crosswind landing inside the bottom boundary. The elderly airport proprietor provided us with some amusement as we made some towrope repairs and readied to move on. The short strip and gusty crosswinds had us staggering over the fence at marginal height before pushing down to 50' or so for a good bo-peep at the small farms on the periphery of Buhl. What's called scratching the "undercart" on the "paddocks." The curl-over effect from a mountain ridge is one thing - from a one-storey cattle shelter is quite another! Our friendly airfield proprietor saw fit to declare our takeoff a "mess." Oh, well!

We finally climbed up into the clear and headed northwest into an approaching frontal system. A few spots of heavy rain wasn't much warning of what was to follow. Under the low, ragged ceiling all hell broke loose. We were pushed and shoved at all angles and distances from each other, and the metal construction of "66" really banged and rattled. Books and maps flew, the radio mike went flying by, and earphones were popped to the top of my "peaky". What a racket! Couldn't get into position to release, and with ceiling low, down heavy and airport still not in sight, it was stay on if at all possible. Flew out into relatively calm air, and with the Mountain Home strip finally in sight, released over the town into steady lift along a broad front. A loose waterbottle in the back seat dictated an early landing, so with oodles of height I screamed downwind in a regular gale and turned across with a good 750' to spare. And there I hung, over runway 22, at 50 m.p.h. going nowhere. Nose down, speed up, and progress, hopefully, to the other end of the runway where the tie-downs were. A.S.I. bounced between 60 and 80 and still progress was slow, with a brakes-closed, long, final glide to touchdown. Many hands helped to get the sailplane onto the ramp and securely tied down as the wind increased its battering. Chains and ropes and concrete slabs and more ropes adorned the ship, and still it wanted to lift up and be off in that wind. Ken H. and the glider crew headed for town for growlies whilst Ken T. stayed close by with more ropes and string and stuff. A delightful blonde in an X.K.E. Jag had retrieved his hat earlier on, so with us out of the way, I

suspect he was about to cast his hat again. Town was a good two miles, as we battled back through the blowing grit and garbage, clutching a bag of greasies for Ken. His night was spent curled in the Citabria with a wet sleeping bag, whilst we spread in relative comfort in a tent pitched inside an old open T hangar. Not a good end to the day.

Thursday, April 1. And nobody dared or thought of playing games - it was too damn cold. The tow crew managed a ride to a cosy restaurant in town whilst we, the towed, shivered in our tent and drank coffee with flies in it. Well ... a fly! Explanations swapped and all forgiven, the "towers" helped the "towed" make a big mess of eggs for breakfast before all headed out with a well-muffled Randy at the helm. Wind had eased, and we made good progress to Weiser, where the sun was warm and the sky full of goodies. My turn, as we towed off into a sky full of puffsies - oh, to have been able to stay there for a couple of days, as the lift was good and the terrain most flyable for triangle or cross-country. Tempting to attempt some free flight along course, but only tempting. Got steadily colder as we climbed to higher country across the N.E. corner of Oregon. Ceiling steadily lowered, and snow showers were experienced as we headed west into the hills from La Grande. A pass into the low country of Pendleton and S.E. Washington had to be crossed, and with hills disappearing into the cloud ahead, all did not look well.

The ceiling, and the forest and snow-covered uplands continued to close on each other, and a constant review of the gaps in the traffic on the nearby four-lane highway kept me amused as we dodged about the tendrils of cloud. "Never fear with Holmesy ahead," as we peeled off down a valley just short of the point where ground and sky met, and finally made it into the clear, cold air of the Pendleton valley. From there, it was just a shiver to Pasco and the Vista airfield, where I took advantage of some shopping centre lift and the long runway. Grunt, wheeze, heave! Lunch, and a mosey about the hangars before continuing north with a good tail wind to Okanagan, just short of the border. Almost home. With all a/c securely tied down, who should arrive but "Pal" a larger-than-life real estate man, who whisked us downtown in his white Mercedes to digs at the Cariboo Hotel. "Thanks, Pal." What a barn! Cavernous rooms, grossly oversprung bed, cold water and non-operational telephones cancelled Pal's grandeur somewhat, but with a good feed at Rileys, who needs all that stuff.

Friday, April 2. A goodly breakfast to the time of half crazy clock in this same hotel started off our last day. Trudged back to the strip through backyard and dry brush - "Where are you, Pal" to fuel up and fly out at 1000 hours. Calm air prevailed, and an hour later we were killing time over Kelowna whilst Ken T. dropped off Randy, and customs Vernon was notified. Then on for "66 Sierra's" first Okanagan soaring - some zero sink off the ridge south of Vernon. Customs was a quick formality, then we pulled the radio gear before securely picketing the 2-33 and heading for Enderby and the end of a most enjoyable trip.

Ground School for Toronto area Glider Pilots

There will be a twelve week ground school for beginners or licenced glider pilots starting January 6, 1977 at 7:30 P.M. Entry fee \$10. Location, Bathurst Heights Secondary School, 640 Lawrence Avenue West (at Bathurst Street). For registration contact Fred Mueller, 787-4291.

Don't be an MoT statistic

A50012

Schweitzer 126

CF-BFG

DATE: 19 May 75 1630 AST
OPERATION: Private - recreation DAMAGE: Substantial
PLACE: Havelock, N.B. 46/00N 65/20W
LOCALE: Soil strip 2800 by 300, 260 asl
WEATHER: Sky clear, vis 15, temp 20°C, wind NNW 10
PILOT: Private & Glider
TOTAL HOURS: 400 ALL 80 ON TYPE
LAST 90 DAYS: 8 ALL 1 ON TYPE
CASUALTIES: Crew: 1 uninj
OCCURRENCE: During a tow car launch, the glider was flown at a lower airspeed than normal. About 100 feet AGL the right wing stalled followed by a violent turn to the right then by a turn to the left. The tow cable was released and in the attempt to recover from the stall the glider struck the ground in a near level attitude.

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LETTERS TO THE EDITOR

Dear Sir:

On a recent visit to Kingston, Walter Piercy and I discussed Frank Hinteregger's letter (pg. 3, July/August FREE FLIGHT), and felt it should be answered as it raised some points which deserve to be considered by all of us, especially as the approach and landing phase of our flights account for almost one third of our accidents. Here then is our reply to Frank's letter.

A rule which was drummed into some of us when we were students is "when below 1000 ft. above ground, minimum speed 50 mph". You might like to consider this in your flying.

This rule is pretty basic and will work well whether you are flying a 2-33 or a 1-26. Even when you are not going to land immediately it is a good rule to use as we all should be conscious of the dangers of a low level inadvertent spin when "trying to scrape". Even a medium performance sailplane should be thermalled faster when low, and by the time a pilot is flying that sort of machine, let us hope he appreciates the need for an adequate approach

speed. The formula in our instruction manual should serve him well. This formula starts from the stall speed, V_s .

The advantage of using V_s as against the max. L/D speed is that anyone of us can measure V_s merely by stalling the plane. Of course we should all be familiar with the stalling speed of the planes we fly, so basing the landing/approach speed on V_s is favoured. This is the standard technique for power flying. One other point is that if the ASI is reading in error, the approach speed will be based on the "indicated" stall speed, which will be safe whether the error is high or low.

One disadvantage of $V_s + 50\% + \text{wind}$ when flying a high performance sailplane is that we might find ourselves landing very fast indeed - consider a value of V_s of 40 mph; in a 20 mph wind our approach would be $40 + 20 + 20 = 80$ mph which is too fast. The recommended formula gives $V_s + 10 + 1/3 \text{ wind} + \text{more in turbulence}$, which works out at 57 mph. This is considered to be adequately higher than V_s .

In turbulent conditions we might wish to add 5 or even 10 mph to the above, as suggested in our instruction manual - in fact airline pilots add $1/2$ the maximum gust speed to 1.3 V_s , and many pilots add 5 "for mother".

Another technique is to base the approach speed on max. L/D, but consider the pilot who does not know this too well. Basing the approach speed on "normal cruising speed" + 10 or 15 mph can be equally frustrating and can be hazardous if you cruise at 70 or 80 mph!

Perhaps the problem lies not so much in the formula but in the lack of fundamental training in the hazards involved (tendency to reduce speed when turning in the circuit - instructors should know why this occurs - over use of rudder due to illusions created by drift, wind shear and/or gradients, turbulence created by trees etc.). Good training in this area, including adequate coverage of incipient spins - it is academic knowing you are in a full spin at 200 feet - is perhaps part of the answer.

To recap; you might like to consider 50 mph (or knots, there is not much difference) as a minimum for your circuit speed, either in a 1-26 or a Blanik. Use the recommended formula " $V_s + 10 + 1/3 \text{ wind plus extra in turbulence}$ ", and when it comes to less than 50, fly at 50. A good round out and hold off will complete a well co-ordinated circuit and will result in a gentle and safe touchdown.

Ian Oldaker,

Member of Instructor's Committee.

Dear Mr. Nancarrow:

Even though I'm only twelve, I'm very interested in gliding. The past year I've been going gliding with my dad at the Red River Soaring Association. I've been up about ten times, which means I am used to winch tow, I like it very much. Is it very dangerous to sideslip? I normally go up in a 2-22 which is up at Gimli, Manitoba. I read the article in the July/August issue of FREE FLIGHT. It's true. We do use that system. (The article about WHITCHS. The system that J. W. Davies uses. He's my instructor.) All I actually wrote this letter is to see if you have any pamphlets about gliding.

Yours sincerely,

Jeremy Anthony,

son of previous Director of the Prairie Zone.

Dear Jeremy:

Sideslips are like most flying manoeuvres, only dangerous when done poorly and close to the ground. Have your Dad or instructor give you a demonstration at a good altitude. I'm sorry I don't have any pamphlets about gliding but I'll ask our secretary in Ottawa to send you any if she has them.

Ed.

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DIRECTORS and OFFICERS 1976

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HANGER FLYING

Two new records have been claimed and submitted for approval. The first was a flight in Cirrus C-FDMW made by Toni Williams of Vancouver claiming a speed of 54.5 km/h for a 100 km triangle. The previous record of 31.0 km/h was also held

by Mrs. Williams.

On August 2nd John Firth made a flight in a Kestrel 19 from Rideau Valley Gliding Club to Burketon Stn. (Oshawa) and return. His speed was 86 km/h, the distance was 556 km. The previous record

(territorial) was 520 km (citizens) 526 km.

SAC TROPHY FLIGHTS

This is to remind you to send your B.A.I.C., CANADAIIR, and "200" Trophy claims to:

A. Sawatzky,
Box 137,
Pinawa, Manitoba.

To date the only claim has been submitted by John Firth for a 556 km flight made on August 2nd.

CLUB NEWS

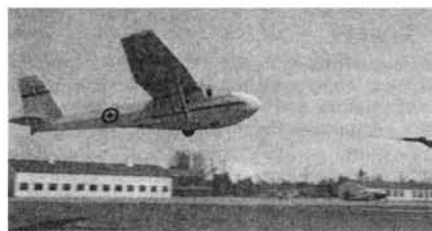
BASE BORDEN SOARING CLUB

The BBSC operates from the airfield at Base Borden approximately 60 miles north of Toronto and at present owns one Schweizer 2-33A trainer. Our current membership numbers approximately 20 which includes 3 Junior members (under 18 years). Although the main objective of our club is to promote the sport of soaring in our community, social events in the form of get-togethers with other clubs and family days are planned for the coming season. Although still a new club, (this is our second year in operation) our club can boast the following achievements:

Approx. 1700 launches since starting last August

7 Solo students (counting all of their time from the start of our operation)
Accident free first year of operation.
3 B badges & 1 C badge.

Most of our soaring is accomplished



using our homebuilt winch, however, we managed a few air tows both last year and this spring with the help of friends from the Huronia Club and hope to be able to arrange more air tows for the benefit of our new solo pilots.

Another notable achievement was the well deserved honour of SAC Instructor of the year awarded to our CFI, Tom Bell. Tom, as this award attests is an excellent instructor, he has worked very hard at getting our club into operation and his trade mark is safety. This combination of hard work, extreme interest in all phases of soaring and safety certainly is appreciated by all members of our club.

By the way, if anyone knows of a good single place ship going reasonably with performance similar or better than a 1-26, please contact; or Phone 424-5193
Capt., R. S. McDonnell, after 1700 hrs.
23 Cedar Cres., R. S. McDonnell
CFB Borden Club President

2-33 on winch launch at
Base Borden Soaring
Photo by Daws Campbell



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Air Cadet League (Que), 5726 Sherbrooke St. w., Box 340, Montreal, P.Q. H4A 3P6
 Appalachen Soaring Club, Box 271, Sherbrooke, P.Q. G1H 4G8
 Ariadne Soaring Inc., 735 Riviere aux Pins, Boucherville, P.Q. J4B 3A8
 Buckingham Gliding Club, c/o J. Bisson, 1601 - 680 St. Joseph Blvd., Hull, P.Q.
 Champlain Soaring Association, 111 Mgr. Tache, Boucherville, P.Q. J4B 2K2
 Lahar Gliding Club, c/o Capt. E.N. Bernston, 1 CAG HQ., CFPO 5000, K0K 3R0
 Montreal Soaring Council, Box 1082, Montreal, P.Q. H4L 4W6
 Missisquoi Soaring Association, Box 189, Mansonville, P.Q. J0E 1X0
 New Brunswick Soaring Association, 521 Blythwood Ave., Riverview, N.B. E1B 2H3
 Quebec Soaring Club, Box 9276, Ste. Foy, P.Q. G1V 4B1

Ontario Zone

Air Cadet League (Ont), Mr. H. Bruhlman, 1107 Avenue Rd., Toronto, Ont. M5N 2E4
 Air Sailing Club, Box 2, Etobicoke, Ont. M9C 4V2
 Base Borden Soaring Group, Box 247, Borden, Ont. L0M 7C0
 Bonnechere Soaring Inc., Box 1081, Deep River, Ont. K0J 1P0
 Caledon Gliding Club, R.R. No. 1, Erin, Ont. N0B 1T0
 Central Ontario Soaring Association, Box 762, Peterborough, Ont.
 Chatham Air Cadet Gliding Club, 561 Lacroix St., Chatham, Ont. N7M 2X1
 Erin Soaring Society, Box 523, Erin, Ont. N0B 1T0
 Gatineau Gliding Club, Box 883, Station B, Ottawa, Ont. K1P 5P9
 Huronia Soaring Association, c/o M. Badior, 435 Hugel Ave., Midland, Ont. L4R 1V4
 Kawartha Soaring Club, Inc., c/o G. Orday, 233 Lake St., Peterborough, Ont.
 Lakehead Gliding Club, Box 161, Station F, Thunder Bay, Ont.
 London Soaring Society, Box 773, Station B, London, Ont. N6A 4Y8
 Provincial Motorgliding & Soaring Association, R.R. No. 2, Blackstock, Ont. L0B 1B0
 Rideau Gliding Club, c/o H. Janzen, 172 College St., Kingston, Ont. K7L 4L8
 Rideau Valley Soaring School, Box 93, R.R. No. 1, Kars, Ont. K0A 2E0
 SOSA Gliding Club, Box 654, Station Q, Toronto, Ont. M4T 2N5
 Toronto Soaring Club, Box 856, Station F, Toronto, Ont. M4Y 2N7
 Windsor Gliding Club, 2050 St. Anne St., Windsor, Ont. N8N 1V7
 York Soaring Association, Box 660, Station Q, Toronto, Ont. M4T 2N5

Prairie Zone

Air Cadet League (Man), % Capt. G. Evans, 364 Duffield St., Winnipeg, Man. R3J 2K2
 Alsask Soaring Club, CFS Alsask, Alsask, Saskatchewan, S0L 0A0
 Red River Soaring Association, Box 1074, Winnipeg, Man. R3C 2X4
 Saskatoon Soaring Club, 2 Sullivan Street, Saskatoon, Saskatchewan, S7H 3G8
 Winnipeg Gliding Club, Box 1255, Winnipeg, Man. R3C 2Y4

Alberta Zone

Air Cadet League (Alta), % H.M. Fowler, 23 Grafton Dr. S.W., Calgary, Alta. T3E 4W1
 Cold Lake Soaring Club, Box 1714, Medley, Alta. T0A 2M0
 Cu-Nim Gliding Club, Box 2275, M.P.O., Calgary, Alta. T2P 2M6
 Edmonton Soaring Club, Box 472, Edmonton, Alta. T5J 2K1
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 Regina Gliding & Soaring Club, 7215 Bowman Avenue Regina, Saskatchewan

Pacific Zone

Alberni Valley Soaring Association, Box 201, Port Alberni, B.C. V9Y 7M7
 Comox Gliding Club, Box 238, Lazo, B.C. V0R 2K0
 Kamloops Soaring Association, % D. Lurkins, 627 Alberni St., Kamloops, B.C. V2B 1T2
 Okanagan Soaring Association, Box 1135, Kelowna, B.C. V1Y 7P8
 Vancouver Soaring Association, Box 3651, Vancouver, B.C. V6B 1Z1
 Wide Sky Flying Club, Box 6931, Fort St. John, B.C. V1J 4J3

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	b) Button — Clutch Back — "A" only		11.	S.A.C. Cap (Red, Green or Blue with white Crest)	3.50
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	c) Pin — Safety Catch ("A" & "B")	5.50		a) single copy	2.25
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	a) Application Forms for Certificates & Badge		13.	F.A.I. Cloth Badges — 3" diameter	
	Claims available from Club C.F.I.	n/c		a) "C"	0.75
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7.	Weather Briefing Form N-052 (8½" x 11 sheet)	n/c			
8.	Application for Official Observer	n/c			

NOTES:

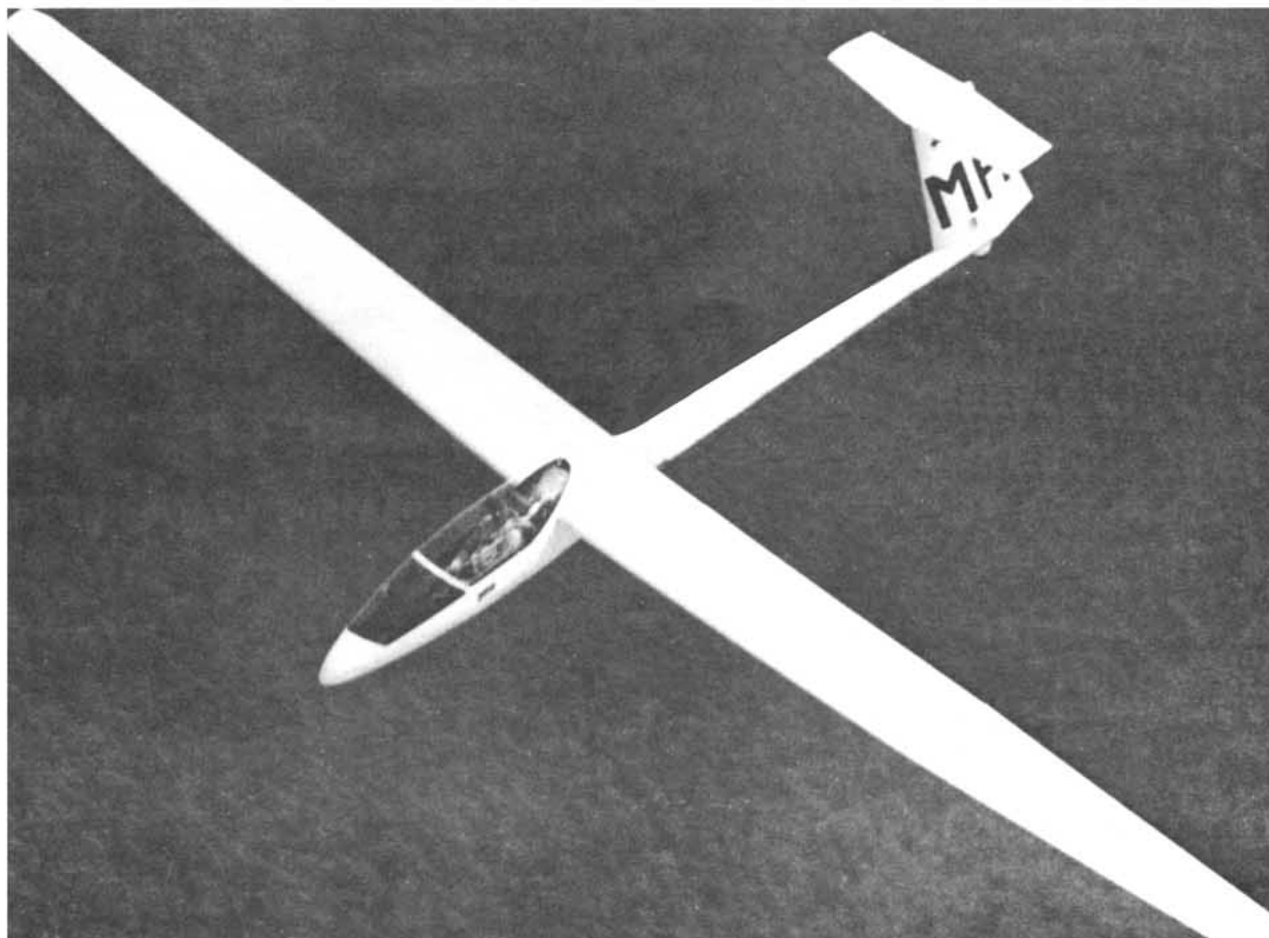
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