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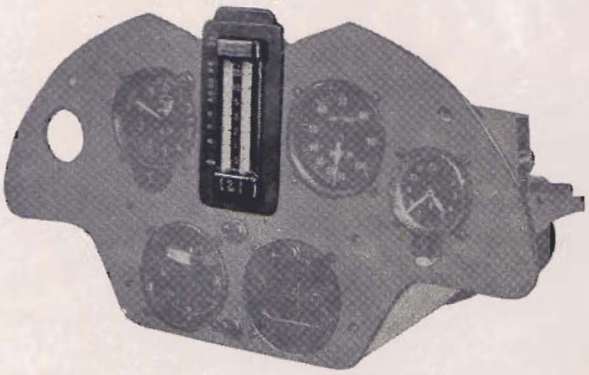
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THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

JULY 1952 ★ Vol XX No 7

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COVER PHOTO:

Sigbert Maurer and 'Moswey III' starts in the Engadine. By Heimgartner.

Editorial

BY the time these notes are in our readers' hands, the International Gliding Competitions at Madrid should be in full swing. We fully expect them to be the greatest contests in gliding ever staged, and can only hope that the confident statements about Spanish thermals at this time of year, will be confirmed by events.

The contests are notable for many things : the numbers of countries and participants, the types of machines, and the numbers of German attendants on behalf of countries other than their own.

The American Team comprises four solo pilots : Richard Johnson in his 'RJ-5,' claimed to be the 'most efficient aircraft in the world' ; Stanley Smith, who was the U.S. Champion 19 years ago, flying a 'Schweizer 1-23' ; Paul Schweizer the well-known designer from Elmira, flying one of his own 'Firm Skin 1-23' sailplanes ; Paul MacCready, 2nd in Sweden in 1950, flying a 'Longwing 1-23' ; and the two-seater pilots J. Shelley Charles and William C. Beuby who will fly a Spanish-built 'Kranich.' The former was the third pilot in the world to win a Diamond 'C.' He is a Senior Airlines Captain with Eastern Airlines. With Team Captain, spare pilot, Official Observers, members of O.S.T.I.V. (Drs. W. B. Klemperer, August Raspet and Joachim Keuttner), crew members and members of the F.A.I. and Public Relations Director and Business Manager, the U.S. Mission numbers 26, about the size of a U.N. Delegation, which it is anyway.

The British Party is noteworthy in that it includes two renowned Meteorologists—Dr. R. I. Scorer and F. C. Ludlam, whose forecasts we hope will prove the most accurate, although we have as yet, had no experience of the Spanish Met. system. But our pilots are not without their own experience of 'Met.' which does not always coincide with the experts' forecasts, as one American Met. expert, Dr. Starr Malkus, found out when she lectured to the members of the B.G.A. during last winter. Nor can it be forecast that the experience of British skies, will be repeated over Spain. Southern France, as many British pilots have discovered, can be a gross enlargement of British aerial characteristics, and so may Spain well be. Another interesting feature will be the presence of several designers—Dr. Horten, late of Germany and now of Argentine, Paul Schweizer, Wolf Hirth, M. Jarlaud of France, and our own Fred Slingsby, on whose 'Sky' depend so much of British hopes. There may be others from Germany, Holland, and even Finland. Our friends the Jugo Slavs are not officially due to appear but they may well do so to attend the meeting of O.S.T.I.V.

In one respect the British may have an advantage in that aircraft and retrieving cars are fitted with radio. But the Argentines are also fitted with the Pye Radio, and the Americans and Australians may well bring their own.

We are a bit worried as to whether our trailers will stand the Spanish roads. We had trailer trouble in Sweden which could have put our pilots out of the contest most effectually. We hope not to be hampered that way this time.

Our next issue will contain the results, and the beginning of a full report of the meeting. If our plans materialise the account will be too long for one issue of *Sailplane*. Indeed we expect to gather material for several issues as both our Editor and Assistant Editor will be at the meeting. As usual, our problem will be to continue to interest the beginner, who anyway, comprise by far the larger number of glider pilots the world over today.

OUT AND RETURN : BENALLA TO SEYMOUR

61 miles, 122 mile Round Trip, 4 hours 36 minutes

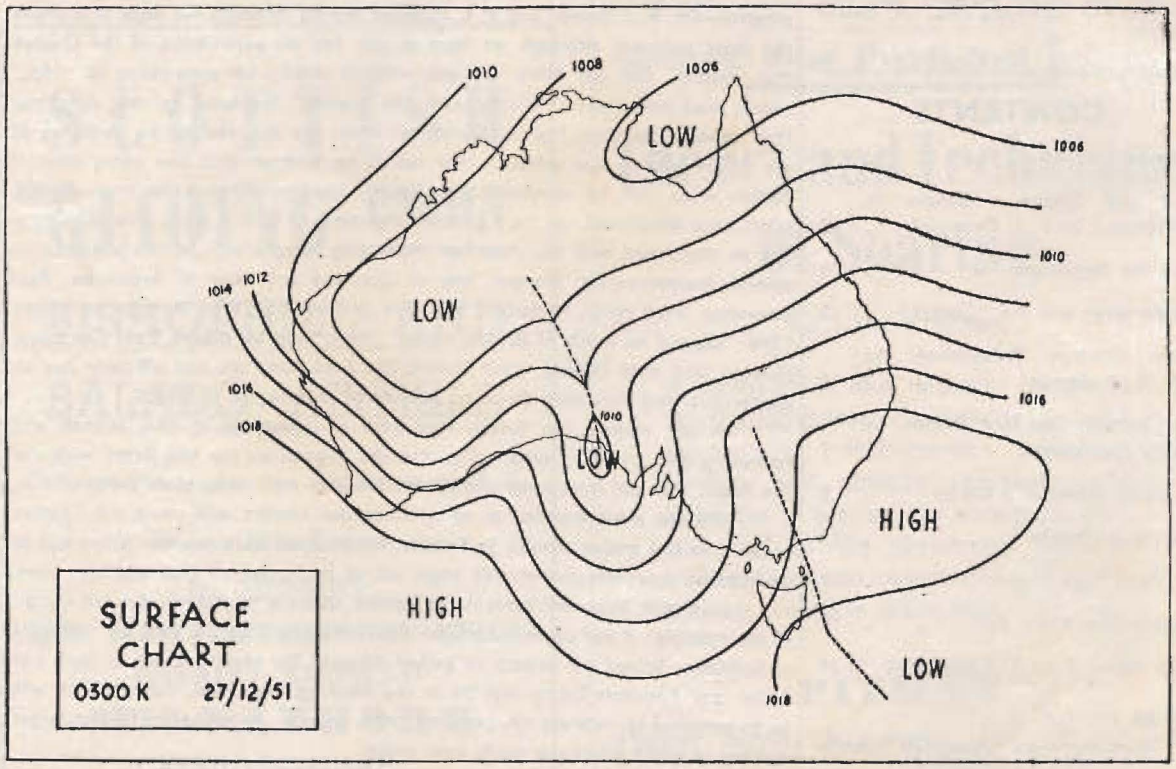
By E. J. DESMOND

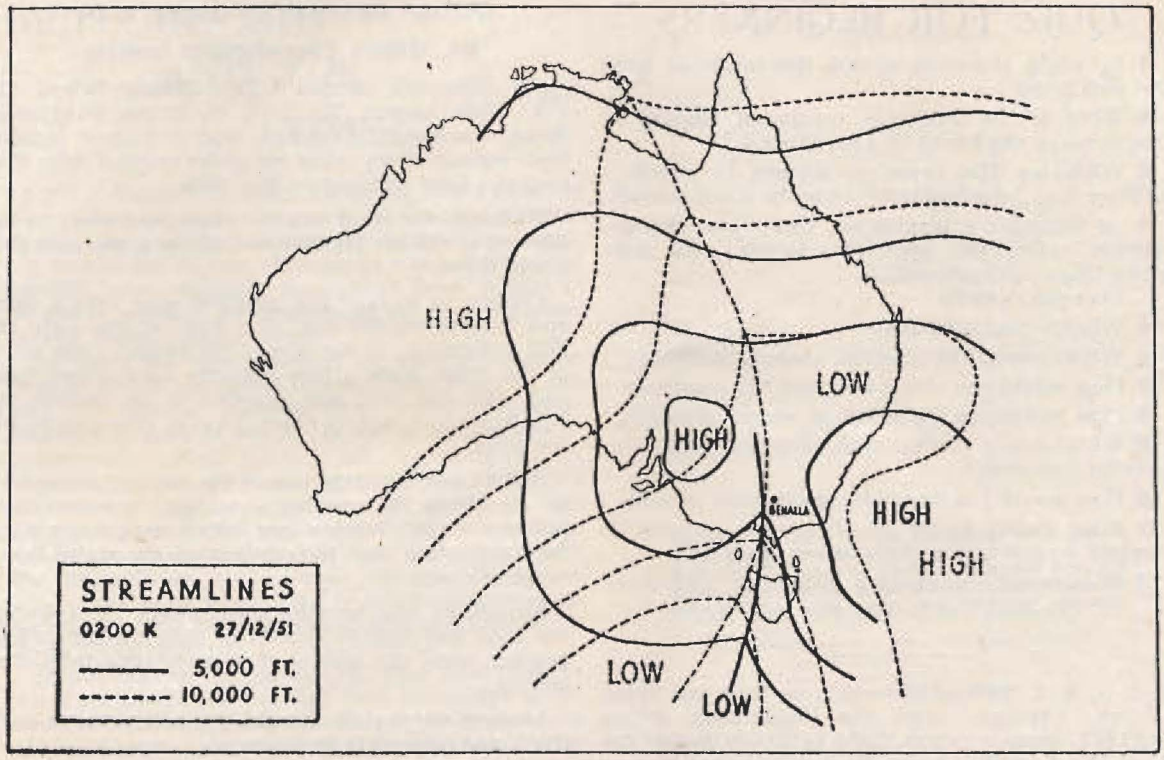
MY turn to fly came unexpectedly, when Jack Edmonds was let down while we sat over the lunch table convinced he was gone for the day and wondering where he would be when he 'phoned up. Just as the discussion was becoming interesting, Jack breezed in with a few terse words about non-appearance of ' violent convection ' that had been forecast, and being next in the round, I was faced with a 2.30 p.m. start. What would be a worthwhile competition flight ?

Reproduced on this and opposite page are the synoptic charts plotted and drawn on the morning of the 27th. The Surface Chart with a weak low pressure centre in South Australia and an anticyclone in the Tasman Sea, indicated light north-east-north winds. The upper charts drawn at 5,000 and 10,000 feet showed a deep trough right over the top of Benalla. The movement of the trough was uncertain, but I expected that during the day it would move eastwards.

I had forecast very strong convection, with light northerly winds below 5,000 feet, and light south-westerlies above 8,000 feet, the whole layer from the ground to 10,000 feet tending ' light and variable ' during the day. From the time of take-off, I expected to have four hours of thermals, convection being strong until 4 p.m., after which time I expected the thermal activity to gradually decrease, tapering off after 5 p.m., when the best lift available would be in the high layers near cloud base. Some fair weather Cu had formed before take-off, with the base at approximately 10,000 feet. I decided to try an out and return flight to Seymour, planning to make the fastest possible time on the outward journey in the northerly in the lower layers, expecting to reach Seymour in about two hours. Then by climbing as high as possible in the last of the strong thermals, I hoped to make the return flight in the light south-westerly, by hopping from cloud to cloud.

Morrie McMullen towed me off at 2.24 p.m., and after doing one circuit of the field in violent ups and downs, I released into a terrific thermal, somewhere between 1,000 and 1,500 feet. Settling into a steep turn to the right with the green ball at the top of the tube, I peered over the side to find myself looking straight down the eye of a very well developed Willy-Willy, which was throwing up a solid column





of dust to about 500 feet, with papers and rubbish all mixed up in it together. I badly wanted to chew some fingernails, but was too busy staying right side up. In eight minutes I was at 7,000 feet over the 'drome and still going up at 20 ft./sec. The drift in the thermal had been negligible, and with light and variable winds it looked as though I would get little assistance on the outward trip. Not wishing to delay any further, I straightened up on course for Seymour at 70 m.p.h.

I decided to run down to 3,000 feet before looking for a thermal, and then continue between 3,000 and 6,000 feet. The air was bubbling like champagne and I found periods of ' no-sink ' and even some climbs of 2-3 ft./sec. at this airspeed. Some ten miles from Benalla I was down to 3,000 feet and sought my next thermal. It duly turned up and took me to 5,500 feet at climbs between 10 and 15 ft./sec. Once again I headed for Seymour, passing Violet Town at 3.06 p.m. Just beyond Violet Town the next thermal took me to 6,000 feet and I raced on to the northern outskirts of Euroa, where at 3.22 p.m., I picked up another which began to slacken off at 5,000 feet. As soon as the climb dropped below 10 ft./sec. I left the thermal and passed Euroa on course at 3.32 p.m.

Just south of Euroa I caught a beauty which I rode to 8,000 feet, running on from there to a position some three miles south-east of Mangalore aerodrome over the foothills leading to the Strethbogie Ranges. It was quite evident that the Cu forming at 10,000 feet in long lanes were perfectly stationary, the winds at that height being dead calm. I flew along a lane of sunlight between the lanes of shadows and aimed at a sunlit pocket in the hills where I hoped to find the next thermal. However, when I got there the cupboard was bare, so I turned towards Mangalore, still over the sunlit ground, looking for lift. At 2,000 feet I connected with a weak one showing only ' no-sink ' and struggled around in it for some time until it picked up to 10 ft./sec. and I clung to this rate of climb up to 7,500 feet. Throughout this period I was circling over the same paddock.

It was now 4.15 p.m. and the thermal activity was beginning to slacken off. I worked my way towards Seymour again using whatever lift came my way in the outskirts of this thermal and then ran flat out across the next sink area. I caught another thermal at 3,500 feet which took me back to 7,000 feet and over Seymour at this height in weak lift at 4.40 p.m. The outward trip of 61 miles had taken 2 hours 10 minutes from release.

I had taken my camera along with me—having first loaded a new film into it under the watchful eye of officialdom—and now lost 2,000 feet trying to photograph the town. The film jammed after I had taken one shot of the sky (unintentionally) and two of the ground. So, muttering a string of oaths I put the ' Grunau ' over and headed for home. These photos duly came out quite well enough to prove that I had reached my goal, but not before I had worn thin the patience of several club members worrying over them.

Leaving Seymour I hung on to what height I had until I struck the sink area north of the town, then ran across it over large shadows on the ground, heading for a little sunlit valley in the hills south of Mangalore. This valley just had to have a thermal

(*continued on page* 4)

QUIZ FOR BEGINNERS

1 In which direction should the heads of bolts and pins face ?

2 What is the allowable maximum amount of thread out of the barrel on a turnbuckle ?

3 What are the types of stresses to which a member may be subjected ? Describe these stresses.

4 (a) Describe a turnbuckle, clevis pin, shackle, thimble, safety pin, split pin, ferrule ; (b) state where these parts are used.
Give descriptions.

5 What is the chord line ?

6 What is meant by dihedral, angle in incidence ?

7 How would you check wing and tail alignment ?

8 How would you check braced wings for rigging ?

9 Where would you examine glider parts, particularly for corrosion ?

10 How would you describe a good splice in cable ?

11 Why should hinges on all control surfaces be checked for safety, and tightness in spars ?

12 How would you check a release for operation ?

(Answers will be found on page 19).

S/L A. A. J. SANDERS, whom we once saw flying an ' Olympia ' with the Registration letters G-ALMT, made a cu-nim flight to 14,000 feet at the Long Mynd on May 18th. He reported that he iced up in cloud and had a very rough passage. This was a record for the club, the previous record being held by Bob Neill who reached 12,000 feet in the Mynd standing wave last year.

S/L Sanders joined the Mynd at the age of 15, fifteen years ago. He has played a prominent part in the R.A.F.G.S.A.

GLIDER CRASHES ON FARM ROOF

Mr. White's Uncomfortable Landing

AN instructor at the A.T.C. Gliding School at Dyce Airport, Mr. Fred W. White, Bankhead Road, Bankhead, Aberdeen, had a narrow escape from serious injury when his glider crashed onto the roof of a farm building on May 25th.

Although the wind was too gusty for cadets to be allowed in the air Mr. White took up a machine for a trial flight.

Coming in to land the machine went into a spin and crashed on the roof of a byre at the farm of Mill of Newton, on the edge of the airport. The nose of the glider made a hole near the apex of the roof and, with the pilot still strapped in the cockpit, it balanced there, upside down, rocking precariously in the wind.

The farmer, clambered up on the roof and managed, by steadying the swaying wreckage, to relieve the pressure on Mr. White's legs, which were trapped in such a position that they prevented the glider from toppling down.

Mr. White was bent backwards over the apex of the roof and had to remain in this uncomfortable position until the arrival of a crash crew from the airport.

He was extricated, treated for cuts, bruises and shock and allowed to go home.

DOUGLAS JONES, of the Bristol Club has recently been to France in an attempt to get his Gold ' C ' height and distance. He got his Silver ' C ' at the National Competitions at Camphill last year.

BENALLA TO SEYMOUR—*contd. from page* 3

in it—or else! Soon I was in the sun and sniffing for lift. Down to 2,000 feet and there it was, but very weak and more downs than ups. I chose the most prosperous looking farmhouse as a spot to land, then got my teeth into the thermal and coaxed 3,200 feet out of it. It petered out, so I headed for home edging towards the Sydney road. I was down to 2,500, then up to 3,100 in another weak one. On again, and a third weak one ; ' no-sink,' a few kicks, then, one, two, three, five, ten ft./sec., and up we went at 10 ft./sec. to 9,000 feet. This was more like the flight plan.

I could now see a broken line of Cu stretching from Avenel to Violet Town, the nearest one being within striking distance. I worked my way towards the first cloud using any lift that appeared. Under the cloud I found 3-5 ft./sec. lift in quite smooth conditions, a pleasant contrast to the type of up-currents I had been using earlier. I was able to stay above 8,000 feet until I left the second cloud ; then running to the third one, which was showing more marked development than the others, I dropped down to 7,400 feet. However, under this cloud I picked up steady lift at 5 ft./sec., and worked my way up to cloud base at 11,100 feet. At this position, at 6.06 p.m. I was five miles north-west of Euroa.

Two more clouds brought me to a position some five miles north of Violet Town at 8,500 feet, and from this position, having run to the end of my clouds, I began a long straight glide to Benalla at 35 m.p.h., showing 3-5 ft./sec. sink, with many patches of ' no-sink.' I arrived at Benalla with 4,500 feet in hand and circled lazily around the town trying to get down. I completed the return trip at 6.45 p.m., but when I made a move to dive off height over the town the leather strap holding the meteorograph on its strut mounting began to vibrate, shaking the pens of the instrument and reducing me to 35 m.p.h. again. So I eventually settled towards the 'drome at 1-2 ft./sec. sink and spent a quarter of an hour floating about over Benalla in beautifully smooth air.

I landed the ' Grunau ' at 7.00 p.m., after a most exhilarating flight, but remained up in the clouds myself for at least a couple more days. Ask any club member.

METEOROLOGY AND THE 'COMET'

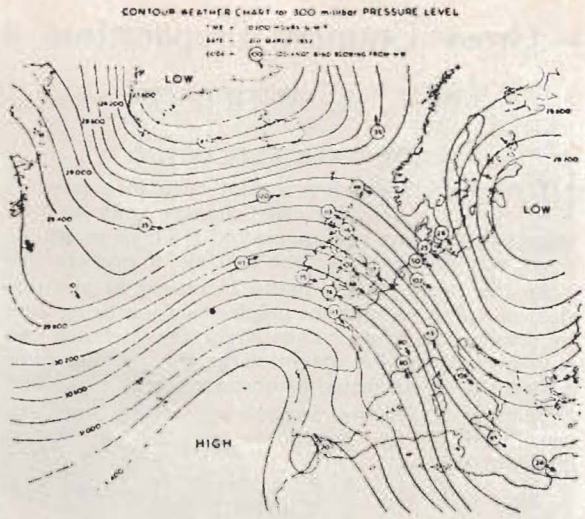
THE 'Comet' is also extending the work of meteorologists engaged in forecasting weather on the routes of the commercial aircraft of the world. Up to now the highest altitudes at which commercial aircraft have regularly flown have been 20,000 to 25,000 ft. reached, for example, in the Strato-cruisers on the North Atlantic route.

So far it has been sufficient for meteorologists to prepare upper air charts to cover only the 700, 500 and 300 millibar pressure levels, which represent altitudes around 10,000 ft., 18,000 ft. and 30,000 ft. respectively. Now aircraft are beginning to fly regularly on the air routes of the world at heights consistently between 30,000 ft. and 40,000 ft., and meteorologists at civil airports along the routes from London to Africa and the Far East have had to add the 200 millibar level contour chart to the others which they draw up in order to extend the coverage for temperature, wind speed and direction forecasting up to about 39,000 ft.

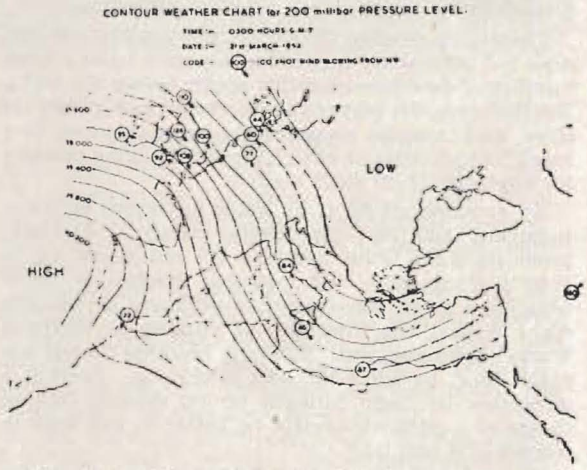
Meteorologists realize that in this field there is much yet to learn and in fact their knowledge of the upper air is already being increased by the experiences of the 'Comet's' crews. Post-flight discussions with them by the crews are therefore very much encouraged. It has, for instance, long been accepted that over Europe cloud does not extend above about 30,000 ft. However, the B.O.A.C. 'Comet' has encountered unbroken cirrostratus at 40,000 ft. over the toe of Italy, while one pilot last year reported a cumulonimbus cloud extending up to 44,000 ft. over England. Over the tropics where the tropopause occurs at a higher altitude than in temperate zones cumulonimbus clouds frequently reach 45,000 ft. while stratiform cloud may even be found above this height.

For high altitude forecasting contour charts are drawn for several chosen pressure levels. These contour charts differ from the surface weather chart for ground and low altitude weather forecasting in that a pressure level is chosen and points at which this pressure occurs at equal altitude are joined by lines to give equi-pressure height contours as on an ordinary topographical map, instead of joining points of equal pressure to form isobars as in the case of the surface chart. The effect is the same, however, and distance apart and direction of the contour lines give wind speeds and direction at any point as with the surface chart.

Great accuracy is required in weather forecasting for the 'Comet,' since it is true to say that temperatures and winds, not to mention terminal weather forecasts, have a greater effect on the economics and safety of 'Comet' operation than any other factor. Temperature forecasts have been reported to have been sufficiently good even for the 'Comet's' requirements but accurate wind forecasting at 38,000 ft. has proved more difficult. While the high speed



The upper air chart for the 300 millibar level shows a typical airflow pattern over Europe at a height of about 30,000 feet. The chart for the 200 millibar level shows that by about 39,000 ft. the general airflow pattern is much the same but that wind speeds have decreased somewhat.



of the 'Comet' makes it true to say that winds of below 30 m.p.h. have little effect upon the track made good, the wind generally encountered at the altitudes flown by this aircraft are in keeping with its own speed and may be in fact of the order of 80-120 m.p.h. while winds of 150 m.p.h. have been encountered decrease above the tropopause, i.e. above about 35,000 ft. over Europe.

This description of the way in which the B.O.A.C. 'Comets' will be flown can give only a rough idea of the work which has gone into evolving the routines for the fast economic operation of the world's first jet-engine airliner. Nothing has been said of the engineering side of the business. It is in fact too early to make even a preliminary comment on this aspect since with any new aircraft an assessment of its maintenance requirement can only be made after a period of intensive operation. However, the keenness and enthusiasm of the flying crews, the

(*Continued on page 6*)

Cross Country Preparation

By L. A. ANDERSON

ESSENTIALS NEGLECTED

HOW many times has a pilot been in a position to do a lengthy cross-country only to find some essential has been neglected? This can be put down not to bad luck, but to lack of preparation.

As the miles are gradually increased in any one class of sailplane, without much attention being paid to details, the time comes when the distance can only be bettered by attention to those small items hitherto being neglected as unessential.

Factors in relative importance which must be considered if the maximum results are to be obtained are :—

1 Pilot.
2 Machine.
3 Preparation.
4 Conditions.

Before embarking on a cross-country, there are certain fundamentals which must be obeyed by any pilot, in order that he will not be subjecting either himself or his machine to any great difficulties.

Firstly, by placing ' Pilot ' at the head of the list, does not necessarily mean that he must have a large number of flying hours to his credit before his flight. But he must be physically fit, have had plenty of sleep, and must be prepared for being cramped in a small cockpit without any chance of changing position for anything up to eight hours.

An experienced pilot can make numerous errors of judgment and can completely nullify a carefully prepared flight if his faculties are not keyed up to their highest pitch. The general opinion of pilots who have flown for a number of hours in the one flight is that the interminable circling in thermals brings on fatigue, until finally it becomes almost too much effort to ride a lift area to the top. There is a secondary tiredness brought on by general lack of fitness of a pilot who would be better in bed than in control of a sailplane.

The importance of this ' Pilot ' factor cannot be stressed too strongly.

AIRCRAFT NOT IMPORTANT

The type of aircraft used is not the most important factor in cross-country flying. The higher performance machine serves only for higher speed flying, with correspondingly greater distances covered. A lower class of sailplane, flown to the extent of its capabilities, makes a very worthy achievement.

In the light of present day knowledge, machines of several years ago can have their performance vastly increased by attention to detail. Items such as rough surfaces, protruding fittings, broken airflows, etc., can all be minimised by taking steps to put into practice many of the excellent suggestions written on cleaning up sailplanes.

The outside of the aircraft now being in the best possible condition for the type, attention can be shown to the inside. The seat should be padded, if the 'chute is of the back type. A canopy, with a sliding or removable panel suitable for throwing out objects is a necessity, and this should be placed in the position of slowest airflow. The cockpit ventilation is best brought from the nose of the machine.

Any flight, to be a complete success and to give the pilot the feeling of accomplishing a well organised expedition, requires much careful preparation. The particular site for launching has its own peculiarities, and these must be known and understood—i.e., drains, rises, fences, etc. Conditions necessary for a cross-country can usually be ascertained several hours before taking off.

The maps of the area should be carefully studied, as the time is not always available up top to waste figuring out problems of map reading. A line drawn through the map saves any confusion, and for ease in handling, a folder of celluloid, containing charts cut to size, so that as soon as one map comes to a boundary, the rest carries on.

A kit for the sailplane should consist of :—

1 Three tying-down stakes, strong thin rope and a hammer.
2 Small first-aid kit.
3 Barograph.
4 Plastic bag capable of holding liquids for several hours.
5 Some form of sweets.
6 Thermos with hot or cold liquid.
7 Maps of area.

Ground temperatures are usually misleading for a pilot, as it tends to make him go aloft not clad for cold temperatures—i.e., a temperature of 70° on ground with a lapse rate of 5°, at 6,000 feet would be 40°. In a shirt and shorts, this is cold, so warm clothing should always be worn.

Having reached this stage, care should be taken to make arrangements for a central point to send back information of landing site, suitability for aero-towing, availability of accommodation for tow pilot (should he arrive late), and any other relevant details. The conditions of the day go hand in glove with preparation, and it is sometimes advisable to wait for several days whilst conditions are building up.

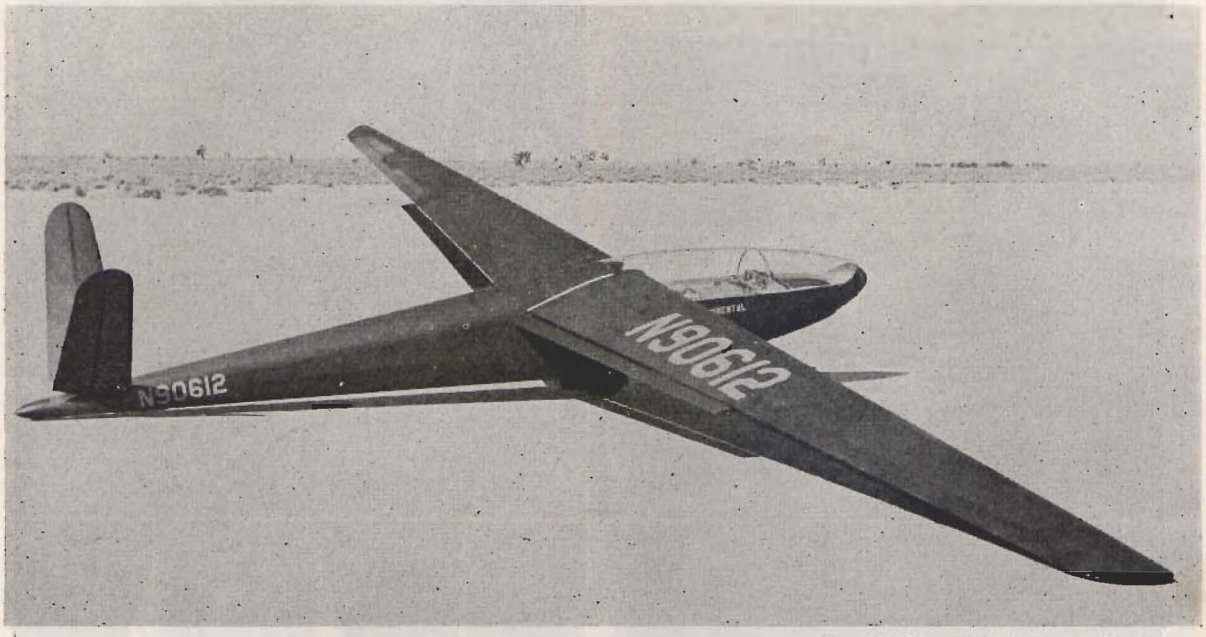
Finally, work out your system beforehand, so that on the day everything is clear and your checking is methodical. Then, when at last your launching site disappears over the horizon, you will have the satisfaction of knowing that both you and your machine are in the best possible condition to accomplish the task that lies ahead.

METEOROLOGY AND THE 'COMET'—*contd. from page 5*

operations staff and the maintenance personnel of the B.O.A.C. ' Comet ' Fleet and the closeness with which de Havilland have worked with them in solving the problems posed by this novel aircraft augur well for its immediate success. The arrival of the de Havilland ' Comet ' airliner on the commercial scene is a great landmark in the history of civil aviation and the feeling of sharing in the making of history has inspired the efforts of all who have been concerned with this remarkable aircraft.

NEW 'PRUE 215'

Photo : Warren Watson



The new 'Prue 215,' built by Edward Minghelli. This was a two-year project by Ed. and on May 25th at El Mirage, the machine was tested. A flight of over two hours and 12,000 feet was made on the second test flight

The Swedish Standard Trailer

By OLLE HAAKANSSON

RISE OF SWEDISH GLIDING

SWEDISH gliding increased greatly at the beginning of the last war. At the same time the whole gliding movement in Sweden was reorganized. Previously it had been a struggle under difficult conditions without sufficient money.

In order to make quick progress, the Aero Club had all essential equipment standardized. The 'SG-38' was supplied as a kit with most parts made up so that the aircraft only had to be glued together. The 'Grunau Baby,' the 'Meise,' the 'Weihe,' and the 'Kranich' went into serial production as standard types for the Air Force and private clubs. Standardized hangars, winches, and trailers helped to produce good results in flying in a very short time.

IN USE FOR TEN YEARS

The standard trailer has been in use for ten years and has proved most satisfactory, so that its construction may be of general interest.

On designing the trailer the condition of the Swedish country roads had to be taken into account. In winter these roads are inevitably damaged by frost which leaves them very bumpy until they can be repaired in early summer. Only a few roads have a hard crust.

Apart from this, the design was based on the following considerations :—

(a) The trailer should be suitable for all types of

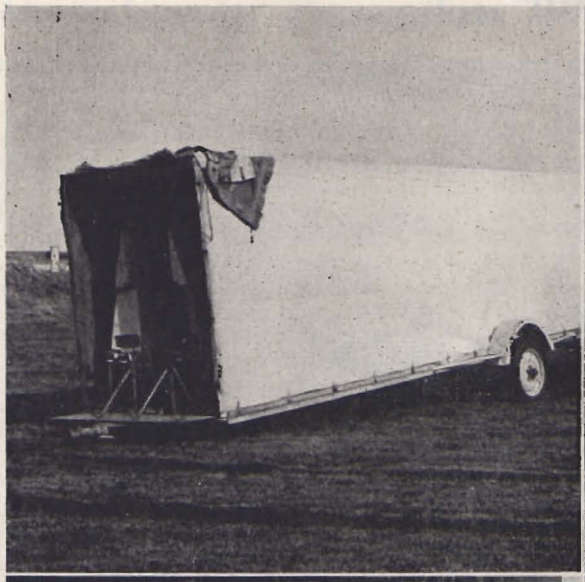
PROGRESS OF THE 'PRUE'

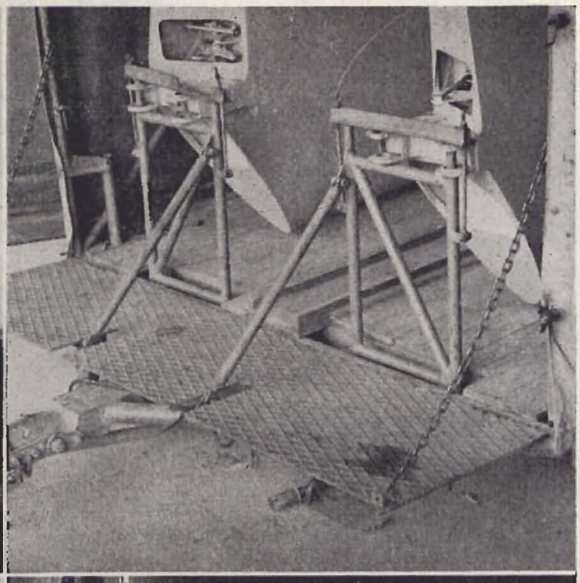
AT least seven 'Prue' sailplanes are under construction throughout the United States, and even more are contemplated according to Irv Prue. Several of these will spiral on thermals before the year is out.

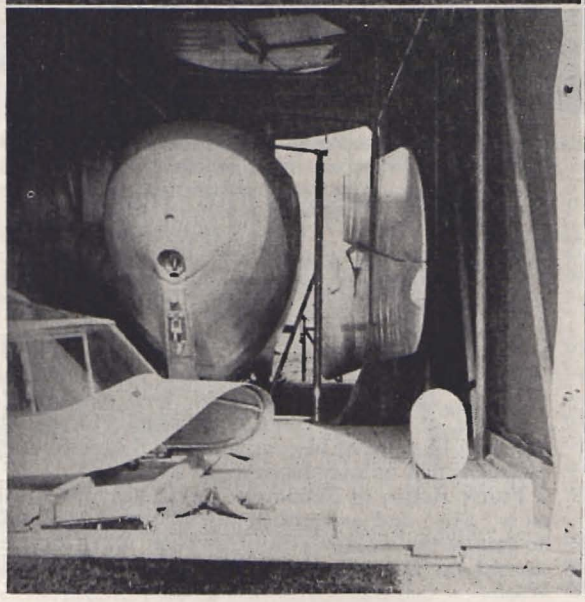
Perhaps the nearest one to completion is Ed Minghellis's of Baldwin Park, Calif., who is expected to have flown his 'Prue-215' last month. Joe Anthony, of Willoby, Ohio, has started a 'Prue-215,' but may be delayed in completing it if he rejoins the service which he may have to do soon.

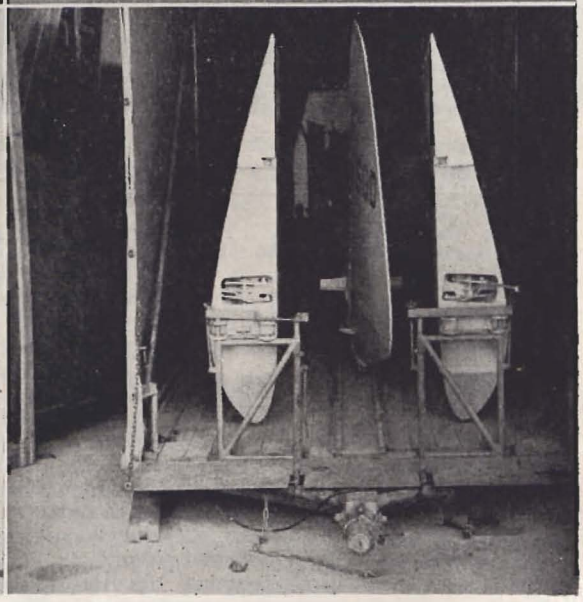
Frank Kerns, of Bellflower, Calif., has also started on a '215' and expects to pound away at it until he gets in the air this year! Another '215' has been started by Tim Kingston and associates of Seattle, Wash.

Irv Prue himself, of course, is busy on a new one—he always is—'unfortunately' every time any publication gives his 'Prue' sailplane a write-up—or even a mention, he gets flooded by mail from all over the world and usually gets pestered out of much precious time by flocks of callers to his home shop, most of whom mean well and no harm but definitely don't contribute to his efforts and do not, for the most, constitute any real buyers of his beautiful sailplanes.









sailplanes. After exchanging a few simple fittings it should take any type from a ' Grunau Baby ' to a ' Kranich.'

(b) The construction should be simple enough to enable clubs to build the trailer without difficulty.

(c) The road holding should be good even at high speeds.

(d) There should be enough space to prevent damage on loading.

(e) The trailer should provide as much protection as possible for the aircraft in case of a road accident.

(f) Small weight.

STREAMLINE NOT DESIRABLE

These requirements determined the shape of the trailer. A streamlined body was not desirable as this was considered inconvenient. At the first glance the Standard Trailer looks rather big and heavy. However, the road holding is surprisingly good. An experienced driver will hardly notice that he is towing a 10-metre trailer. Only with light towing vehicles care is necessary, especially when using the brakes, since the trailer has no automatic brake system.

The body consists of a welded framework which covers the derigged sailplane completely. The axle is fixed to the frame by means of leaf springs. The towing attachment is of the ball and socket type, the trailer also being secured by two pieces of chain.

(*continued on page* 10)

56 hours Alone in a Glider

From Our Special Correspondent in France

'MAY I introduce Charles Atger, world champion?' Such was the way I was introduced this morning, when I crossed the threshold of the Office belonging to the Director of Light and Sporting Aviation, in the enormous pink buildings occupied by the Air Ministry in Paris, where it is impossible to penetrate without having one's hands examined.

When I stretched out my hand, I did so with the immediate thought that if this new world record holder wanted to shake it forcefully, he could easily have broken all my bones with one grip. For Charles Atger has an elemental strength, but a gentle and flexible hand—a real pilot's hand.

Built from chalk and sand, as broad as a Norman cupboard, 6 ft. 2 in. tall and weighing 13½ stones, this man is immediately noticeable for his calm—which is not phlegmatic—his deliberate slowness and a certain modesty, due to restraint, which reveals continual thoughtfulness.

To what does he owe these strong qualities? From the sea perhaps, via his father, who is a Naval Officer; or from the mountains, because he was born 18th June, 1921, in the Lower Alps at Greoux-les-Bains; perhaps from the earth, because professionally he is a farmer. Whatever it is, his deliberation is founded on energy and is strengthened by an invincible tenacity. In order to attend the course, which was to lead him to the winning of his badges, he had to travel 30 miles to arrive at the St. Auban airstrip, ten miles by glider, and the rest in a train, there and back. In April, 1938, he obtained his badge as an 'A' glider at St. Auban, and in 1939, the badge of second-class pilot. In August, 1941, he became a 'B' glider at La Banne-d'Ordanche, and in May, 1948, he got his 'C' gliding badge at Alpilles. Today, Atger can tot up 670 hours of gliding, of which 400 were above Alpilles. In other words, he knew the district of his exploit.

He wanted this world record with all his heart, with the clear determination which makes his face so strong and contained, although all his colleagues praise him for his friendliness and sporting sense. His achievement is even more impressive because this magnificent athlete has a physical drawback, for his stomach cannot endure a long airborne trip.

Having already spent 19 hours airborne in 1950, he prepared his attempt at the beginning of this year with the strong support of a team which included Louis Brun, Chief Instructor at the centre, who promised him continual wireless communication; Gaudry, Regional Chief at St. Auban, from which the Alpilles district is administered; Marius Chauvet, Chief Mechanic and Taupin, Radio Engineer, who helped with the flawless wireless liaison during the flight.

Towards the 25th March, Atger made his first attempt, stayed 27 hours in the air and had to give up. 'Although,' he confided to me, 'I never stop stuffing myself with enormous beef-steaks. It was on the 1st of April that Mr. Brun gave me the alarm, and it wasn't a joke. The storm was so strong that



the first 24 hours I was constantly being jerked out of my seat and banging my head against the cockpit, I couldn't swallow the slightest mouthful, and I was very worried because the weather reports were pessimistic about the duration of the mistral. Only after 24 hours did flying become easier, but by contrast so undulating that I became seriously air-sick. Apart from a little blow the first day, which brought me up to 2,000 metres, I never left an average of 400-800 metres of altitude. The second day it was raining everywhere, even on the borders of the Durance; every odd hour I was sick and the third day my illnesses came on every half-hour to such a point I couldn't even swallow my saliva.'

There, better than any story, is the log book Charles Atger related. It has an unsurpassable eloquence.

'You must say,' insisted Atger, 'that it is absolutely untrue, as many of the reporters claim, that I was overcome by syncope, just after my landing ordered by M. Brun. I was washing and shaving without any help, but as 36 journalists were guarding the door, I cleared off through the window, to join my friends. Believe me, that a few days later, your pals on the press made me 'reconstruct my crime' on an awful day, which gave me no desire to soar.' (I smiled, remembering the barrage that Atger would have to cope with that afternoon in front of the broadcasting microphones, the lenses of ten photographers, and the pens of a dozen journalists. Perhaps he would regret his 56 hours of monastic seclusion in the air).

In fact, why 56 hours? World duration records for single-seater flight stretched from the first man, Wright (U.S.A.), who held the air for a minute, to K. Schmidt of Germany who established 36 hours 36 minutes at Korschenruth, but the real record that preceeded this, although not ratified, was the glory of Ernest Jachtman who brought off at Brusterort in September, 1943, a record of 55 hours 22 minutes.

So, with 56 hours 15 minutes Atger has beaten all records achieved up to now in a glider, and even for two-seaters since last February, Carraz and Branswyck only held 53 hours 4 minutes.

' Why did you use an ' Air 100 Arsenal ' ? '

' Because the ' Air 100 ' has been thought out and constructed by Jarlaud, the Engineer and the inspiration behind the Société Victor Minié Aviation and is a 100% French glider, it has absolutely nothing to do with other nations' skill, which is often the case with other machines.'

As for the equipment, it is interesting to note it included a transmitter-receiver by Nor-Radio, fitted under the dashboard by Taupin. He could be pleased about its performance throughout the flight, for the number of communications reached twelve an hour towards the end. Two barographs looked after the graphic registration of the flight on board. The navigation lights worked on dry batteries and a landing searchlight was stuck in the nose of the glider; besides that a projecting beam at night, could sweep the chain of the Alps near which the flight took place, about eight miles off.

Everything being said, we can only end up for all gliding men with threefold applause for Charles Atger—fine athlete, great companion, real sport and world record holder.

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93 Miles in 3 hours 26 minutes

U.K. SPEED RECORD

LT.-COMDR. A. GOODHART, R.N., chairman of the Portsmouth Naval Gliding Club, claimed the first gliding speed record in the United Kingdom local class recently.

Taking off from Lasham at 10.55 a.m. on Saturday, June 7th, by aero tow he released at 2,000 feet near Basingstoke, and soared to Lympne, a distance of 93 miles in 3 hours 26 minutes, gaining a height of 7,000 feet.

His average speed of 27.2 m.p.h. will, if officially confirmed, rank as a speed record over a course of 100 kilometres.

THE SWEDISH STANDARD TRAILER—*cont. from p. 8.*

The frame is covered with canvas all round to protect the aircraft against rain and dust.

To load the trailer, the tailplane goes in first and is fixed under the roof. The wings follow; their roots are attached to a framework of steel tubing. The tips rest in hempen straps which give the wings enough freedom of movement to prevent damage on the road. The fuselage is held in position on a wooden channel by straps at the main skid and the tail, and is kept upright by supports of steel tubing. This arrangement has proved most satisfactory, since it requires no special moulds for different types of aircraft. The empty weight of the trailer is about 660 lbs.

Working drawings of the Standard Trailer may be obtained from the Royal Swedish Aero Club. Only the printing costs will be charged. Address :—

The Chief Instructor, Bengt C. Bergman, Kungl. Svenska Aeroklubben, Malmskillnadsgatan 27, Stockholm, Sweden.

From : *Weltluftfahrt*, No. IV/5.

MORNING FLIGHT

By Emma ' Mom ' Krohne

FOR beauty, thrills and sheer delight
Choose a morning clear and bright—
When Day has turned skies vivid blue,
Trimmed with a Cumulus Cloud or two;
While gentle breezes softly stir—
And your engine voices a steady purr
As you climb above the fields and see
Lake and river, farm and tree,
Part of a pattern, as the World
Below you lies like a Print unfurled.
About you the puffs of Cumulii
Seem like sails across the sky :
The river, a silver ribbon now,
Flows through the fields where the farmers plow ;
Past forest and village, on to the sea,
Singing its song, unfettered and free.
Just as you feel as you fly along—
Like a bird in the sky, in your heart a song.

From : *Spirals.*

' PLAIN MAN'S GUIDE TO GLIDING '

COPIES of ' Plain Man's Guide To Gliding,' by Godfrey Lee are still obtainable from *Sailplane* Offices, price 6d.

This little booklet makes interesting reading and is particularly useful for newcomers to the sport.

Send stamp with order. Special terms for clubs requiring quantity.

MIDLAND GLIDING CLUB, LTD., Long Mynd, Shropshire

★ Summer Gliding Courses

July and August Courses are fully booked. Vacancies on September 6th—14th Course

Inclusive Fee for Course of 9 days with board and lodging and all flying £15

Full particulars from :

S. H. JONES, 409 Hagley Road, Edgbaston, Birmingham 17

FIRST WOMAN SILVER 'C' FOR DERBY AND LANCS.

SHE did her distance leg with a 55 mile flight from Gt. Hucklow to Markington, with a maximum height of 7,000 feet in cloud.

LETTER

IN a letter to the Southern California Soaring Association, E. S. Adams, M.D., Regional Medical Officer, Civil Aeronautics Administration, Los Angeles, California, says :—

'I do not have available any authorities to quote, but it is common knowledge among flight surgeons that the various sulfonamide drugs may have as side effects a clouding of judgment which may or may not be accompanied by dizziness and involvement of the eighth or auditory nerve. They also decrease the ability of the body to utilize oxygen from the air, thus lowering the effective ceiling of the pilot. These effects persist for several days after the last dose of the drug, and therefore individuals taking such drugs should not fly for approximately ten days after the last dose is taken. It is my understanding that Air Force Regulations contain a similar provision. The same caution applies to users of certain other drugs such as streptomycin, etc.

In brief, any individual who is sick enough to require treatment of this nature is also too sick to be a safe pilot.'

SCHWEIZER AIRCRAFT CORPORATION GOING INTO FULL PRODUCTION ON NEW '1-23's'

THE new and improved version of this now famous 'all metal' high performance sailplane is again going into mass production. The principal difference between the new and the old version is as we understand, about three feet additional span on each panel, increasing the machine's aspect ratio very considerably, also stiffer skin on the panels. Someone suggests that this model be called the 'Firm Skin 1-23' or perhaps it would be more descriptive to say 'The Firm Epiderm.'

Anyway a rose by any other name is just as sweet—and the '1-23' is in our opinion the 'Sweetest' of all the sweet-sailplanes. A large order from abroad and orders from U.S. pilots, including Roy H. Cullen of Houston, Texas, has started this production run of the new '1-23's' and a back-log of domestic orders will be filled also.

CZECH PILOTS 'LOST' AIRCRAFT AND GLIDER LANDED IN AUSTRIA

TWO Czechoslovak pilots who landed at Tulln airport, Austria, have decided that they prefer to accept asylum as political refugees with the Americans rather than return to their country.

According to reports they were on a flight from Bratislava to Brno and lost their way in the clouds. They were flying an aircraft with a glider in tow.

The two men are Joseph Rantak, 26, a gliding instructor with the Bratislav Aero Club; Zdenek Pesl, 24, from Brno, a student at the Technical College in Bratislava and a pupil of Rantak.

WESTERN AIRWAYS

- Immediate Capacity for overhauls and repairs.
- Extensive spares stocks held including Fabric, Dope and Paint, Plywood, A.G.S. parts. Keenest prices. Enquiries welcomed.
- Over 500 major repairs and overhauls completed on all types of Sailplanes and Gliders.
- Immediate on site repair service.
- Estimates free.

WESTON AIRPORT, Weston-super-Mare

('Phone WESTON-SUPER-MARE 2700)

ODE TO A GLIDER PILOT'S WIFE

IT'S a beautiful day to be glad in.
It's a beautiful day for a song.
It's a beautiful day to go soaring
And take the whole family along.

We'll sail o'er a wide open desert
Or over a high rising ridge.
We need no fancy paved highway,
Nor a long, span, beautiful bridge.

We need no band to greet us,
Nor do we need a great big crowd.
We need no engine to pull us,
We need only a little white cloud.

What we do need is a loyal crew chief.
A wife who won't mind the heat,
Who sits and waits for a summons
To rescue us from our lonely retreat.

ANONYMOUS WIFE.
From : *The Thermal.*

SOARING IN FRANCE

By GUY BORGÉ

CHARLES ATGER

CHARLES ATGER a world duration champion. It is extremely difficult to me to write anything about his 56 hours, because he is an excellent friend and he dislikes all the journalists; we had many quarrels about this point. But it was an extraordinary exploit, when one realises that he was ill during most of the flight and that he landed only after his instructor, M. Brun, ordered him to do so.

He lost a lot of weight after this effort and even today he has not recovered complete health. When I stayed at Pont Saint Vincent he completed his Gold ' C,' landing at Avord—his goal—and gaining his second Diamond.



Left to right :—Mrs. Mathé, Charles Atger (world duration champion) and his instructor, M. Brun

It seems extremely difficult to improve this high figure of 56 hours 15 minutes, but I should not be surprised if he wanted to exceed sixty hours in a sailplane—not for glory but only for himself.

A LOT OF GOLD AND DIAMOND FALLEN IN 3 DAYS

Excellent distance flights were performed in France on May 21st, 22nd and 23rd.

At Pont Saint Vincent where more than 5,000 km. (3,100 miles) were flown in the ' Centre ' sailplanes with a big total of Gold and Diamond : one complete Diamond ' C ' obtained by young pilot Lebeau, soaring 525 km. (325 miles) to Ruffec (Charente) in a ' Weihe '; 6 Diamond ' C ' legs; 6 complete Gold ' C's.'

At Chavenay, near Paris, where M. Eric Nessler got his last Diamond ' C ' leg, reaching his goal of Poitiers, 305 km. (189 miles) far.

Two other pilots exceeded 300 km. at Chavenay : Thaon with 350 km. (217 miles) and Ménard with 305 km. (189 miles) in goal.

To date, four pilots in the world have the Diamond 'C ' badge. Three are French : Pierre, Lebeau and Nessler.

Soaring at the Crossroads

By L. A. ('Pete') BONOTAUX

SYMBOL OF FREEDOM

EVERY weekend, thousands of ' Mr. Averages ' take a short drive to the body of water nearest their home and plunk themselves, their wives and kids, or a friend or two, into a boat worth about $1,000 or $2,000, and hoist a sail. This sail is a symbol of freedom to them somehow and a signal to relax, eat a picnic lunch, and have some modest fun.

During the course of the day, he yells ' slow poke ' to another ' Mr. Average ' doing the same thing, who promptly swings about his little boat and gives race or chase just to prove to his friend, the first ' Mr. Average,' that *he* was a liar—neither of them ever seems to prove who *was* correct, but it doesn't seem to matter because both ' Mr. Average's ' drive home that night very tired, but with a feeling of accomplishment and pride—funny thing is the whole family feels the same way, plus a feeling of great satisfaction because he is *sure* that he had—they all had—a lot of fun.

He will do this same routine, weekends at a time, year after year. No newspaper headline ever plays him up because he *isn't* news. The important thing is that *he* doesn't care!

Every so often some ' Joe ' crams himself, with a bunch of tin cans and sea-going gear, into a small sailboat designed for shallow water sailing, and heads out to sea. Many theories have been advanced as to why he does this : fear of war, women, worries, or love of adventure, loneliness or women—or the thrill of beating his head with a hammer because it feels so good when he stops.

A lapse of about three to six months takes place and ' Joe ' shows up, always looking the same : thin, needing a shave and a few decent clothes—the same as a guy looks just back from a ' lost weekend '—and always with the same story which *does* make the headlines : storms, sharks, scurvy, raw fish, raw seagulls, sunburn, frost bite, thirst, etc. Sometimes these ' Joes ' never even show up, but if they do, like old soldiers, they ' just seem to fade away,' anyway.

' Joe ' didn't seem to help anyone—oh, yes, the editors of National Geographic magazine were

grateful to him. ' Mr. Average ' helped himself and a lot of people, including all the other ' Mr. Averages " who had other sailboats. Why, ' Mr. Average ' even helped give some guys a job and they all liked him because of it. They even made special boats, gear and docking facilities for him for a very reasonable price—some even free.

A GALLANT GESTURE

In the sport of soaring, we have known of some remarkable men who applied their skill and ingenuity to develop the sport to where ' Mr. Average ' could enjoy it. During the course of these efforts they happened to set several soaring records. At the time, some of them did so deliberately in order to give worthy publicity to a new sport.

Some of these records were just for their own fun and were coincidental. Some of the records they thought of establishing were passed up for reasons of personal safety and because they felt that if they didn't achieve their goal they would surely achieve the obituary columns, thus partially destroying, through bad publicity, all or most of their previous efforts which had been painfully made in order to help establish this new sport for millions to enjoy—truly a gallant gesture.

I remember that Jack O'Mera, back in 1934 right after his successful airplane-to-glider towed ' airmail ' flight from Miami, Florida, to Havana, Cuba, got himself all excited about an over-the-ocean soaring flight from Miami to one of the Bahama Islands about 65 miles away. He was going to airplane tow start, then slide over to those beautiful and tempting clouds that form an aerial chain directly over the Gulf Stream which passes along the Florida coast there. Jack made serious study and preparations for this adventure (he didn't have any wife or kids then, either), but finally decided all by himself that, after all, he was allergic to sharks and wisely gave up the trip.

That same winter Dick DuPont was well charged with successful soaring records, and also was on his honeymoon down in Florida. This was at the same time that Jack was there on his airmail-glider-flight. Dick spent many serious hours studying storm fronts which swept across and down the Florida peninsula. Dick was planning a ' storm front ' soaring flight—something in vogue at that time in the soaring world. While waiting for a storm to line itself up, he made all the preparations—I was working for him at that time as a mechanic and was as excited over the prospect of his setting a new record as he was. During the waiting period he decided to fly his bride back into the Florida Everglades to do a little hunting for the excellent game which abounds there, so with guns and a picnic lunch, they jumped in their nice new airplane and an hour later found a flat clear spot to set down on.

The plane flipped over on its back during the landing and, although unhurt, Dick and his wife had to spend the day and the night in the cabin. We were able to locate them, thanks to their radio, and rescue them OK the next day. Somehow though, after that, Dick didn't make any effort to undertake that storm front deal.

The Florida Everglades, unlike our local deserts and mountains, have lots of water—filled of course with malaria, bugs, snakes and alligators. But, like the desert, they also lack roads, telephones and people. These factors may have influenced Dick—I do know that he was a guy who had plenty of ' intestinal fortitude.' I also admired his modest but excellent good sense.

Lew Barringer had lived in Arizona several years for his health. After having been afflicted with ' glideritis,' he picked up another infection on top of it called ' recorditis ' just about the time that he remembered a peculiar big cloud that would develop about 10 p.m. quite regularly over the great valleys out there in the beautifully clear moonlit sky. He even figured out what caused the huge cloud and knew it had plenty of lift, so he set out to gather the necessary sailplane, junk, dough, and time to try this combination. After all, the possibility of soaring by moonlight can become an intoxicating thought (about as tempting as sin)—ask any sailplane pilot if *he* hasn't had dreams about this sort of thing! Lew got well along in his efforts and arrived in Texas early in 1938 for some soaring there, planning to go on to Arizona later. Somehow he got to noticing the scarcity of water, roads, telephones and people in certain sections on a few of his flights over Texas and it got him to thinking that these items were even scarcer in Arizona! He got to worrying about that moonlight trip even to the point where he began to wonder what if the moon went ' out ' or got hidden by the cloud ? He wasn't sure that the ' Minamoa ' sailplane could stand a really bumpy landing on the desert, and that if he *did* have to land, he might be awfully lonely.

A business deal called him back to the East just about that time—funny thing is that he never told us any more about plans for the moonlight soaring when we saw him again months later.

Peter Riedel, of Germany, was a joy to watch as he waltzed a sailplane around—made us all admire him at Elmira in 1937 and '38. Long distance soaring possibilities in America really fascinated this boy and he set out to *really* demonstrate his convictions on this score. He decided to tow his two-seater ' Kranich ' sailplane on his trailer to California, then each day to airplane-launch and soar as far as he could, 100 to 300 miles, toward the east. He planned to repeat this on every possible succeeding day until he landed in New York City. We visualized all kinds of records and publicity from this whopping scheme. Peter got started a bit slow until he reached Arizona. There he decided on a quick feeler flight over the airport before really getting started for the day. He was only in his shirt sleeves and had no water or equipment (Peter ordinarily was definitely prepared) on this ' tester ' flight when he latched on to a typical desert thermal which picked him up to 10,000 feet before he realized it, and drifted him, with a rather strong wind, quite a distance from the airport. He headed back for the airport and ran into more tremendous lift all the way—this carried him to 12 to 15,000 feet and really drifted him. From there on, he *reluctantly* made a flight of over 200 miles, all of it above 10,000 feet, over bad lands, until he was able to locate some landing area *plus*

civilization! He finally located a lonely ranch just before sunset and landed, blue with cold and exhausted from the literally frozen stiff controls.

After Riedel was lucky enough to have survived this flight (he had no oxygen supply and unwillingly went well above 18,000 feet, causing him to black out a few times) it took no time at all to decide, then and there, that his plan of soaring completely across the U.S.A. was going to be a lot more dangerous and difficult than he had estimated, especially over our south-west areas, and that the entire plan would have to be given up until better sailplanes and equipment could be secured *plus* concentrated training with them over our desert regions, which had given him thermals of a violence which he had never experienced in Europe.

Shortly after these episodes of Riedel's, he had to return to Europe and the war swallowed him in its wake. (I have just joyfully found Mr. Riedel's name on our mailing list—he now resides in Caracas, Venezuela—we wish him luck in his new home.—ED.).

' Red ' Statter, around 1937, as I recall, made a very unusual flight straight out to sea for several miles off the shore above Palos Verdes. This flight, I believe, embodied the discovery of a new kind of lift available (?) for sailplane pilots. Your writer has been informed that this over-the-ocean-air-wave is due to the warm ocean winds being diverted upward not only by the physical deflection of these winds by the sea cliffs themselves, but by the stagnant layer of hot ground air lying in the Los Angeles valley directly inland and behind the Palos Verdes hills. This inversion influences the sea winds coming onshore to hump up over the warm land air.

At the time that ' Red ' discovered this lift, he was simply sea cliff soaring at approximately 1,000 feet altitude; however, as he was tempted out farther and farther toward the sea he *gained* altitude to approximately 1,500 feet. ' Red ' had the good sense to not explore this tempting phenomenon until he could figure it all out while back on dry land and prepare for the risk involved.

I understand that ' Joe ' Staneck and ' Al ' Hutchinson have tried limited experimental flights on this ' sea-air-wave ' with some success but have felt that the overall risk simply wasn't worth the new thrill.

None of these pilots became afflicted with ' recorditis ' over the discovery. Each of these men had some pet type of soaring which they wanted to further investigate: new lifting forces in the atmosphere and the winds which they felt convinced would carry them into new thrills and establish new soaring records. However, their years of soaring experience also gave them the understanding of their limitations in this medium of flying and their common sense held their enthusiasm in check; at least none of them died in his pursuit of these forms of soaring.

At present we are all intensely interested in the research work undertaken by the Government into the Sierra Wave phenomena. The men employed to risk the dangers encountered in this Project *are* professionals and not only possess thousands of flying hours, but know full well the forces which they are dealing with and are making every scientific precaution and preparation possible for this work. However, because they are using the aircraft medium of sailplanes for this research work, many weekend sport-glider-pilots are becoming excited in the belief that this is a simple and thrilling new means of soaring now available. Perhaps the best comparison of this belief would be for the average weekend ' Piper Club ' pilot to feel that he was equipped and able to fly jets.

This wave soaring is *no* child's play—all the facts about it are by no means known. It's dangerous and it occurs over one of the most inhospitable terrains possible for any aircraft operations. Every qualified sailplane pilot who has had any experience with the wave has warned us *over and over* of its dangers as they are known to date. These same pilots all agree that what little they do know is by no means the whole story about the wave.

The full story is being worked upon by research men—the same kind of men as those who devote themselves to other weather studies, like Admiral Byrd at the South Pole, research chemists, microbe hunters, test pilots—all trying to tell us laymen something good or of the dangers of which we should take note. The researchers of the wave are trying to discover for all aerial navigation the ' what-where-when-and-why ' we should *not* fly in or over certain wave areas. Their work is *not* exclusively for the sailplane pilot so that he can achieve new altitude records by using the wave.

If soaring in this country is going to progress as a sport or a flying art or even survive as a real activity at all, we who are engaged in it now must help ' Mr. Average ' to understand that it is a *sport*; also that it is of reasonable cost and convenience *and* is safe. Furthermore, we should stress that a ' Mr. Average ' with modest equipment can be qualified to enjoy soaring as well as those few who are active in gliding activities in this country.

Your writer has a sincere personal admiration for the pilots who have achieved new records, and an appreciation of the work, preparation, and expense which usually accompanies these efforts. We also appreciate the great stimulation which every new record gives to other pilots—it makes for competition and we need that in every sport. However, the sad part of records is that others, who frequently are not sufficiently experienced or equipped for the effort, set out to better these records and too often their attempts end in death or tragedy—which not only is a tragedy in itself but which directly throws a bad light on the gentle phases of the sport and a bad reflection on every other pilot engaged in soaring. Therefore it becomes part of the responsibility of every record aspirant to honestly ask himself: ' How will my success or failure in regard to this record attempt affect others in soaring? '

If the best experienced and best equipped pilots in American soaring activities are going to continue to make their greatest efforts for the establishing of records and more records, then the sport as a whole is going to slip into the category of mountain climbing, bobsled racing, and auto daredevil racing, all ' sports ' which ask the highest price of personal risk and expense and which give (if at all) the least return in thrills, pleasures, and lasting accomplishment.

The French Team—at Pont St. Vincent



From Left to Right :— de Lassagers, Brunswyck (holder of world two-seater duration record), Landi, Max Gasnier, Marbleu, Aubert (team chief), Pierre

Photo : Borge

THE ' NELSON-PERL ' AUXILIARY POWERED SINGLE-PLACE HIGH-PERFORMANCE SAILPLANE

THE ' Nelson-Perl ' is progressing rapidly and may be in competition during the 19th National. Ted Nelson says : ' We have completed the static tests on the root section of the wings and we are very pleased with the way the skin stands up supported with the styrafoam in the D Section. Using 1/16 plywood on the entering edge, the wing actually holds to 130% and failure does not occur in the D Section but rather in the compression of the wood about the main attach fitting bolts.

The torsional load went to 140% and we stopped there with no failure because we wanted to retain the section. I feel sure that Harry Perl has hit on a very excellent idea for producing a wing that will have a practically perfect airfoil, loaded or unloaded. It was interesting to watch the action of the skin and we were very pleased to see that there were no cants developing in the D Section, even with ultimate load.

Time will tell when we get it in the air. Nelson also tells of terrific soaring conditions in his area, ' We climb to 10,000 feet, etc., etc., and over San Francisco Bay mind you.' We have always known Nelson as a very reliable man—but maybe he has been reading Compton's stuff—they say this bragging habit is catching—being Texans we wouldn't know.

REFINEMENTS TO ' RJ-5 '

JOHNSON'S ' RJ-5 ' is expected to do about 44 to 1 after modifications now in progress. Rebuilding the forward portion of the fuselage in order to provide a flush skid and other refinements are thought to push this machine's performance possibilities still higher than when last flown.

As everyone knows, Dick has never considered the ' RJ-5 ' to be a ' finished article,' and has constantly sought to make improvements. On first sight and at some little distance, the famous ' RJ-5 ' makes a rather uninspiring appearance on the ground. No fancy paint job with the usual flashy colours and striping, has as yet been applied, for the simple reason that Dick was still considering the craft as ' work in progress.'

But any sailplanist seeing the ship in the air, sweeping and wheeling by close overhead, or going around the airport again when the altitude seemed just right for final approach, recognizes immediately that here is something never before seen or dreamed of—and he forgets all about fancy dress for her.

SITUATION WANTED

PRIVATE Pilot and Soaring Enthusiast, 27, Single, British, seeks active, healthy and absorbing work in any country. Winch Driver, Silver ' C,' 300 hours ; Extensive Aircraft Engineering Experience. Salary of Secondary Importance.

FOR SALE

'SCUD 3 ' Sailplane with new C. of A. Recently completely overhauled and modified to take fully enclosed Perspex cockpit canopy. Complete with trailer, barograph, etc. Offers invited.—R. E. Clear, Heathfield,' Bransgore, Nr. Christchurch, Hants.

Reprinted from——

AIR-PLANE FLIGHT

By A. YORK BRAMBLE, M.R.S.T., F.R.MET.S., A.R.AE.S.

Published by Sir Isaac Pitman & Sons, Ltd.

Sixth Flight

BALANCE OR TRIM AND STABILITY

§ 148. IN the first five Flights, we have progressed from the simple idea of the flow of a fluid round a body of certain shape, presented at a certain attitude (the body in question being simply a flat plate or a 'plane'), deriving what we call 'lift,' but attended nevertheless by a measure of unwanted 'drag.' We have discovered that the best shape to be given to this body, to produce the greatest amount of lift for a given area with a given speed, is that of the 'aerofoil' developed from the cambered plane. We have learnt something of its advantages and disadvantages over the flat plate as a lift-producer, and of the means of varying the characteristics of an aerofoil of given section by means of such adjuncts as slats, flaps, etc. We are therefore now in a better position to answer the questions raised in §§ 18 and 43 of the First Flight. Here we asked first, if it might not be possible to set and maintain the balance of an object lifted in an airflow, and second, whether that lifted object could be made to carry safely a human passenger. As to the first query, we found our improved design of aerial flat-fish (the model in Fig. 88) to ride in the airflow reasonably steadily, an achievement largely due to its 'bent-up' mainplane and its 'tail-piece.' As to the second query, it is now obvious that the aerofoil can be made to provide enough 'lift' to support comparatively heavy masses. Equally obviously, if a human being is to trust himself to be lifted as a passenger in such an apparatus, it must be constructed so that its 'floating' in the airflow is of what we should call a 'stable' nature, or that it should have 'inherent stability' to a fairly high degree, and, as suggested in § 43, that it must be under control. We will examine the design of a much larger machine made like the second aerial flat-fish or glider (as we called it) which also may be towed behind a motor-car, and may safely carry a human passenger.

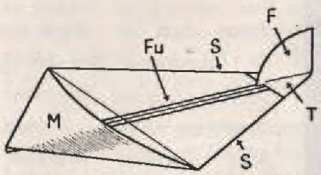


Fig. 88. Our Original Glider

M main-plane — *S* stringer
Fu fuselage — *F* fin
T tail-plane

§ 149. Fig. 88 reproduces our earlier model glider and recalls to our minds the names of the three principal parts, viz. the fuselage or body of the machine, the main plane, and the tail unit. The last-named consists of two steadying or directing surfaces—the tail-plane, which is fitted almost parallel with the main-plane, and the tail-fin, fitted at right angles to the tail-plane. Fig. 89 illustrates the large-scale glider, in which we hope shortly to become (at any rate in imagination) airborne. Note the similarity between it and our original model glider. The fuselage, developed from one straight stick, has become a simple framework of wood. The lower part of this framework deepens towards the front end and carries the passenger's seat, beneath which may be seen the skid on which the glider rests when on the ground. Forward of the seat is an upright stick with a cross-piece just in front of it. These two are the main flight controls by which the passenger may govern the attitude of the machine in the air. Their function and use are discussed in our next Flight.

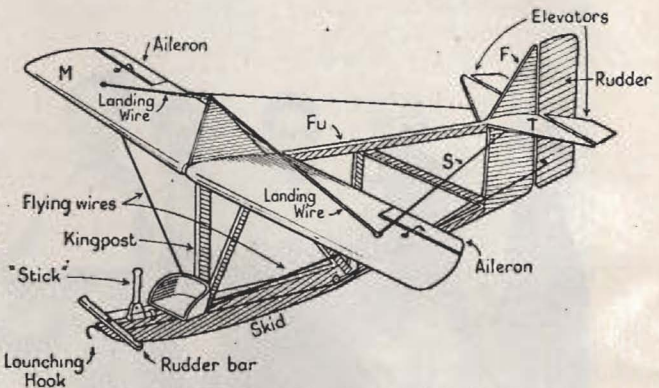


Fig. 89. The Man-carrying Version of Glider
Lettering as in Fig. 88.

§ 150. In our examination of a design embodying the qualities of balance and stability it will be helpful if we first consider the three principal lines of reference regarded as running throughout the machine :—

(*a*) the longitudinal axis ; (*b*) the lateral axis ; and (*c*) the normal axis.

They are all regarded as passing through the centre of gravity of the machine and are mutually perpendicular. A further useful reference is known as the 'plane of symmetry'—a central vertical imaginary plane dividing the machine into two similar halves.

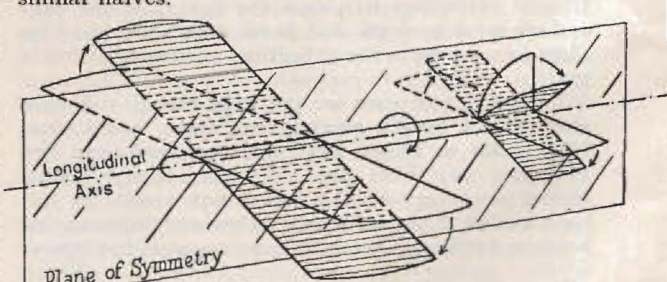


Fig. 90. Rolling : The Machine Turns about its Longitudinal Axis

[The fundamental problem in flight is stability in the air. By permission of the author and the publishers we reproduce here the chapter on this subject in York Bramble's recent book. This simply explains the problem and how it is overcome in flight. It is also a good example of how such problems should be explained]—Ed.

§ 151. The longitudinal axis lies in the plane of symmetry and runs through the length of the machine from nose to tail (*see* Fig. 90). If the machine moves so that it appears to change its position about this line, it is said to be banking or rolling. If the banking continues so that the machine turns completely round on this line until it regains its former position, it is said to have performed a full roll.

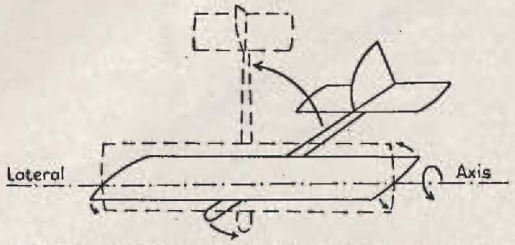


Fig. 91. Pitching : The Machine Turns about its Lateral Axis

The second of these axes, the lateral axis, may be seen running from side to side, or from wing tip to wing tip (*see* Fig. 91). If the machine changes its attitude about this line, it is said to be ' pitching,' and if a pitching-up action continues so that the machine turns right round and comes back to its former position, then it is said to have ' looped.' This looping is called ' bunting ' when the machine starts from its normal attitude to move nose down, instead of nose up. The third of these axes may be seen running up and down through what we may call the ' centre ' of the machine, at right angles to the other two axes, and is called the normal axis (*see* Fig. 92). Movement of the machine about this axis is called ' yawing.'

§ 152. Besides these ' principal ' lines of reference, there are others, also regarded as radiating from the centre of gravity of the machine, and accordingly as

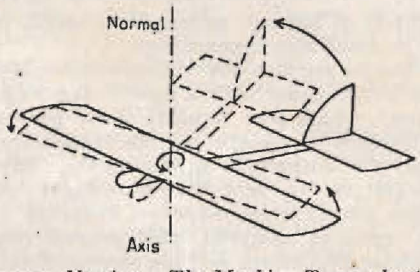


Fig. 92. Yawing : The Machine Turns about its Normal Axis

being translated with the machine, but keeping their positions fixed relative (*a*) to one another (i.e. mutually perpendicular) and (*b*) to the mean direction of airflow past the machine. They are :—

(*a*) *the drag axis*—this is parallel to the direction of airflow ;

(*b*) *the lift axis*—at right angles to the drag axis, and lying within the plane of symmetry ;

(*c*) *cross-wind axis*—at right angles (as above-mentioned) to the two preceding axes.

§ 153. There are three further planes of reference, which, together with the axes described, enable an understanding of the attitudes of, the motions of, and the forces acting upon the machine in its flight through the air. Each plane contains two of the first-mentioned axes, and passes through the centre of gravity of the machine, thus :—

(i) *the rolling plane* contains the lateral and normal axes. The longitudinal axis runs through it at right angles, and it is round this axis that rolling takes place (*see* Fig 93) ;

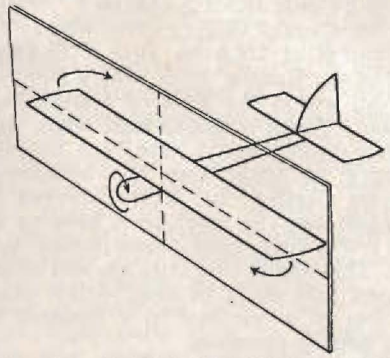


Fig. 93. The Rolling or Banking Plane

(ii) *the looping plane* contains also the plane of symmetry. In this plane lie the longitudinal and the normal axes. The lateral axis runs through it at right angles, and it is around this axis that looping takes place (*see* Fig. 94) ;

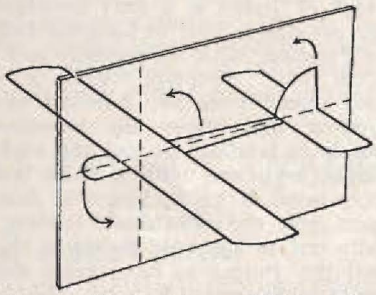


Fig. 94. The Looping or Pitching Plane

(iii) *the yawing plane* contains the longitudinal and lateral axes. The normal axis runs through it at right angles, and it is round this axis that yawing takes place (*see* Fig. 95).

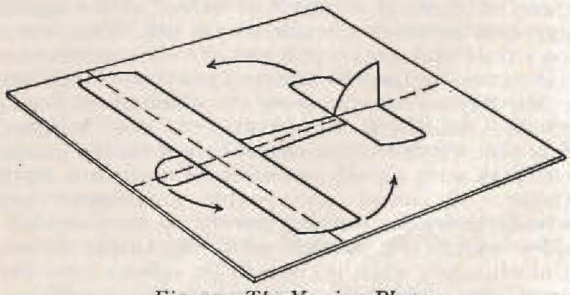


Fig. 95. The Yawing Plane

(To be continued)

THE SAILPLANE AND GLIDER

THE MEETING AT BUNSTER

CAN some expert meteorologist explain why, as soon as the Lyons' Tea people's sailplanes and gear appear on a site, the wind immediately changes to an unfavourable quarter ?

Those members of Gliding Clubs who attended the Demonstration at Ilam on June 27th-28th, would notice that the Bunster Hills, which face South and South-East, are in the form of a horse-shoe. Had there been a South or South-East wind, there is no doubt that records would have been broken. Of all the number of times that the Members of the Nottingham Gliding Club have surveyed this site, never before has the wind been blowing from the West, as it was doing consistently during the Demonstration. This meant that only the end of the horse-shoe-shaped hills could be used, which gave a very limited area of a hundred to a hundred and fifty yards for soaring purposes.

In spite of this, some excellent soaring was seen and most of the sailplanes which were there, were able to remain in the air for periods of from twenty to thirty-five minutes. Mr. Waplington, the energetic and enthusiastic Secretary of the B.G.A., honoured the Meet with his presence on both days, complete with stop watch and binoculars. He fulfilled the difficult task of Judge in a very satisfactory way, and thanks are due to him for his great help.

Captain Stratton, with his recently and hurriedly repaired ' R.F.D. ' Sailplane, gave a wonderful display and soared from two hundred and fifty to three hundred feet above his launching point. Unfortunately in landing, he had the misfortune to have a slight argument with a stone wall, which made match-wood of his cockpit and damaged one wing. Apart from the unfortunate landing, this was undoubtedly one of the best flights of the meeting and caused the Judges to have great difficulty in arriving at their decision.

Mr. C. M. C. Turner, of The Channel Club, Folkestone, who brought his ' B.A.C.' Sailplane, gave a marvellous display of soaring of a very daring nature. Although consistently losing height, he soared persistently along the face of the hill-side and came so close, that when he turned, his wing-tip appeared to brush the side of the hill. This was a very masterful display and was of such a spectacular nature that it gained for him the President's Silver Cup.

Mr. Baynes brought along the diminutive ' Scud ' which is built by E. D. Abbott, Ltd., and Dr. Allen, was pilot. It is truly remarkable that he, the owner, can pack such an efficient machine on such a small trailer. It caused considerable amusement and wonder to see him coming merrily up the steep hill-sides towing his trailer with an Austin Seven. Unfortunately when it came to Dr. Allen's turn, the wind was practically non-existent, but, even so, he was able to show us that the ' Scud ' can soar in the lightest of breezes, although its speed, probably due to its small size appears high.

Our thanks are also due to Commander Blackburn, who gallantly came with a brand new ' Cloudcraft Phantom,' which had recently been purchased by Mr. Michelson (a member of the Manchester Club), and had the misfortune to spring the three-ply on the cockpit on his very first trial flight. Although desperate efforts were made on Saturday night to obtain repairing material, this proved impossible. Commander Blackburn and his associates must have felt distinctly disappointed not to have seen his Club would like to assure him of their sympathy, and also that they were very disappointed not to have seen his beautiful machine in action.

Herr Krause, in his ' Falke,' gave a very polished display. The more one comes in contact with Herr Krause, and the oftener one sees this quiet young man in action, the more one is impressed.

We were also extremely fortunate in having Herr Magersuppe with his two-seater machine, the ' Scarboro ' and he, also, delighted the crowd with his dashing performance in his very efficient craft. It was very amusing to be among the crowd when he

TWENTY-ONE YEARS AGO

JULY 17, 1931



Herr Magersuppe thrills the crowd at Bunster

was manoeuvering for his position to do his celebrated swoops. The sight of the dear old lady, who, when Magersuppe swooped down on her, immediately erected her parasol as a barricade, caused roars of laughter.

The Gliding Competitions were held at the bottom of Bunster Hill in a large field, and, in spite of the fact that most of the gliding was done cross-wind, some excellent performances were put up. Mention must be made of the wonderful effort of Mr. G. O. Smith, of the Matlock Club, who, in the Spot Landing Competition, actually landed with one wing on the spot. Judging from the reports in *The Sailplane* of other Spot Landing Competitions, this seems to be a record, and is hardly likely to happen again for a long time. We would hasten to assure readers that this effort was no fluke but, was obviously tried for with masterly ' S ' turns.

[*A fine flight of a similar nature in a Spot-Landing Competition was made by Mr. Buxton, at Lenham, in September* 1930, *when he put the skid of the machine right across the mark.*—ED.]

The North Staffs Club had the misfortune to crash their ' Primary B.A.C. ' Machine after only one of their members had competed and, unfortunately they were thus unable to use their ' B.A.C. II.'

Many people attempted to estimate the number of spectators, who were watching the Demonstration from a large number of vantage points, on the Sunday. These estimates vary from 15,000 to 25,000 people. Not only was the launching site and the surrounding hills packed, but there were spectators on every road and point of eminence, both on the soaring site, and in the gliding field at the foot of the hill.

We have received reports from the Police and the Automobile Association that all the roads for several miles round Ilam were packed, but fortunately, in spite of the great congestion, there were no accidents. It is estimated that 8,000 cars were in Dovedale and district on the Sunday, as well as a very large number of charabancs and motor-cycles.

Our very great thanks and congratulations are due to the following :—Mr. C. M. C. Turner, Winner of the President's Cup ; Capt. A. N. Stratton, Winner of President's Silver Tankard ; Mr. G. O. Smith, Matlock Club, Winner of special Silver Medal for Spot Landing Competition.

The following were also winners of Silver Medals :—Dr. H. Allen, ' The Scud ' ; P. W. Pearsan, A. L. Slater, G. O. Smith (Matlock Club) ; A. L. Jones (North Staffs Club) ; A. W. Graham, F. Naylor, L. A. Falla, L. Edwards (Preston Club) ; P. Priest, D. H. Matthews, R. Woodcock, F. Lawton (Huddersfield Club) ; H. A. Searby, F. Granger, M. H. Lee, and L. H. Burbidge (Nottingham Club).

Special Gold Medals were also presented to Herr Hans Werner Krause and Herr Carli Magersuppe, in appreciation of their contribution to the success of the Meeting.

The following were also successful in obtaining ' A ' Certificates :—F. Naylor and A. W. Graham (Preston Club) ; and R. Woodcock (Huddersfield Club).

There is not the slightest doubt that had these machines not been flying cross-wind, every competitor would have made an ' A ' Certificate qualifying flight.

QUIZ FOR BEGINNERS—ANSWERS

1 Forward or up.

2 Three on American standard turnbuckles. No thread visible on BA or BSF threaded turnbuckles.

3 Tension, shear, bending, torsion, compression.

5 The chord line is the straight line through the centres of curvature at the leading and trailing edges of an airfoil section.

6 Dihedral angle is the angle between the main-plane and the horizontal. Angle of incidence is the angle between the chord of the airfoil and a fixed datum line on the glider. Usually the top longeron.

7 For daily inspections this should be checked by line of sight from front of glider, particularly on wire braced primary gliders. For C. of A. this check should be made by inclinometer or level check.

8 For daily inspections wings may be checked by checking line of L.E. and T.E., and for wind, from position forward of the glider attachment points. Adjustments such as turnbuckles to be checked for movement. For C. of A.'s similar checks and additional checks of incidence, dihedral with inclinometer or protractor level, and diagonal measurements from nose to wing tips and wing tips to fin.

9 All main attachment points, with particular attention to those parts close to the ground, or exposed on the various components. Corrosion should be stopped immediately it is detected.

10 A cable splice should fit tightly around the thimble and be closely and neatly tucked. At least five (5) tucks are required, and the finished splice must be served with chord and shellaced.

11 Hinges through spars must be tight and safe-tied to prevent turning in spars. A 90 degree turn could cause jamming of controls.

12 Tow line releases should be closely checked for movement and clearances, and the operation tried under load with a ring of the type used on the tow line.

NEWS FROM CANADIAN CLUBS

Soaring Club of B.C., Vancouver

PURCHASE OF LAISTER KAUFMAN

RECENT months have seen club activity concentrating on : (1) Appraisal and attempted repair of the deteriorated wings of our ' GB II ' ; this project has been temporarily shelved because of the major job of rebuilding it will entail. (2) Splicing the spar of the ' TG-3.' A special splice, OK'd by Prof. Wisnicki, has been designed and commenced by Frank Dashwood. (3) Assisting Peter van Groen in getting his ' Northrop ' primary finished and licensed. (4) And most important, the purchase of a ' Laister-Kaufman 10-A,' 2-place trainer in Seattle. This machine is now under repair prior to licensing and import, and the club hopes to have it in operation in a few weeks.

Robert Droz, a Silver ' C ' from Switzerland, is a new member and will be instructing with the club this year.

The Swiss Vice-Consul, Mr. V. Tobler, has been very generous in supplying us with films and literature

on Swiss gliding. Two films, ' Wings of the Nation over Switzerland,' and ' Soaring in the Swiss Alps,' we showed at the Pacific North-west Soaring Association banquet in Seattle.

The Mission Air Cadets have been advised by the Provincial Committee in Vancouver that they can have possession of the ' TG-3-A ' and a ' Kirby Cadet ' which have been stored locally for several years. It is hoped that a joint operation between this group and the Soaring Club will be worked out.

FRANK DASHWOOD.

R.C.A.F. Soaring Club, Calgary

We are starting the year with better promise than ever before. S/L G. W. E. Brown (Gordy) is the new President and WOII (Buck) Buchannan is now C.F.I. Our machines consist of a ' TG-3-A,' a ' 1-19 ' and the old ' Robin ' ; one serviceable ' Tiger ' and another being repaired, plus the winch. Over Easter the soaring was promising ; Barney Pepper was up to cloud-base (approx. 10,000 feet) and still climbing in the ' 1-19 ' but ran into snow. He was in shirt sleeves so had to come down after 1½ hours flight. The ' TG-3-A ' was up over two hours.

Gimli Detachment. Since F/S Barney Pepper and myself have been transferred to Gimli we hope to establish a soaring club here, bringing down our second ' Tiger ' from Calgary and importing a ' TG-3-A ' from North Dakota.

S/L A. W. RIDDELL.

Montreal Soaring Council, Montreal

The M.S.C. held its annual meeting on the evening of April 9 at the home of Mrs. Bertha Meana. It can now be divulged that the ' Mu-13 ' is ready to fly as soon as the canopy is finished. It looks better than new and the canopy—designed by Stefan Brochocki—is a big improvement in apperance over the ones previously fitted on this type.

A ' Schweizer 1-23 ' has been ordered (with flush rivetting) by the Canadair Soaring Club, with a fat lion's share of the bill being footed by the Employees' Recreation Association of Canadair. John Agnew (anybody say ' Who's he ? ') did the miraculous staff work on this piece of legerdemain.

The M.S.C. executive now answer to the names of John D. Agnew (President), Stefan Brochocki (Vice President i/c Maintenance), Russell Lightbody (Vice-President i/c Most Everything Else), Robert Miller (Secretary), Gordon Hicks (Treasurer). All were elected by acclamation.

OVER 4,000 FEET

Good Friday saw the M.S.C. start flying operations this year and both succeeding weekends have turned up good soaring weather, with both the ' 1-19 ' and the two-seater getting over 4,000 feet. Stan Rhys, among others, has been running up some good altitudes.

On the Saturday of the last weekend in April it was decided to burn the grass off the centre of the airport, and it burned with a nice hot flame and a smoke column going up to over 4,000 feet. Several soaring flights were made in the smoke, at times on instruments. Lift was spotty but vigorous—and so were the downdraughts.

The fairly heavy area of bush at the north and east of the field has been found to give off an evening thermal under the right conditions. The lift is gentle and covers a considerable area. In at least one flight it has been found to extend to over 3,000 feet. This occurs around 5 p.m., E.D.S.T.

Looking forward to the meet, the lounge has been painted. Prizes have been promised by local merchants at St. Eugene. The Windsor Hotel in St. Eugene will serve meals for $2.00 a day—this will cover a hot breakfast and dinner and sandwiches for lunch.

V. A. POPE.

Queen's Gliding Club, Kingston

After a somewhat weather bound winter during which two pilots, Dave Campbell and Harry Hutchings, qualified for their licenses, the club has been grounded during April because of trouble with the ' Moth.' However, due to the efforts of Mel Bradley she is flying again and raring to go. We hope to operate from the Picton Airport for some weekends this summer and perhaps the Trenton Club will join us if they do not get their own tow plane.

Largely due to the efforts of Earl Morris (who also rebuilt the ' Grunau ' fuselage) the left wing for our other ' L-K ' is completed and will be flying soon after the Toronto Club returns the other wing. We should have two ' L-K's ' and our ' Moth ' at the Meet this summer.

Our C.F.I., Hank Janzen, will enter the race for the ball and chain trophy on May 17th at Niagara Falls of all places!

BRUCE BIGHAM.

The Four Soaring Club, Hamilton

Welcome to the latest club to arrive on the Canadian soaring scene! Excerpts from their letter follow :—

. . . Very briefly it can be stated that Jack Ames test-flew our ' TG-3-A ' at Mount Hope on March 15th, with a total of 13 hours 28 minutes having been spent airborne from 24 aero launches since that time.

Much credit should go to Jack. He came to Hamilton three times, at our request, regardless of handicaps which included 30 degree ground temperatures, March 15th ; 40 m.p.h. winds on March 23rd ; only a reported 6 hours sleep in the 48 preceding soaring operations on April 11th—and he was glad to assist us. As you stated in *Free Flight*, glider enthusiasts are ' not practical people.'

April 11th, Good Friday, was a stellar day. The cumuli following Thursday's cold front produced 15-20 f.p.s. lift early in the day and under Jack's direction John Wyatt was able to climb 1,500 feet from release to a ceiling of 3,600 feet. As the hours flew by all cloud dissipated, reducing lift to dry thermal velocities of 5-10 f.p.s. Still Russ Norman and Roy Byrne were able to reach the 3,000 feet level on their flights.

CHAS. M. YEATES.

From : *Free Flight.*

SOUTHDOWN GLIDING CLUB

SUMMER CAMPS

IT is proposed that we should run two camps this year, one at Friston from July 19th to 27th, using all the club aircraft, the other at Lasham from July 26th to August 4th, for ' Olympia ' pilots only. All charges will be as usual. Whether or not these camps materialise depends entirely on the demand.

SUPPORT NEEDED

Wednesday Evenings. A modest start has been made with work at the Hangar, but the scheme needs support from more members. There is plenty of work to be done merely to keep things as they are, and we do want to see a gradual improvement in hangar facilities this summer—apart from keeping vehicles in order, to save losing valuable flying time at weekends. By the way, it has been agreed that each member turning up on these Wednesday evenings will be encouraged to press on with whatever work he considers to be most useful, an idea which most of our Committee seemed to think was sheer heresy!

So far this year we have had about 750 launches and 115 hours flying altogether. There have been only five good soaring days, less than for the same period last year, which explains the fairly low total of hours, but launches are well up on last year's figures. We have gained three ' C ' certificates, and the Portsmouth Naval Gliding Club, who were flying their ' Grunau Baby ' at Friston between Christmas and Easter, gained three ' C's ' as well. They also flew two 5 hour duration flights. Four of our members have soloed this year.

Sunday, April 20th. After a morning of training circuits the wind backed and freshened, and by 2.30 p.m. the cliffs were soarable. Ken Perelli was launched in a ' Tutor ' and got his ' C,' and soon all four club aircraft were soaring together. Later in the afternoon a layer of low cloud formed over the field, and Don Snodgrass with pupil Martin Litchfield in the ' T-21-B ' flew back through it and landed. George Constable in the ' Olympia,' and John Murray and Johnny Billenness in the two ' Tutor's ' thought it best to remain where they were as the cloud was behind them, and they were still quite comfortable when it cleared about an hour later. This at least seems to be a good method of keeping Johnny in the air for more than half an hour!

Saturday and Sunday, April 26th-27th. Mrs. Anne Douglas of the B.G.A. Instructors' Panel came down to examine and catagorise the Instructors. When all formalities are completed we shall have six qualified B.2 Instructors.

Sunday, May 11th. Those members who were sleeping at the Hangar awoke to find a good strong southerly wind blowing. It was most definitely a day for flights to Beachy Head. Don Snodgrass was launched in the ' Olympia,' soon followed by the ' Tutors ' and the ' T-21-B,' and all were able to look down on the lighthouse from a comfortable altitude. After midday the wind veered making lift over the cliffs to the Head unreliable, but soaring continued over the Seven Sisters until 5.30 p.m. when the wind slackened allowing Martin Litchfield to have his first solo flights. A total of 20½ hours were flown by four machines during the day.

Sunday, May 25th. Whilst we at Friston were confined to circuits, Don Snodgrass took the ' Olympia ' on a cross-country flight from Lasham. After flying for a while he found he was nearing the coast over Southampton, so he set off to the north-west from there, finally landing near Romsey, 22 miles as the crow flies from his starting point. He reached an altitude of 4,200 feet on this flight, thereby gaining Silver ' C ' height. We hope he will soon be able to complete his Silver ' C ' by making the necessary 50 kilometres distance flight.

Whitsun. On Saturday a few circuits were flown. On Sunday, after a slow start things got going at about 11.30 a.m. and soaring continued throughout the day until darkness made pilots land. There were some periods of very heavy rain after each of which the wind veered and the lift was reduced, it soon

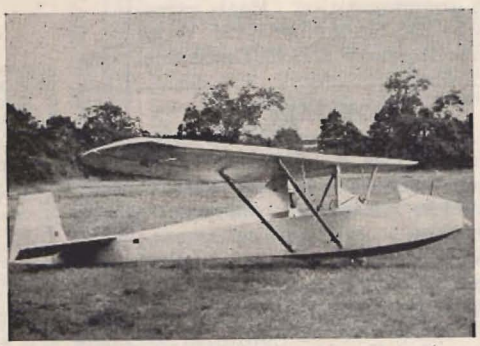
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picked up again. Martin Litchfield made his ' C ' flight in rather rough conditions. David Parsey and Dr. Jameson flew to Beachy Head in ' Tutors.' The ' T-21-B ' and two ' Tutors ' flew a total of 24 hours.

On Monday the wind was too strong for any flying and everyone went home early for a change.

On a few of the weekends lately when the weather was anti-cyclonic the sea breeze played havoc with the winch launches, there being an easterly wind above 300 feet, and a south-west wind below.

FREDDIE FOORD.

SOARING CONDITIONS IN B.C.

THE Soaring Club of B.C. has admirably fulfilled one of the conditions under which the ' Grunau Baby ' was turned over to that club with the submission of a report on soaring conditions in B.C. We are pleased to present herewith portions of that report :—

The experience of the Soaring Club of B.C. has mostly been gained in the lower Fraser Valley, close to Vancouver. An exception was the flight made by Art Spence in the Club's ' Schweizer,' on aero-tow, from Langley to Pat Bay in 1950, to attend an air meet. This was a 48-mile hop each way, across 15 miles of open water in the Strait of Georgia, rather a gruelling trip. There was no particular thermal activity at Pat Bay airport on this occasion.

Every now and then, exceptional days for soaring are experienced at the Sumas field, especially in the spring and early summer, but often three or four week-ends in a row go by, with the air dull and listless. The mountains on either side seem to blanket out or interfere with thermal activity on many occasions, on days which would seem to be favourable.

It is a 50-mile drive to Sumas, and with no hangar at the field, gliders must be towed there, assembled for flying, then knocked down and towed back to the city each time. However, the mile-long paved runway with grassy fields on all sides, makes this an ideal place for training.

With more students arriving at the solo stage, quite a bit of flying was done from the smaller Langley field in 1951 using aero-tow. According to Art Seller, proprietor of Skyways Air Services, and now a member of the Club, thermals occur more often here than at Sumas, although he reported strong activity recently over the low Chilliwack mountain, between Sumas and the city of Chilliwack. In 1952 we expect to be able to do quite a bit of flying from Langley, especially as it is only 25 miles from Vancouver and we can fly evenings while daylight saving time is in effect.

As soon as additional experience is acquired, our next venture could be exploring the possibilities on the north side of the valley, around Haney. Operating from there, or other small fields near Coquitlam, using aero-tow, good opportunities should exist over the foothill slopes of the coastal mountains which enclose the valley on this side.

The greatest immediate challenge is held out, however, by the north-shore mountains of Vancouver. From Hollyburn ridge, which is back of West Vancouver, eastwards to Mount Seymour, and on to Mount Burke, back of Coquitlam, great billowing masses of clouds rise on sunny days following a rain. Most of this is probably orographic, from the onshore wind blowing north-easterly during the day. Miles of high-altitude ' slope-soaring ' thus appear possible, and what is needed is the experience to tackle it.

Few of our members are presently equipped for the above venture, and we would welcome a few Swiss pilots into our midst, who have had this kind of experience in their own mountainous country. With some peaks going up to 3,000 feet and 4,000 feet in the vicinity a great opportunity presents itself for a type of gliding not believed conveniently located close to an airfield anywhere else in Canada.

What has been considered quite feasible in the meantime are other exploratory flights from Coquitlam by aero-tow, towards the lower slopes of Mount Burke, with release at a safe altitude for the glide back should the expected updrafts not develop.

For a start in 1952, however, members might be more pleased to venture into the range land and rolling country around Princeton and Merritt, on the east side of the coastal mountains. These broad, open spaces, largely free from trees, are only about 185 miles from Vancouver, easily accessible by car on the new Hope to Princeton highway.

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(Issued under delegation by the B.G.A.)

MAY, 1952

CERTIFICATES 'A' .. 170 (14599-14769)
'B' .. 153
'C' .. 49
Silver 'C' 4
Gold 'C' 1

'B' CERTIFICATES

No.	Name.	A.T.C. School or Gliding Club.	Date taken
6119	A. C. Pond	No. 142 G.S.	20. 4.52
8701	W. P. Rixon	No. 123 G.S.	16. 3.52
9653	G. R. Dohren	No. 186 G.S.	20. 4.52
9681	B. F. Green	No. 26 G.S.	4. 5.52
10575	W. B. Conway	No. 166 G.S.	10. 5.52
10791	D. N. Cain	No. 106 G.S.	4. 5.52
11750	K. R. Biggs	No. 104 G.S.	20. 4.52
11781	J. E. Toplis	No. 123 G.S.	25. 5.52
12030	B. W. Townsend	No. 146 G.S.	27. 4.52
12096	H. Campbell	No. 2 G.S.	18. 5.52
13127	M. F. Dent	No. 22 G.S.	23. 3.52
13145	A. Savage	No. 203 G.S.	9. 3.52
13681	M. F. Hill	Cambridge U.G.C.	21. 2.52
13930	C. H. Farrow	No. 31 G.S.	11. 4.52
13414	D. W. Scott	Scharfoldendorf	25. 11.51
13992	B. W. Button	No. 104 G.S.	20. 4.52
14060	M. A. Pattison	No. 84 G.S.	9. 9.51
14209	C. G. Ricketts	No. 83 G.S.	14. 4.52
14211	W. L. L. Farman	No. 2 G.S.	13. 4.52

'B' CERTIFICATES—*cont.*

No.	*Name.*	*A.T.C. School or Gliding Club.*	*Date taken*
14364	P. J. R. Hauafin	Old Sarum G.C.	2. 4.52
14461	H. C. F. Derrick	No. 92 G.S.	27. 4.52
14600	J. T. Thomson	Luneburg G.C.	5. 1.52
14601	R. W. Robertson	No. 1 G.S.	11.11.51
14602	J. H. Chinuery	No. 146 G.S.	20. 4.52
14603	I. H. Cutbill	No. 126 G.S.	13. 4.52
14604	A. Potter	No. 31 G.S.	26. 4.52
14605	G. W. M. Thomas	No. 126 G.S.	13. 4.52
14606	J. D. Thurley	No. 122 G.S.	25. 4.52
14607	E. H. Williams	No. 45 G.S.	23. 3.52
14609	A. A. McDougall	Cambridge U.G.C.	27. 1.52
14610	P. G. Johns	Wahn G.C.	19. 4.52
14611	C. W. Bruce	No. 168 G.S.	20. 4.52
14612	L. F. Burns	No. 168 G.S.	20. 4.52
14613	C. R. Deeley	No. 122 G.S.	24. 4.52
14614	J. A. Hickniott	No. 166 G.S.	27. 4.52
14615	M. S. Turner	No. 24 G.S.	24. 2.52
14617	A. D. Burden	No. 146 G.S.	20. 4.52
14618	B. G. Bartram	No. 122 G.S.	25. 4.52
14619	W. A. Graham	No. 2 G.S.	26. 4.52
14620	W. T. J. Farmer	No. 122 G.S.	26. 4.52
14621	J. Raine	No. 122 G.S.	26. 4.52
14622	W. E. Rodwell	No. 146 G.S.	26. 4.52
14623	N. E. F. Turnbull	No. 2 G.S.	13. 4.52
14627	S. F. Overall	No. 146 G.S.	20. 4.52
14625	C. T. Jones	Deeside G.A.	16. 3.52
14626	R. E. Jones	No. 168 G.S.	29. 4.52
14629	J. H. Vincent	No. 105 G.S.	23. 3.52
14631	D. W. Collins	No. 122 G.S.	24. 4.52
14632	D. A. Wickers	No. 84 G.S.	12. 4.52
14633	P. A. Lucas	No. 188 G.S.	29. 7.51
14634	J. B. Stokes	Luneburg G.C.	19. 4.52
14635	D. L. Turnidge	No. 168 G.S.	20. 4.52
14636	D. M. A. Whyte	No. 2 G.S.	26. 4.52
14639	D. G. Harding	No. 105 G.S.	26. 4.52
14642	F. E. Saunders	No. 168 G.S.	29. 4.52
14644	B. E. Hill	No. 146 G.S.	26. 4.52
14645	M. J. Gibbons	Oxford G.C.	20. 4.52
14646	I. C. Hill	No. 104 G.S.	4. 4.52
14647	J. W. G. Pidgeon	No. 168 G.S.	20. 4.52
14648	R. Tyler	No. 104 G.S.	20. 4.52
14649	T. D. Wilson	No. 31 G.S.	27. 4.52
14650	K. C. Perelli	Southdown G.C.	13. 4.52
14651	J. A. Willis	No. 166 G.S.	11. 4.52
14652	J. E. E. Warren	No. 161 G.S.	18. 5.52
14654	K. W. Savage	Luneburg G.C.	5. 8.51
14655	N. R. G. Bennett	No. 122 G.S.	26. 4.52
14656	G. F. C. Hobbs	No. 49 G.S.	20. 4.52
14657	S. D. Morris	No. 166 G.S.	3. 5.52
14658	J. E. Padgett	No. 23 G.S.	4. 5.52
14659	S. E. Arnold	No. 44 G.S.	14. 4.52
14666	D. H. Darbishire	No. 168 G.S.	25. 4.52
14667	F. F. Durr	Fassberg G.C.	26. 8.51
14668	D. A. Pape	No. 23 G.S.	4. 5.52
14669	F. Gill	No. 161 G.S.	15. 7.51
14670	B. J. Jones	No. 45 G.S.	24. 2.52
14671	M. Norsworthy	No. 168 G.S.	20. 4.52
14672	R. McCluskey	No. 2 G.S.	13. 4.52
14675	R. E. Brundrett	No. 183 G.S.	23. 3.52
14676	B. Gray	No. 22 G.S.	20. 1.52
14677	B. S. Woodhall	No. 104 G.S.	11. 5.52
14678	J. E. A. Jenkins	No. 44 G.S.	26. 4.52
14679	A. J. R. Doyle	Epsom College G.C.	20. 4.52
14680	C. J. Callow	No. 168 G.S.	20. 4.52
14681	R. I. Craig	No. 2 G.S.	13. 4.52
14682	D. B. Freeman	No. 22 G.S.	4. 5.52
14683	J. T. Hillbeck	No. 188 G.S.	29. 7.51
14684	P. Palmer	No. 45 G.S.	13. 4.52
14685	T. Stevenson	No. 2 G.S.	13. 4.52
14686	H. D. Gardiner	No. 143 G.S.	24. 2.52
14689	D. V. Houlding	No. 168 G.S.	28. 4.52
14690	T. W. Beaney	No. 104 G.S.	13. 4.52
14694	J. M. Aucken	No. 168 G.S.	20. 4.52
14695	P. Whiting	No. 22 G.S.	6. 4.52
14696	G. L. Davies	Deeside G.A.	26. 4.52
14697	D. M. Keddie	Army G.C.	20. 4.52
14700	D. Allison	Cranwell G.C.	27. 4.52
14701	J. I. Miller	Cranwell G.C.	4. 5.52
14702	H. E. Bennett	Wahn G.C.	7. 5.52
14703	P. V. Prowse	No. 82 G.S.	16. 5.52
14704	Jean M. Weller	Surrey G.C.	15.11.50
14705	C. Torkington	No. 23 G.S.	17. 5.52
14706	J. B. Gratton	Cranwell G.C.	4. 5.52
14707	S. Haddock	No. 141 G.S.	18. 5.52
14708	M. H. Khan	Cranwell G.C.	14. 5.52
14712	T. J. Macnamara	Bristol G.C.	23. 3.52
14713	M. J. Brown	No. 105 G.S.	18. 5.52
14714	G. G. Buck	No. 23 G.S.	18. 5.52
14715	B. A. Moore	No. 105 G.S.	18. 5.52
14716	J. B. Price	No. 87 G.S.	20. 1.52
14717	G. H. Rasen	No. 22 G.S.	27. 4.52
14718	A. Ronnie	No. 2 G.S.	27. 4.52
14719	P. Swift	No. 22 G.S.	17. 4.52
14720	R. M. P. Barclay	Cranwell G.C.	16. 4.52
14721	R. T. Gibson	Cranwell G.C.	13. 4.52
14722	P. J. Jerred	No. 168 G.S.	27. 4.52

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14723	K. F. Penfold	No. 104 G.S.	14. 4.52
14724	H. G. Roberts	No. 168 G.S.	26. 4.52
14725	W. Trayuor	King Edward School	26. 4.52
14729	J. J. Mason	No. 168 G.S.	20. 4.52
14730	J. S. Pudwell	Wahn G.C.	12. 3.52
14731	M. Clubb	Cranwell G.C.	14. 4.52
14732	C. A. Fry	No. 92 G.S.	18. 5.52
14733	J. A. D. McCallum	Cranwell G.C.	14. 4.52
14734	V. G. Truluck	Cranwell G.C.	16. 4.52
14735	L. P. Morton	No. 22 G.S.	20. 4.52
14736	R. A. Goulbourne	Luneburg G.C.	4.10.50
14737	H. C. Trengrove	Wahn G.C.	12.11.51
14738	E. J. Gilbert	No. 168 G.S.	26. 4.52
14739	R. S. Haynes	No. 45 G.S.	25. 4.52
14740	D. A. Hammersley	No. 45 G.S.	25. 4.52
14741	W. R. Parker	No. 45 G.S.	25. 4.52
14742	E. T. Roach	Wahnerheide G.C.	11. 5.52
14745	C. A. Hill	No. 141 G.S.	25. 5.52
14746	M. R. Banyard	No. 123 G.S.	24. 5.52
14747	G. Heinrich	No. 2 G.S.	13. 4.52
14748	R. E. Hodson	No. 42 G.S.	13. 4.52
14749	R. M. Moon	No. 106 G.S.	18. 5.52
14750	K. W. K. Pepper	No. 23 G.S.	25. 5.52
14751	L. Stockdale	No. 68 G.S.	20. 4.52
14754	N. C. F. Bloy	No. 168 G.S.	28. 4.52
14755	D. G. Robins	No. 122 G.S.	18. 5.52
14756	E. G. Toll	No. 104 G.S.	25. 5.52
14757	C. A. Greenhill	No. 105 G.S.	24. 5.52
14759	C. J. E. Brown	No. 89 G.S.	10. 4.52
14760	S. W. Marshall	No. 2 G.S.	18. 5.52
14761	J. W. Ford	No. 89 G.S.	8. 4.52
14762	J. M. Hey	Cranwell G.C.	13. 4.52
14763	R. F. Mundy	No. 89 G.S.	8. 4.52
14764	M. J. Tattershall	No. 89 G.S.	11. 5.52
14766	D. K. W. Deadman	No. 123 G.S.	17. 5.52
14767	A. B. Watson	No. 23 G.S.	24. 5.52
14768	H. G. Currell	Derby & Lancs.	26. 4.52
14769	P. H. Bailey	Wahn G.C.	6. 4.52

'C' CERTIFICATES

1707	R. A. J. Alder	No. 123 G.S.	24. 5.52
2621	G. D. Murrell	London G.C.	20. 4.52
8852	B. Huxley	Cranwell G.C.	18. 4.52
9501	J. E. Cooper	No. 141 G.S.	20. 4.52
2591	J. M. Davidson	No. 168 G.S.	7. 5.52
2669	M. Manley	No. 168 G.S.	9. 5.52
2943	G. A. Bradshaw	No. 168 G.S.	9. 5.52
11517	N. A. Dean	No. 22 G.S.	18. 5.52
11891	D. V. Reypert	Cranwell G.C.	19. 4.52
12092	K. Hall	No. 27/31 G.S.	22. 5.52
12473	J. T. Hall	Wahn G.C.	25. 4.52
12624	E. G. Ehrhardt	No. 31 G.S.	15. 5.52
12922	G. N. Rignall	No. 22 G.S.	25. 5.52
13022	H. F. Burditt	Salisbury G.C.	13. 4.52
13149	D. G. Jardine	Derby & Lancs.	20. 4.52
13154	G. A. Cornell	No. 105 G.S.	13. 4.52
13197	D. C. Kerridge	Army G.C.	20. 4.52
13331	A. R. McKenzie	No. 105 G.S.	18. 8.51
13414	D. W. Scott	Scharfolderdorf	15. 4.52
13681	M. F. Hill	Cambridge U.G.C.	20. 3.52
13780	M. J. Moore	No. 125 G.S.	20. 4.52
14166	S. C. S. King	R.E. F.C.	22. 5.52
14167	R. Lewis	Bristol G.C.	20. 4.52
14252	E. R. Stow	Oxford G.C.	18. 5.52
14272	J. R. Dumas	Army G.C.	15. 5.52
14307	J. Emery	No. 22 G.S.	27. 4.52
14364	P. J. R. Hanafin	Old Sarum G.C.	27. 4.52
14390	J. H. S. Fox	Wahn G.C.	14. 4.52
14487	C. R. Milne	Army G.C.	20. 4.52
14522	J. P. H. Gresham	Derby & Lancs.	20. 4.52
14581	R. J. Manning	Wahn G.C.	7. 5.52
14600	J. T. Thomson	Luneburg G.C.	13. 4.52
14609	A. A. McDougall	Cambridge U.G.C.	20. 3.52
14550	K. C. Perelli	Southdown G.C.	20. 4.52
14654	K. W. Savage	Luneburg G.C.	2. 4.52
14666	D. H. Darbishire	No. 168 G.S.	28. 4.52
14667	F. F. Durr	Fassberg G.C.	16. 3.52
14678	J. E. A. Jenkins	No. 44 G.S.	18. 5.52
14679	A. J. R. Doyle	Epsom G.C.	20. 4.52
14686	H. D. Gardiner	No. 143 G.S.	13. 4.52
14689	D. V. Houlding	No. 168 G.S.	29. 4.52
14702	H. E. Bennett	Wahn G.C.	14. 5.52
14703	P. V. Prowse	No. 82 G.S.	17. 5.52
14704	Jean M. Weller	Surrey G.C.	27. 3.52
14712	T. J. Macnamara	Bristol G.C.	20. 4.52
14730	J. S. Pudwell	Wahn G.C.	26. 4.52
14736	R. A. Goulbourne	Luneburg G.C.	3. 6.51
14737	H. C. Trengove	Wahn G.C.	18. 5.52
14769	P. H. Bailey	Wahn G.C.	14. 5.52

SILVER 'C'

371	A. H. Back		7. 5.52
372	Margaret Freestone		11. 5.52
373	R. Rutherford		27. 4.52
374	Grace Gay		27. 5.52

GOLD 'C'

9	H. C. N. Goodhart		23. 4.52

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CHEQUE/POSTAL ORDER for ☐ **enclosed herewith.**

Do you know your airfields?



24

Recognise this airfield? It's No. 24 in this series of puzzle photographs. You'll find the answer below on the right.★

If you are about to fly a long distance, remember Shell and BP Aviation Service will give you all the information you require to plan your fuelling in advance.

The Shell and BP Aviation Service operates at twenty-six of the larger aerodromes in Britain, and Shell and BP fuels are available at most of the other civilian airfields.

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