GLIDING

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GLIDING

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CONTENTS

TITLE	AUTHOR	PAGE
1954 International Championships	*Chairman B.G.A.*	49
1953 National Gliding Championships		50
Gliding Records		51
The British Glidermanship Association	*P. A. Wills*	52
Impressions of American Gliding	*David Hendry*	53
First across the Apennines	*Adriano Mantelli*	55
The Slingsby Skylark		56
Gold in the Prefect	*J. C. Riddell*	58
Who Soared First ?	*A. E. Slater*	59
First Sustained Soaring Flight	*A.H.*	60
A Second Kind of Wave	*R. S. Scorer*	61
Diamond Goal	*Tony Goodhart*	62
How Not To Do It	*Groucho*	64
Essay Competition		65
Gliding Certificates		66
Christchurch to Dunedin	*S. H. Georgeson*	67
A.T.C. Gliding : The Last Three Years	*H. Neubroch*	70
Camphill to Sittingbourne	*Bernard Thomas*	72
The Slingsby Trophy		73
Easter Task-Flying at Long Mynd	*Stanley Jones*	74
Long Mynd to Camphill	*P. A. Wills*	76
To Polebrook	*A. L. L. Alexander*	77
To Desford	*Barbara Alexander*	77
To Cranfield	*Noel Anson*	78
Weather at the Long Mynd—Easter, 1953	*R. S. Scorer*	78
B.G.A. News		79
Riding the Unseen Wave	*O. W. Neumark*	80
Correspondence		82
Clubs & Associations		84

Cover Photograph.—The "Canguro", the first sailplane to cross the Apennines. The pilot, Adriano Mantelli, describes the flight on page 55.

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1954 World Gliding Championships

To Be Held in Great Britain

THE Fédération Aéronautique Internationale has delegated to the United Kingdom the task of organising the 1954 World Gliding Championships. The Chairman of the British Gliding Association has therefore asked us to announce that the following *tentative* arrangements are being made:

1.—The Championships will be held at Camphill, Great Hucklow, Derbyshire, the site of the Derbyshire and Lancashire Gliding Club and of the 1953 British National Championships.

2.—Assembly date: 19th July. Championship flying: 20th July–2nd August. Prizegiving: 3rd August.

3.—Entries will be limited to 40 aircraft, of which not more than 25 aircraft will be in either the single-seater or multi-seater classes.

4.—Teams will consist of pilot and not more than 3 helpers, with a team manager. Entry fees: Pilots, £20; others £10.

5.—Teams will be accommodated in a fleet of caravans, on the site. Meals, etc., will be available on the site. The entry fees will cover the cost of both accommodation and meals. Launches will be by winch. Retrieving will be by trailer.

6.—Maximum entries will be 5 aircraft per country, but if the total number of entries exceed 40 aircraft, this maximum will be reduced as necessary. The earliest possible advice as to the expected number of entries from each participating nation will be required, so that last-minute reductions may be avoided.

7.—It is hoped to have available a limited number of sailplanes, (probably mostly Olympias), with trailers, for the use of entrants of the more distant nations, when the expense of bringing their own machines proves to be excessive. Since these aircraft will be lent by clubs or private owners, it will be necessary to insure them fully against accident. A tentative quotation of 1½ per cent. has been received, with an excess of £10 per machine. Consequently the cost for an Olympia would approximate £20 plus a deposit of £10 to cover the excess. Arrangements for the hire of towing cars (if required) have yet to be considered.

8.—Camphill will be open for practice for 7 or 8 days before the Championships; and as many pilots may be rusty in their hill-soaring practice, and some preliminary experience of the landing ground and surrounding country is considered highly desirable, it is hoped that all competitors will arrive in time to get in some practice. Preliminary notice of this is essential from each team.

9.—A meeting of OSTIV will take place at the same time, probably in Buxton.

10.—Official invitations will, of course, be sent out in due time by the F.A.I. In the meantime, we are determined to live up to the high standard set in previous years by Switzerland, Sweden and Spain. We welcome in advance our gliding friends in all nations and hope to see them here in 1954.

1953 National Gliding Championships

NATIONAL gliding contests have been organized by the British Gliding Association annually since 1930, except during the years 1940-46, due to the war, and in 1948 and 1952, when efforts were concentrated on sending teams abroad to compete internationally. The contests have been staged at the Derbyshire and Lancashire Gliding Club three times before the war and three times since, so this is the seventh occasion.

The first national contest to be held at the Club was in 1936, the year of its foundation. Two cross-country flights only were made: one of 48 miles by P. A. Wills and one of 12 miles by E. J. Furlong. In 1947 there were 43 cross-country flights totalling 1,489 miles, and a marking system was introduced for the first time, based on that used at the International Contest that year. In 1939, cross-country mileage was 1,840, in spite of more difficult weather, and C. Nicholson flew 160 miles to Southend.

In 1949, the first post-war year to see the Club again organizing the Contests, the weather was unusually poor, but cross-country flying reached a total of 6,050 miles at the 1950 contest, and 7,208 miles in 1951, when Lorne Welch made the longest flight—190 miles to Manston in Kent. An innovation was the setting of a definite task each day, which every competitor had to attempt.

Another innovation in 1951 was the division of the National Championships into two classes: teams of two or more pilots to one glider, and individual pilots each of whom flies one glider all the time.

Marking System

This year there are further changes based on the marking used at last year's international contest in Spain.

Formerly, the best flight on an easy day would win many more marks than the best one on a difficult day, although the latter might well have been a more creditable performance. To even things out, the best pilot of the day is now to be given 100 "points" and everyone else is given points in proportion. Thus, a pilot's score for each day is not the actual number of marks earned, but his percentage of the best pilot's marks for that day.

Another adjustment, which has been made also in previous contests, is designed to give competitors credit for their achievement irrespective of the type of machine they fly. Sailplanes are divided into three handicap categories according to aspect ratio: those with aspect ratios of 17 and above (i.e. the narrowest wings in proportion to their span) are "scratch," those between 17 and 14 get 10 per cent bonus, and those below 14 get 33⅓ per cent bonus on the marks earned.

DAILY TASK.—A task will be set by the organizers before each day's flying begins. Tasks are of three kinds:—

(1) Flight to a goal announced by the organizers. Distances (projected along the line to the goal) will, if over 15 miles, earn 1 mark per mile, with nothing extra for going beyond the goal. In addition, speed marks will be awarded to those who reach the goal, at the rate of 5 per cent of the distance marks per m.p.h. above a certain "target speed". Target speed is 20 per cent below that of the slowest machine for all aircraft in its category; target speeds for the three categories are in the proportion 7:6:4.

(2) Flight to, or to and from, a goal predetermined by the pilot. The full declared distance earns one mark per mile; if the flight falls short of this, it is marked in proportion to the square of the distance (e.g. a pilot going half his declared distance gets only a quarter of the marks he would earn for the whole distance).

(3) Straight distance flight in a direction announced by the organizers. This is marked as for distance in Task 1, but without bonus for speed.

In addition to Championship awards, a Daily Prize will be offered, the type of performance being announced before each day's flying.

NOTE.—Questions of interpretation of the rules will be decided on the official wording, not that given above.

Gliding Records

British National Records

(May be set up by a British pilot in any part of the world).

Single Seaters

DISTANCE : A. W. Bedford, 257 miles.

GAIN OF HEIGHT : A. W. Bedford, 19,120 feet.

ABSOLUTE ALTITUDE : P. A. Wills, 22,430 feet (in Spain).

GOAL FLIGHT : A. W. Bedford, 257 miles.

GOAL AND RETURN : P. A. Wills, 163 miles.

SPEED OVER A 100 KM TRIANGLE : P.A. Wills, 29.21 m.p.h. (in Switzerland).

DURATION : A. N. Young, 15 hrs. 47 mins.

Multi Seaters

DISTANCE : K. L. Hurst and K. Simpson, 138.9 miles (in Germany).

GAIN OF HEIGHT : R. Austin and A. W. Bedford, 12,750 feet.

GOAL FLIGHT : C. Nicholson and G. P. Blake, 118.2 miles.

GOAL AND RETURN : J. W. S. Pringle and J. Grantham, 77.2 miles.

DURATION : W. B. Murray and J. S. Sproule, 22 hrs. 14 mins.

U.K. Local Records

(May be set up by a pilot of any nationality starting the flight in the United Kingdom).

Some of these are the same as those given above, but the following differ from them or have no National counterpart :—

Single Seaters

ABSOLUTE ALTITUDE : A. W. Bedford, 21,340 feet.

SPEED OVER A 100 KM TRIANGLE : G A. J. Goodhart, 22.16 m.p.h.

SPEED TO A 100-KM. GOAL : P. A. Wills, 44 m.p.h.

SPEED TO A 200-KM. and 300-KM. GOAL : G. A. J. Goodhart, 31 m.p.h.

DURATION : L. C. Marmol (Czechoslovakian), 33 hrs. 5 mins.

Multi-Seaters

DISTANCE : K. Haberstich and K. Fahrländer (Swiss), 126 miles.

International Records

Single-Seaters

DURATION : C. Atger (France), 56 hrs. 15 mins.

DISTANCE : R. H. Johnson (U.S.A.), 535.17 miles.

GOAL AND RETURN : W. H. Coverdale (U.S.A.), 260.34 miles.

GOAL FLIGHT : V. I. Efimenko (U.S.S.R.), 395.74 miles.

ABSOLUTE ALTITUDE : W. S. Ivans (U.S.A.), 42,100 ft.

GAIN OF HEIGHT : W. S. Ivans (U.S.A.), 29,100 ft.

SPEED OVER 100-KM. TRIANGLE : R. H. Johnson (U.S.A.), 52.766 m.p.h.

Multi-Seaters

DURATION : A. Carraz and Jean Branswyck (France), 53 hrs. 4 mins.

DISTANCE : I. Kartachev and P. Savtzov (U.S.S.R.), 385.09 miles.

GOAL AND RETURN : E. Dommisse and S. J. Barker (S. Africa), 271.9 miles.

GOAL FLIGHT : A. Pawlikiewicz and Z. Pakielewicz (Poland), 317.84 miles.

ABSOLUTE ALTITUDE : L. E. Edgar and H. E. Klieforth (U.S.A.), 44,255 ft.

GAIN OF HEIGHT : L. E. Edgar and H. E. Klieforth (U.S.A.), 34,426 ft.

SPEED OVER 100-KM. TRIANGLE : E. G. Haase and R. Picchio (Germany) 49.920 m.p.h.

The British Glidermanship Association.

With acknowledgments to Mr. Stephen Potter

FIRED by an article in the Surrey Club's *Lasham Newsletter*, which produced a strong public demand, the British Glidermanship Association (B. Glp. Ass. for short) has been formed.

The purpose of the new body is, of course, to train its members in the art of keeping One Up on all the non-members, and indeed on all other members as well if they can.

As a first step, a subsidiary Company has been formed, called Glidermanship Accessories Ltd., to design, construct, or fiddle any devices suitable to forward the purposes of the Association's members. The following are examples of the wares we have to offer.

1.—EXOTIC BADGES. A large collection of miscellaneous incomprehensible badges, which can be worn as the A's, B's, C's, Silver, Gold, Diamond or worse badges of practically unknown countries : 5s. 6d. each or, if scratched and tarnished on our patent ageing machine, to simulate much long use, 10s. 6d. each.

Very effective when making one's first entry into the bar of a new gliding club. One of our experienced members writes : " I cannot praise your badges sufficiently highly. I was stood five rounds of drink in succession on my first visit to the Much Bungeing Gliding Club on the strength of my Montenegran Diamond Badge, which I understand from you is actually a slightly modified button from the tunic of an Armenian Boy Scout. The empty sockets from which the Diamonds were understood to have fallen from sheer old age were particularly admired."

2.—DUMMY INSTRUMENT FACES. Complete with rear rubber suckers for rapid adhesion to Instrument Boards. With these invaluable accessories the most poverty-stricken pilot can impress all and sundry with his abilities.

After a sufficient number of admirers have taken in his well-equipped instrument board, a good ploy is to do a short flight, out of sight ; and during the night change the Faces around in some marked way. When the aforesaid admirers notice the re-shuffle, say airily : " Well, of course, I ought to have spotted it before but I found in my cu-nim flight yesterday that it really is important to be able to focus all at once the two variometers, the artificial horizon, A.S.I. and the gyroscopic synchroscope whilst still leaving one's hands free for the V.H.F. transceiver and the oxygen tap."

Pilotmanship.—The basic gambit of any true Gliderman is, of course, to convey the impression of being a pilot of immense experience *without necessarily having ever left the ground.*

Our Chair of Pilotmanship is held by Booth-Trumpington, who is reputed to have become Chairman of the Flying Committee of a well-known club, having actually only once been airborne, and that in error and for a comparatively short time, when he failed to let go quickly enough of a wing-tip he was holding prior to a launch in a high wind.

One of his favourite ploys, much admired by the elite, follows on from any discussion on bird-flight. He intervenes :—

" That reminds me of the time, more years ago than I care to remember, when I took the Chieftain of Ngong— a distinguished old boy he was, too, in his flowing robes—for a ride in the two-seater. We were lucky enough to find a thermal, and as I circled up he cried ecstatically, in his broken English : ' Wonderful ! In my country only the Mtara-birds do this !' As a matter of fact, I could have told him that the Mtara-birds had actually picked up the idea from me, when I had gone out to start gliding up in his interesting little country ten years before. But I didn't say so ; I always think one must be so careful with these foreign Johnnies not to risk giving any impression of shooting a line. Don't you agree ?"

Technicianmanship.—A course of exceptional value. H. Kranze, one of our most brilliant graduates, although in fact he cannot even read accurately his gas-meter, has been known to convince a roomful of people, *including Frank Irving and Dr. R. S. Scorer*, that he understood every word of even the most advanced articles written by Frank Irving and Dr. R. S. Scorer.

Subjects for further discussion are legion. Thus :—Should we permit the B.G.A. to

affiliate ? What, if any, are the basic rules of Winchdriverships ? A fruitful field for the research worker obviously lies in the investigation of ploys for retrievermen and retrieverwomen, followed by—even more vital—counter-ploys for the retrievedman, who, without special training, might well be thought to be in a most unenviable position of natural one-down-ness, except of course, on the rare occasion (if ever) when he has actually reached his goal.

It is hoped that these brief notes, indicating the general scope of our great science and subject, will stimulate further research which will duly be reported by all members, who are asked to write to this publication, which has generously placed its pages at our disposal.

PHILIP WILLS,
Chairman, B.Glp.Ass.

Impressions of American Gliding

by David Hendry

A SIX-MONTH visit to the U.S.A. in the early part of 1952 provided an opportunity to see a little of the gliding movement there. Because of limitations of time and distance and the necessity to earn dollars, only four sites could be visited.

Warm Springs Airport, in the San Francisco Bay area, is a grass field at the foot of a 4,000-ft. range of hills. Aero-tows are usual although a few auto-tow launches were seen. Thermal and slope soaring are possible throughout the year.

El Mirage site, at the south end of the Mojave Desert in Southern California, consists of an airfield with paved runways alongside the bed of a dry salt lake. This lake, which measures 5 miles by 1 mile, besides providing thermals can be used for auto-tow launching. Excellent thermals abound in summer and most of them are visible because of their high dust content.

Bishop Airfield, 280 miles north-east of Los Angeles, lies in the 20-miles-wide Owens Valley at an elevation of 4,000 ft. between the parallel ranges of the 14,000-ft. Sierra Nevada and Inyo Mountains. Launches are almost solely by aero-tow and the winter season provides the well known Sierra Wave, while excellent thermal soaring is possible in summer.

Harris Hill, Elmira, N.Y. is proud of the distinction of being the home of American Gliding. It overlooks the fertile Chemung Valley and provides slope-soaring throughout the year. Launches are by V8 winch, although aero-tows can be made if necessary. Aero-tows are always available from Elmira Airfield in the valley.

The organisation is different in many respects from what is usual in this country. Clubs and Associations exist, but appear to own little or no equipment. Most members are private owners or partners in a syndicate and they make their own arrangements as to when, how and where they will fly. The greater proportion of launches are by aero-tow, so flying may not take place at a gliding site but at one of the many aerodromes where there is an aeroplane fitted with a towing hook. The clubs and associations arrange flying meetings which are usually well attended, especially if the prizes —cash and kind—are attractive.

The training problems for a newcomer to the sport are considerable. Few clubs have training schemes but in some areas gliding instruction is provided commercially. At El Mirage a school is run by Gus Breigleb where ab-initios can learn power-flying or gliding. A similar school is available at Elmira airfield. All instruction is by aero-tow launch, and as the staff are professionals, the cost is considerable. Having learned to fly, it is necessary to purchase a share in a glider.

Some clubs realise the necessity of providing training facilities and gliders which may be hired at a reasonable cost. For example, the Southern California Soaring Association have started work on a hangar and clubrooms at El Mirage and the necessary equipment will be obtained. The S.C.S.A. already have two Pratt-Read two-seat sailplanes, but they are the specially



Top left: Pat Molloy flying a 1-23 at last year's American Contests in Texas. Bottom left: Ed Minghelli (centre) with his home-built "Prue 215" on El Mirage Dry Lake, California. Irving Prue, designer, on left. Top right: Laister-Kaufman two-seater at El Mirage. Bottom right: L-K being rigged at Bishop, California.

equipped machines which carried out the high-altitude flying in the Sierra Wave Project.

The majority of gliders in use in America just now were built during the war as trainers. With the exception of the Pratt-Read, which is side-by-side, they are fully enclosed tandem two-seaters of medium performance. Their construction is of steel tube, fabric-covered, although some have wooden wings. They are heavy machines, more suited to aero-tow than winch or auto launching.

A number of pre-war machines, some of foreign make, are still in use, while prototype machines are also to be seen. Post-war machines are not used in great numbers because of their relatively high cost. As an illustration, surplus gliders could be bought for 600 dollars, although they usually required some minor repairs and re-covering. Schweizer 1-23 all-metal high-performance sailplanes cost about 4,000 dollars. Metal sailplanes are favoured because of the low maintenance costs in climates which are sometimes extreme. Repairs are usually done by the owners, but airworthiness requirements are maintained by inspectors approved by the equivalent of our A.R.B. Some interesting modifications have been made to the war-time gliders to improve their efficiency and make them more suitable for sporting gliding. Many Laister Kauffmans are now flying as single-seaters and appear to have a good performance.

The gliding movement in the U.S.A. is at present going through a phase which is unlikely to recur. It expanded rapidly after 1945 as war-surplus gliders came on to the market at very low prices. No further machines from this source will be available, and it seems likely that as the number of these machines diminishes because of normal wastage, the sport will contract to some extent. The difficulties of pilot training also acts as a deterrent to new members, and it would seem that some form of organisation such as we have in this country will be necessary if the sport is to remain healthy or expand. A quite real difficulty in this respect is the individualistic outlook of the average American. However, there are many natural advantages available to the American glider pilot such as good transportation, numerous airfields, easy and pleasant soaring conditions. These combine to make the sport more attractive than in our crowded and weather-bound island.

First Across the Apennines

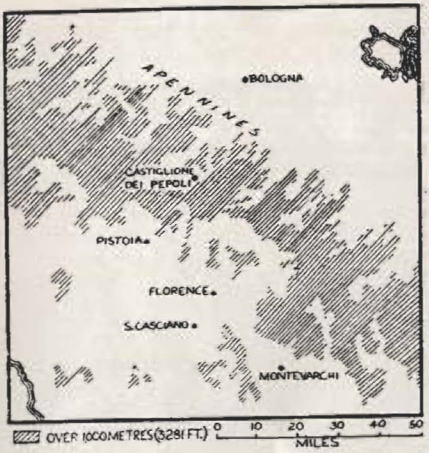
by Adriano Mantelli

FROM the airport of Peretola, Florence, on 22nd April, 1953, I took off at 13.10 with my beloved Canguro in tow of a 65 h.p. Piper Cub piloted by the ever youthful Vasco Magrini.

At 13.18 I released at 300 metres above ground level and began a fatiguing climb in a weak and capricious thermal. At 1,300 metres the conditions improved and I rose rapidly to 2,300 metres (7,500 ft.). Then for about two hours I was able to traverse comfortably as far as Montevarchi to the south-east and Pistoia to the north-west, passing over S. Casciano.

In the meantime there formed a most beautiful street of cumuli along the line Monte Morello to Castiglione dei Pepoli, and I decided without delay to cross the Apennines. The first part of the flight was extremely easy, with the variometer at zero and 120 kms. of air speed (75 m.p.h.). In a little over half an hour I was at Castiglione dei Pepoli with 2,300 metres of height.

As I foresaw, however, conditions on the other side changed completely. Clear sky, contrary wind and considerable loss of height—so much so that, notwithstanding my altitude and the known gliding angle of the Canguro, I was doubtful of being able to reach the airport of Bologna which I had declared as my goal. At Sasso Marconi only 500 metres of altitude remained. I was within reach of the airport, but without that margin of safety which the true soaring pilot has learned to respect in the interests of safe flying.



I therefore selected a convenient little field, but while turning to plan the approach I detected a zone of weak lift. I concentrated in a last effort and was carried up to 1,300 metres (4,300 ft.), with which I arrived like a "gran signor" over the airport. A few aerobatics to stretch my limbs, and at 16.20 the faithful Canguro rubbed its skid happily on the airport of Borgo Panigale, Bologna.



The "Canguro" at the Madrid International Contest, where Mr. Mantelli came 4th out of 17 in the two-seater class.—*Courtesy of "The Aeroplane".*

The Slingsby Skylark

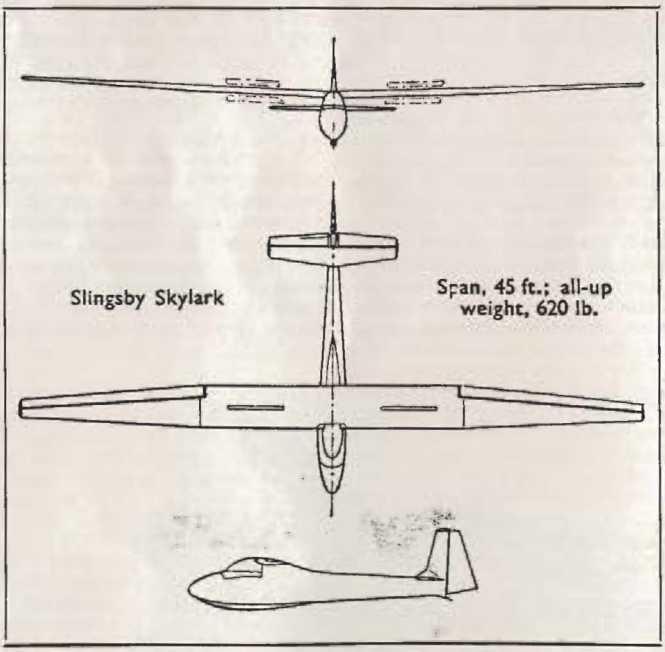
A NEW high-performance sailplane of 45-ft. span (13.7 metres), the Skylark, has been designed and built by Slingsby Sailplanes Ltd., in expectation of creating a market for a medium-span machine of good performance and low price, suitable for gliding clubs and organisations in all parts of the world. This has been done by incorporating the qualities of the Slingsby Sky, with which the 1952 World Championships were won, with new methods of production.

The provisional price, with a standard finish, omitting instruments, is expected to be under £700 *ex* works.

The wing is completely covered with a plywood skin, resin-bonded and waterproof, attached to ribs which are profiled to within fine limits. The resulting smooth surface enables laminar flow to be maintained over a high proportion of the wing chord. The wing divides into three portions, the centre portion being slightly shorter than the fuselage-plus-tail so that the dismantled machine can be transported in a trailer no longer than its fuselage.

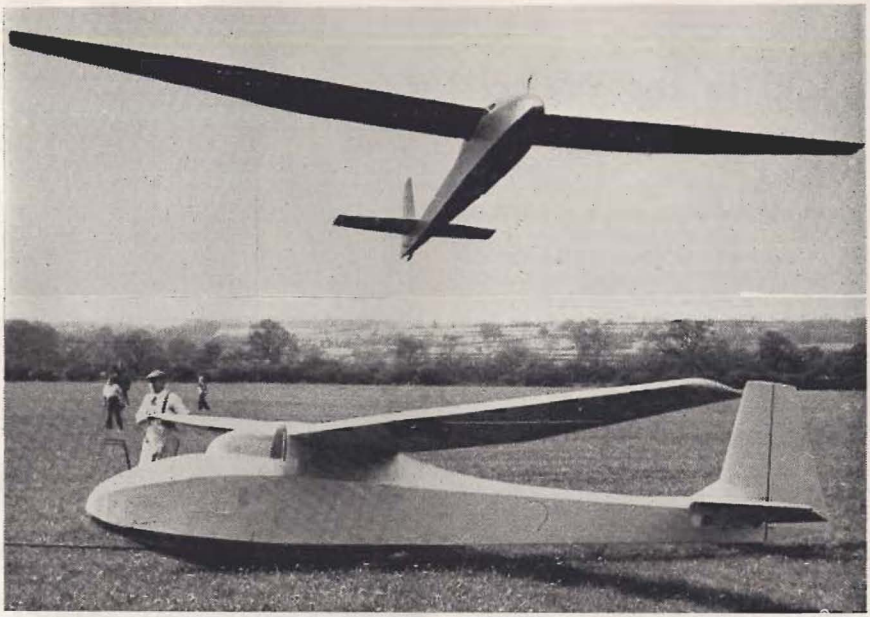
The attachment of this centre portion to the fuselage is by two pins inserted from the front of the cockpit in the horizontal plane and picking up the attachment fittings on the main bulkheads. The outboard wing sections are attached to the centre portion by two pins in the vertical plane. Assembly and dismantling time are thus saved.

A one-piece blown Perspex hood is fitted over a roomy cockpit. Eventually it is intended to make the nose cap and the upper part of the cockpit and coupé of



The Production Model of the "Skylark"

—Courtesy "The Aeroplane"



The prototype "Skylark"

moulded Fibreglass and Marco Resin—a lightweight plastic moulding of considerable strength. Flying controls are arranged according to normal practice. The control column rises from the floor in a canvas sleeve. An Ottfur safety type of quick release, positioned about the centre of gravity, is controlled from a yellow knob under the instrument panel on the port side. Also on the port side, just in front of the seat, is the operating lever for the scissor-type dive-brakes. On the starboard side of the cockpit is the elevator trimming lever. Instruments are : air speed indicator, altimeter, electrical turn-and-slip indicator and Cobb-Slater variometer. Special instruments and panel can be fitted to order. There is room in the fuselage neck for barographs, etc., and removal of the parachute box gives access to batteries.

The fuselage shown in the accompanying photographs is that of the prototype machine ; aft of the cockpit, it is fabric-covered over a diagonal-braced wood framework as far as the tailplane attachment frames and fin, which are plywood-covered. But the fuselage of the production model, shown in the accompanying drawings, will be of rounded section.

To reduce manufacturing costs and improve performance, a landing wheel has been omitted, but a jettisonable dolly can be supplied to special order. The main skid is sprung with rubber shock-absorbers and completely faired in.

DIMENSIONS.—Span, 45 ft.; length, 20 ft. 11¾ ins. Wing area, 113 sq. ft.; aspect ratio, 17.9. Area of ailerons, 12.4 sq. ft.; tailplane and elevator horn, 17.0 sq. ft.; fin and rudder, 11 sq. ft. Tare weight, 400 lbs.; maximum all-up weight, 620 lbs.

ESTIMATED PERFORMANCE.—Best gliding angle, 1 in 27.3 at 46.3 m.p.h.; minimum sinking speed, 2.34 ft./sec. at 41.6 m.p.h.; minimum flying speed, 37.4 m.p.h. Flying speed at 6 ft./sec. sink : 74.5 m.p.h.

The prototype Skylark is at present at Lasham, where it will be flown by No. 1 Test Group of the British Gliding Association, consisting of Lorne Welch, Ann Douglas, David Ince, Frank Irving and Hugh Kendall. Walter Kahn writes, after the first test flights during Whitsun week-end, that " although it is too early yet to say anything about the machine, it is very obvious that it handles remarkably well."

Gold in the Prefect

by J. C. Riddell

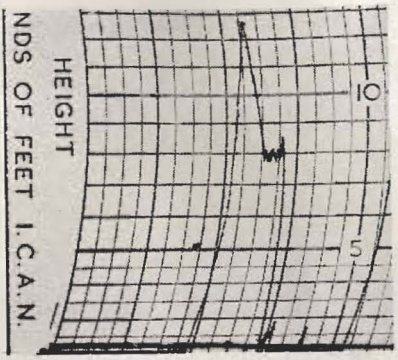
THE most lasting impression of this flight is that I was extremely lucky. I had been staying at the Long Mynd for the Cambridge Club's Easter camp and I stayed on to fly the Prefect in the Easter Rally organised by the Midland Club.

Good Friday was the practice day. My co-pilots had been able to soar and George Whitfield had climbed to 8,000 ft. a.s.l. I had my second launch just after he had landed, came straight down and had another winch launch some 20 minutes later. This time I found reduced sink and some very slight lift on the downwind leg of the circuit, but soon I was down to 300 ft. over the road to the north of the clubhouse. I was determined to stay in the air and, as a last resort, flew over to the area of burnt bracken that had given some good thermals before.

At 200 ft. above this burnt bracken I found an area of no sink and slight lift. This lift increased and I was soon rising at 20 ft. per second and more. The ground fell away very quickly and I had that feeling of exhilaration that is the reward of soaring. The lift was not very turbulent so I flew the Prefect at 38 m.p.h. indicated with, I suppose, some 30 degrees of bank.

I switched on the electric turn and bank 200 ft. below cloud base, which was about 4,500 ft. above the Mynd, then circled up to 7,500 ft. above the Mynd when the air-speed increased, the turn indicator went hard over to the left and the ball went over to the extreme right. This, I supposed, was a spiral dive. I applied the usual spin recovery. I went into four spiral dives before realizing that I was not correcting the turn indicator properly and was increasing my angle of bank instead of keeping it steady with the stick in the centre.

Now I had made friends with the Prefect again, the lift seemed good, and although I felt rather shaken by these antics it would have been foolish not to go on. I was still going up at 15 feet per second in very smooth lift. The altimeter was reading 10,000 ft. above the Mynd when the A.S.I. stopped working and I had to rely on the whistle of the aircraft and the feel of the controls for the indication of my speed.



Shortly after the A.S.I. had left me the constant energy variometer became very sluggish indeed and soon stopped working altogether. It was very cold, my reactions were slow, and the aircraft was heavily iced up. It was time to leave.

I had two shots to leave the cloud and the second one brought me out. I was still over the Mynd, some three miles north-east of the club. The Prefect was carrying a lot of ice and was coming down quickly, and as I was extremely cold I decided not to fly away, though wanting the distance leg for Silver C. The spiral dives in the cloud had intrigued me so I tried one in clear air. The downhill run back to the club took some 20 minutes and I visited Church Stretton and enjoyed the spectacle of Olympias from above. I had no idea when I landed that I had qualified for Gold C gain of height, but this has been confirmed.

Maximum height above sea level was 12,000 ft. and gain of height was 10,300 ft. I was in the air for 80 minutes.

My conclusions from this flight are that the spiral dive is only serious if the speed builds up, and if the instruments are understood, it is not difficult to recover in cloud. I made the mistake that I did not know how to correct the turn and bank. I discovered the obvious, and that is to move the stick against the turn needle.

Icing was not severe in this big cumulus and I met no hail. I was fortunate that the brakes were not frozen in at any time, though I opened them occasionally to make sure they did not stick.

A thought for the next good day : It is very cold at 12,000 feet.

Who Soared First ?

by A. E. Slater

JUST a year ago, GLIDING published an article written by Peter Brooks for the *Redhill Newsletter*, in which he claimed that the first soaring flight in history was that of E. C. Gordon England over Amberley Mount, Sussex, in a Weiss tailless glider, on 27th June, 1909. Gordon England rose about 40 feet in the slope lift and then glided to a landing half a mile away, after being in the air 58 seconds. "As far as is known, this" Peter Brooks claimed, "was the first soaring flight with a clearly defined gain in height ever made."

But Derek G. Reid has written from Australia to "put forward the Wright brothers' claim to have made the first soaring flight." He quotes Wilbur Wright as saying, in 1901: ". . . . in a wind blowing 26 miles per hour up a steep hill, we made glides in which the rate of descent was less than two feet per second. And during the larger part of this time, while the machine remained exactly in the ascending current, there was no descent at all, but even a slight rise." And in 1908, referring to their 1902 glider: "With this machine, in the autumn of 1903, we made a number of flights in which we remained in the air for over a minute, often soaring for a considerable time in one spot, without any descent at all."

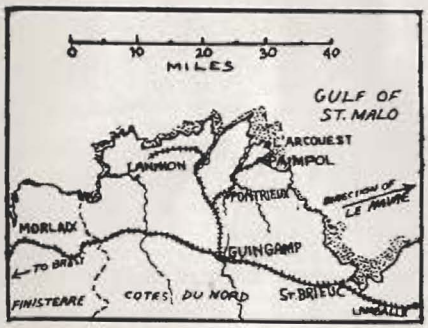
Evidently it depends what you mean by soaring. Peter Brooks demands a "clearly defined gain in height," whereas Derek Reid is satisfied as long as height is not lost. But, in any case, Otto Lilienthal wrote of his 1895 biplane glider: "I often reach positions in the air which are much higher than my starting point. At the climax of such a line of flight, I sometimes come to a standstill for some time . . . ." However, Derek Reid considers that, although "one of the earlier hang-glider experimenters may have been lifted temporarily in a thermal, this could hardly be said to be sustained or controlled soaring."

So we are finally down to the question of duration, and it seems to me that the real criterion is not whether the experimenter gained height at all, but whether he demonstrated his ability to hold the height he had gained, more or less indefinitely. The "C" gliding certificate, which was invented for this very purpose, demands a soaring flight of at least 5 minutes above the starting level. Let us accept this figure, therefore, and tackle the question of who first kept a glider up for five minutes.

Orville Wright's flight of 9 minutes 45 seconds over the Kitty Hawk sand dunes, on 24th October, 1911, is universally accepted as the first prolonged soaring flight. Actually it was the last but one of 25 flights made on the same day, another of which lasted 7¼ minutes.

Curiously enough, *Flight* of 1911 makes no mention of this flight, but does refer to a report in a French newspaper for 7th September, 1909, of a glider flight of 5 minutes by a M. Raymond Hekking at Larcouet on the coast of Brittany (see map below, which calls the place l'Arcouest). Mme. Geneviève Gautier has kindly looked it up for me in the Bibliothèque Nationale, and it is reproduced on the following page, together with a photostat of an accompanying photograph, for which I am indebted to the Scientific Service of the French Embassy.

While the evidence for the exact figure of 5 minutes seems inconclusive, I think GLIDING's reproduction of the full story, for the first time since 1909, may rightfully be regarded as a "scoop."



First Sustained Soaring Flight ?

Le Petit Havre, Mardi 7 Septembre, 1909. (Bureau du journal: 112 Bd de Strasbourg)

UN AVIATEUR HAVRAIS

En vol plané.

UN jeune aviateur, dont le nom est connu au Havre, effectue actuellement près de Paimpol d'intéressantes expériences en vol plané.

Né au Havre, Monsieur Raymond Hekking est le fils du regretté violoniste, Gérard Hekking, artiste dont le Havre a conservé le souvenir. Il vient de faire dans le petit village de Larcouet des essais très heureux avec un aéroplane dont il est l'inventeur.

Cette machine est du type biplan. Elle mesure 7 mètres d'envergure et représente 25m². Elle est a queue cellullaire.

Les habitants du petit village n'ont pas eté peu surpris, quand, dans les premiers jours d'Août ils ont vu arriver une énorme caisse renfermant l'aéroplane. Ils le furent encore plus lorsqu'ils assisterent aux premiers vols. Monsieur Hekking a pleinement réussi. Il a pu s'élever *sans moteur* à 25 mètres d'altitude et s'y maintenir pendant cinq minutes.

Après plusieurs envolées, un coup de vent ayant causé des avaries à l'appareil, il fallut renoncer à continuer, car ce petit village ne renfermait pas d'élements nécessaires pour la réparation.

Raymond Hekking se dispose à construire un biplan avec moteur qui lui permettra, nous l'espérons, à faire d'ici peu de nouvelles envolées.

Et l'on apprendra avec intérêt que le jeune aviateur viendra au Havre effectuer ses premières expérience avec son nouvel appareil.

Nous exposons dans nos vitrines une photo montrant Monsieur Hekking en plein vol.

A.H.

Translation

Le Petit Havre,

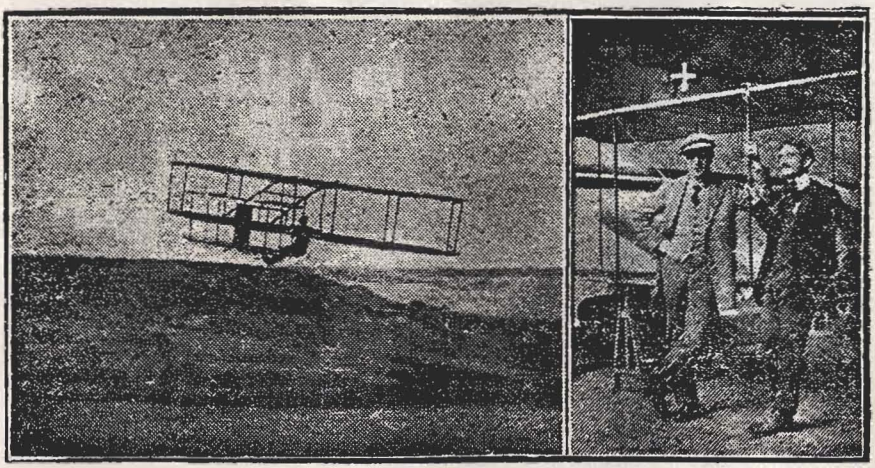
Tuesday, 7th September, 1909.

AN AVIATOR FROM LE HAVRE

In Gliding Flight

A young airman, whose name is well known in Le Havre, is now making interesting gliding experiments near Paimpol.

Monsieur Raymond Hekking, who was born in Le Havre, is the son of the late lamented violinist Gerard Hekking, an



artiste still remembered here. He has just achieved, near the small village of Larcouet, some very successful trials with an aeroplane he himself invented.

This machine is of biplane type. Its span measures 7 metres (23 feet) and its surface is 25 square metres (269 sq. ft.) Its tail is cellular.

The inhabitants of the small village were not a little surprised when, in the first days of August, they saw the huge crate arriving at the station with the aeroplane in it. They were still more so, when they watched the first flights. Mons. Hekking has fully succeeded. He effectively rose 25 metres (80 ft.) high *without engine* and remained five minutes at this altitude.

After several take-offs, a gust of wind having damaged the machine, they were obliged to stop, as no proper repair facilities were to be found in this small village. Raymond Hekking is considering the construction of a biplane machine with engine which will enable him, as we hope, to achieve further flights in the near future.

We would be pleased to hear that the young airman intends coming to Le Havre to test his new machine.

We are now showing in our shop-window a photograph of Monsieur Hekking in full flight.

A. H.

A Second Kind of Wave

by R. S. Scorer

(Imperial College of Science)

In order that the wave motion produced by a hill shall not reach up to infinity, it has been supposed that some mechanism causes the amplitude of the waves to decrease with height above some level, often around 10,000 ft. but frequently much higher or lower. Theory suggests that either an increase of wind with height or a considerable decrease in stability upwards can provide the mechanism, and a crude method of calculating these effects has been given (1)

As the description of those methods was being published, a wave was soared in at the Long Mynd on 18th March in an easterly wind which decreased with height to practically nothing around 10,000 ft., and the phenomenon was repeated again on 19th April!

Instead of having a layer in the airstream in which the wave motion decreases with height so that at the top of it the motion is imperceptible and does not affect the air above, the waves can be confined to the lower layers by a layer that is stationary ; for since it is not in motion it cannot indulge in waves nor communicate them to the layers above it. This seems simple enough but who would have expected it to happen ? Wave motion of this type was calculated in 1948 (2) but little mention has been made of it since because no instances have been reported until now. These are difficulties which make it possible to calculate the flow only in cases where the air speed decreases abruptly to zero at some level (probably at a sharp inversion); in fact, there is a theorem that steady laminar wave motion is impossible if the wind speed decreases gradually to zero.

To circumvent this theorem, either we must say that perturbation theory does not apply (as, for instance, in billow clouds composed of vortices with horizontal axes) or that the motion is not steady, or that it is not laminar. Which of these it will be cannot be predicted, but gliders may be able to find out what actually does happen. Turbulence was, in fact, observed at the highest levels reached on 19th April.

With a hill as nearly two-dimensional as the Mynd, the component across the ridge is the important one, so that a wind from the north at 10,000 ft. might be almost equivalent to zero wind. It is not easy to decide from the radio-sonde data what the wind actually was on these two occasions because with light winds like there actually were, the nearest radio-sonde may not be representative. No meteorologist would have much difficulty in believing that on these occasions there was practically no wind at the Mynd somewhere around 6,000-

10,000 ft., if he wanted to ; and since this is the only explanation of the waves so far given, it should be accepted for the time being at least. The hope that it will happen again is slender ; but then " the unexpected ..... " or does it ?

References

(1) Forecasting Waves. GLIDING, Vol. 4, No. 1, p. 32, 1953.

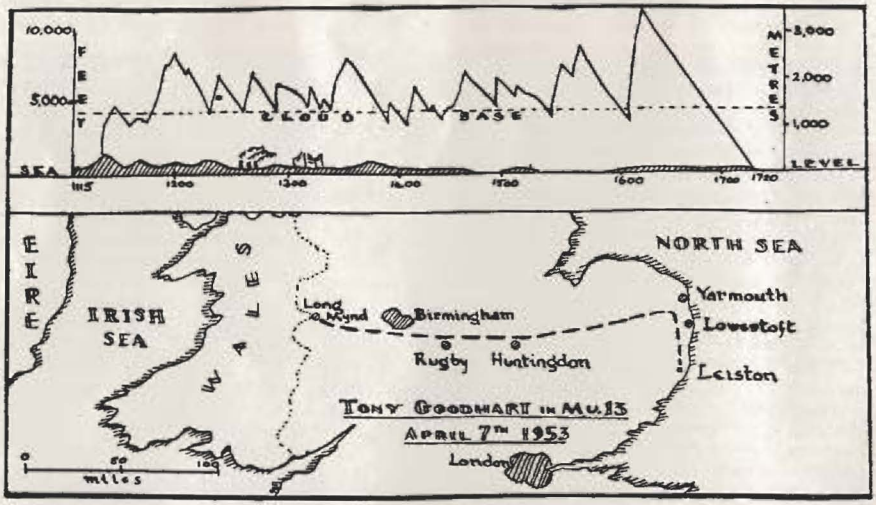
(2) Theory of Waves in the Lee of Mountains. *Quarterly Journal of the R.Met.Soc.* Vol. 75, p. 41, 1949.

Diamond Goal

by Lieutenant Commander Tony Goodhart

THE television set, in that excellent glider pilot's refuge, the Sandford Hotel at Church Stretton, had produced a most encouraging weather map on the Monday night (and well it might after Easter Sunday's snowstorms and Monday's steady rain). Tuesday dawned clear and bright and the air had that " something " about it that boded well ; the 8 o'clock forecast was hopeful, too. Up on the Mynd the competitors had a purposeful look about them as they rigged in the brilliant sunshine, with frequent glances up at the well-fed bulges of cumulus that had started developing as early as 08.30; by 10.30 the cumulus were marching, not very well dressed but none the less steadily, eastwards, and it was obvious that with luck one might well go quite a long way.

At briefing, the day's task was declared as " pilot selected goal " and the maps crackled as they were unfolded further eastwards and downwind. That master of understatement, Dr. Scorer, forecast that it might possibly be quite a good day with cloudbase going up to 3,500 ft. a.s.l., with the possibility of an occasional cloud street, and freezing level at 3,000 ft. ; he regretted that wave conditions did not seem likely. Wind direction was difficult to forecast accurately, he said, though he expected it to veer from W. towards N.W. as one went east. To one rather precocious pilot who asked the most favourable direction for a 200-mile flight, the great doctor rather cynically (or so it seemed) recommended Lympne ; however, I rejected this advice and selected Leiston airfield, on the east





. . . advertised itself in 12-foot letters.

coast between Saxmundham and Aldeburgh, a comfortable two or three miles outside the necessary 300 kilometres.

A winch launch at 11.15 placed me nicely into a thermal and the Mu-13 and I set off more or less straight away. Cloud base was found to be at about 4,500 ft. a.s.l. and it rose during the day to a little over 5,000 ft. I regret to say that I never keep a log of my progress during cross-country flights ; I really must start doing so—it would help a lot with subsequent analysis. I can therefore report very little in the way of facts. From the barograph chart it may be seen that only on two or three occasions did I get below cloudbase, and that my lowest height of the day was 3,800 ft.—in other words, the conditions were so good that the flight was really remarkably easy (were I in another Service I might almost refer to it as a " piece of cake ").

The only snag was that I got somewhat lost after about half way ; I was nicely on track at an aerodrome which advertised itself in 12-foot letters on top of the main hangar, but when one spends most of one's time in and about great mountains of cumulus I personally find accurate navigation rather tedious, and, having made the error three days earlier of spending so much time pinpointing myself that I ran out of lift, I determined at all costs to keep going roughly eastwards. Somewhere near Huntingdon there were a lot of troublesome Chipmunks apparently playing " tag " in and out of what I reckoned was *my* cloud.

At about 16.00 I entered my last cloud—this was the smoothest cumulus I have ever known ; I got set into a medium left-hand turn and spent about ten minutes climbing with virtually no movement of the controls —so much so that, though you may not believe it, the ailerons froze in position and I had to make quite an effort to free them. Rate of climb was a steady 15 ft./sec. and the cloud took me to just over 13,000 ft. a.s.l.

I then set course eastwards once more into some rather murky weather and it was not until I was down to 9,000 ft. that I suddenly saw the east coast and, after some searching of the map, discovered to my consternation that I was heading towards the coast between Great Yarmouth and Lowestoft, nearly 25 miles north of my goal. What was even more disconcerting was that there was by now a quite obvious fresh southerly wind doing its best to prevent me from reaching Leiston.

I now flew south at best gliding angle (speed suitably corrected for a 15 m.p.h. headwind) and, to cut a very long glide short, I scraped into Leiston at 17.20 with just 300 feet to spare. On the way I had passed through some straggly bits of cloud and glanced at my artificial horizon—it had toppled and was just wobbling about—the faithful Venner battery was completely exhausted after a 5½-hour marathon run plus an hour the previous day without recharging.

Leiston is a disused airfield which is farmed by Mr. Finbow ; I can strongly recommend Mrs. Finbow's home-cured ham and apple pie ! My noble retrieving crew, in the shape of John Cotton and Bobby Neill of the Midland Club, arrived about 20.45, having driven 250 miles ; we set off back to the Mynd at 22.00 after Mrs. Finbow had regaled the crew with much good food. The sun was well up when we reached Church Stretton at 05.00.



Chipmunks playing "tag".

What have I learnt from this flight ? The importance of being on the map ; I could have saved at least three-quarters of an hour if I had known where I was when I entered the final cloud. Otherwise it was, quite honestly, one of the easiest cross-country flights I have done. The Mu is certainly flying well this year and I am hoping that the extra weight I have added in art. horizon, and so on, is enabling it to penetrate a bit more than before.

Finally, a word of thanks is due to the Midland Gliding Club for organising a most enjoyable Rally ; theirs is, to my mind, the finest site in the country and I look forward to my next opportunity for flying from the Long Mynd.

(*Illustrations by Anstace Goodhart*).



Goal !

How Not To Do It

by "Groucho"

I SUPPOSE our story really begins at the time we started pestering the C.F.I. to let us "go away". One day, in desperation, he said "Yes".

The day in question was hot, thundery and windless—the kind the cloud-flying types love. We had an aero-tow to 2,000 ft., bang over the airfield and slap beneath a nice little cu. We circled under (more or less) this, going up. After a bit we were passed by the two-seater "Daisy" going up even faster. We wondered why Daisy's circles were not concentric with ours and concluded it must be due to the presence in the two-seater of the C.F.I., who made rude signs to us as he passed. Our calculations on the mathematics of concentric circles were interrupted by the realisation that we had lost lift completely, so at 3,000 ft. we pressed off roughly northwards to look for more.

In due course we found this under a bank of clouds and worked it up to 4,000 ft., feeling more secure now that the C.F.I. was no longer able to check our circles. When the lift petered out (we prefer to regard it that way) we were somewhat south of the airfield and realised, for the first time, that the vis. wasn't too good. In fact, our view of the ground was confined to a little bit directly beneath. We then carried out a little argument with ourselves, roughly as follows:—

Press-on half of us: "You're at 4,000 ft., what about going away?"
Cautious half: "But you can't go away in this visibility. It's probably Q.B.I. anyway."
Press-on half : "All you've got to do is follow the railway to Lympne."
Cautious half : "And probably follow it in the wrong direction."

We finally compromised on the decision to go away down the railway line if we met another (third) thermal. By now we were down again to 3,000 ft. and cast around for a likely spot. There seemed to be clouds everywhere, which didn't help the vis., as the sunshine had disappeared. In due course we found a really black-looking bit of cloud that sucked us up at a very satisfying rate. Our satisfaction was somewhat marred when we realised that we had been joined by the Olympia "Pedro", about 500 ft. below —circling in the *opposite* direction! Had he seen us? Probably not, but we kept on to cloud base.

Cautious self (remembering Pedro) : "Better not go any higher. Pedro might be in there just t ove you!"

Press-on half: "Ridiculous! Anyway, you're at 5,000 and only want another 300 ft. to get your Silver C height."

The argument was terminated by the cloud suddenly blotting out our view on all sides. We thought of Pedro, maybe only a few yards away, and reached for the dive brakes.

Out into somewhat clearer air we sighed with relief and annoyance. Then—horrible realisation—we couldn't see the airfield. Or the railway line. We were lost. Panic searching for the map, only to remember it was in an inside pocket under two or three layers of harness and things and hopeless to reach. We flew about a bit, hoping to recognise the landscape, but couldn't, so decided we *must* push off cross-country now. After all, we could fly by the sun (but there wasn't any). Well, the ground-shadows, then (but there weren't any of them either), and—confound it—there wasn't even any wind to give us a clue.

Reluctantly we concluded that a compass course would be necessary; but we were in "Redo", the Olympia with the "suntanned" compass, and could see the compass reading only by straining forward to the limit of the harness. Then came an awful period of mental juggling with figures. Should we fly on a course of 110° (our guess for Lympne) or its reciprocal? Does one subtract from 90° or 180° to get a reciprocal? Hell, do the degrees count clockwise or counter-clockwise?

We were now thoroughly confused, and in turn we flew on a variety of courses, all the time watching the vario., altimeter, compass, the clouds, and—hopefully—the ground. So no wonder we soon began to feel a bit sick! However, we finally decided on a course and more or less followed it—deviating to find lift and to follow bits of railway line that looked as though they might go to Lympne—only to give up every time we found a bend in the line, showing it just *couldn't* be the line to Lympne.

After two or three hours we were hopefully looking for a glimpse of the sea, or at any rate some London suburb that we might recognise. But no. Fields, trees, fields, trees. Eventually we came to an extra-wide belt of woodland with only 2,000 ft. in hand. Should we cross it? No, we would get some more height first. But we didn't get any more height. In fact, we steadily lost it, until we remembered the C.F.I's "field" briefing and began looking around.

The trouble was that we couldn't tell grass from corn, and didn't want to have to pay damages to a farmer as well as the retrieving fee, so when we saw some cows huddled in the corner of a smallish field we decided on that—there couldn't be cows and corn in the same field.

Down, down we came, scanning the field for clap-trap in the approved (?) manner, and trying to work out which way the wind would be blowing if there was any wind (if you know what we mean). In we came over the trees (a little fast perhaps?) only to realise that the field sloped—we had forgotten that.

Still, this was our lucky day—we were flying *up* the slope and came bumpily to rest a good few feet from the quarry at the far end—which we hadn't noticed before. We eased our tired, sore and sick self out of the cockpit. Looking back down the slope, we saw the herd of cows galloping towards us. Only, the one in front wasn't a cow—it was a bull.

But that's another story.

Essay Competition

A PRIZE of £10 has been offered by *Weather*, the monthly journal of the Royal Meteorological Society, for an essay on the subject of thermals. The competition is open to all, but is primarily intended to attract glider pilots.

The Editors of *Weather* are aiming at a high standard, and preference will be given to entries which are based on documented observations and make a real contribution to the elucidation of the processes associated with thermals.

The name and address of the competitor must be given, and the entrant must be the *bona fide* author of the essay submitted. The essay must not have been published previously in any form, and the prizewinning entry becomes the copyright of *Weather*. The prize will be withheld if a sufficiently high standard is not attained.

The latest receiving date is 31st October, 1953, and entries must be addressed to: "Weather" Essay Competition, Royal Meteorological Society, 49, Cromwell Road, London, S.W.7. Unsuccessful entries will be returned if a stamped addressed envelope is enclosed.

Gliding Certificates

SOARING certificates awarded during the first four months of this year are given below (letters "G.S." refer to Gliding Schools of the Air Training Corps).

Certificates are given for the following tests:

"A": straight glide of 30 seconds.

"B": glide of 1 minute with right and left turns.

"C": soaring flight of 5 minutes above level of start.

"Silver C": distance, 50 kilometres (31·07 miles); gain of height, 1,000 metres (3,280·8 feet); duration, 5 hours.

"Gold C": distance, 300 kms. (186·41 miles); gain of height, 3,000 m. (9,842·5 ft.).

"Diamond", additional to Gold C: one for each of the following: distance to a declared goal, 300 kms.; distance, 500 kms. (310·686 miles); gain of height, 5,000 m. (16,404·2 ft.).

Numbers allotted for "A" certificates are retained for the "B" and "C"; higher certificates are numbered separately. Diamonds for goal flight begin at No. 200, and for height at No. 300. No diamonds for distance have yet been awarded in the U.K.

Diamond for Goal Flight

No.	*Name*	*Date of completion*
207	G. A. J. Goodhart	7. 4.53

Gold C

12	G. A. J. Goodhart	7. 4.53

Silver C

404	C. N. C. Mitchell	11.8.52
405	H. M. Gass	8.11.52
406	J. B. Cookson	5.11.52
407	R. J. Hyde	6. 7.52
408	J. R. Court	7. 2.53
409	M. R. Bishop	18.12.52
410	J. Godley	31. 7.52
411	I. Edwards	4. 4.53
412	J. Hulme	5. 4.53
413	J. Tweedy	4. 4.53
414	M. Hodgson	7. 4.53
415	A. Sutcliffe	5. 4.53
416	C. Waller	4. 4.53
417	G. Whitfield	21. 3.53

NOTE.—Mr. Court completed his Silver C in New Zealand.

C Certificates

No.	*Name*	*School or Club*
January		
6401	P. D. Mountain	R.A.F. Thornhill
7329	P. J. Holbrook	Scharfoldendorf
9070	E. S. R. Howard	No. 68 G.S.
9407	S. L. Bunting	No. 203 G.S.
9847	T. Patton	No. 203 G.S.
9982	A. E. Bush	R.A.F. Thornhill
13993	P. G. Flower	Bristol G.C.
15089	F. E. Edwards	R.A.F. Thornhill
15887	P. G. McWhirr	No. 87 G.S.
15896	A. H. Noon	London G.C.
15910	R. J. Hyde	Scharfoldendorf
15921	J. MacAnally	No. 203 G.S.
February		
6380	W. J. W. Shorten	No. 203 G.S.
8763	W. McMillan	No. 203 G.S.
10817	A. H. Wallace	Surrey G.C.
14831	P. Temple	No. 89 G.S.
15940	R. A. Wallis	Salisbury G.C.
15946	C. H. Gill	No. 80 G.S.
15959	Joan Oxenham	R.A.F. Fassberg
15957	P. G. Hardie-Bick	Cambridge Univ.
15968	S. Crayden	Scharfoldendorf
15975	A. K. Knox	London G.C.
March		
12030	B. W. Townsend	No. 146 G.S.
13829	E. R. Bastin	No. 125 G.S.
16020	E. A. Allan	Scharfoldendorf
16060	G. D. Taylor	Bristol G.C.
16073	J. B. Molloy	Perak F.C.
April		
4230	J. R. Pearce	No. 89 G.S.
5537	I. B. Richards	Derby & Lancs.
13248	R. Illidge	Derby & Lancs.
13377	R. Porteous	Scottish G.U.
14096	J. Builder	Coll. of Aeronautics
14255	A. W. Stafford	No. 125 G.S.
14645	M. J. Gibbons	Oxford G.C.
14949	M. A. Ayres	Oxford G.C.
15275	R. M. Lucas	Cambridge Univ.
15473	Miss B. M. Grey	Army G.C.
15507	E. J. F. Lusted	Southdown G.C.
15824	E. W. Hargreaves	Army G.C.
15903	J. M. Giles	No. 31 G.S.
15919	T. E. Ruffell	No. 31 G.S.
16024	J. P. Thompson	No. 43 G.S.
16103	J. R. Alderton	Cambridge Univ.
16105	H. T. Littlewood	No. 82 G.S.
16119	O. Buneman	Cambridge Univ.
16161	J. G. Wright	Yorkshire G.C.
16175	G. M. D. Elson	Derby & Lancs.
16184	G. E. Caruana	Luneberg
16185	L. Ivey	Hq. 2nd T.A.F. G.C.
16195	R. B. Erb	Coll. of Aeronautics

Christchurch to Dunedin

A 205 mile Goal Flight in New Zealand

by S. H. Georgeson

I WOKE up on the morning of March the 25th and put my head out of the flat window and noticed a nor'west arch; I then went to the top of the flats and saw an arch similar to those shown in the photograph. This arch stretched as far south as the eye could see but stopped due west of Christchurch. This arch was a most perturbing spectacle, as it meant it would upset my work for the rest of the day unless I did something about it, and then it was still going to be upsetting.

On reaching Harewood I discussed the situation with the Met. boys. We rang the R.N.Z.A.F. Station at Wigram for further information. The wind was N.E. 5 kts at Harewood with 10 kts N.W. at 7,000 feet. This wind seemed to me to be too light to produce any lee waves. At 10 o'clock I was still watching the sky, which had changed little and which looked to me to be too vast, too high and too far away to ever venture into in a sailplane.

A north-bound N.A.C. pilot gave in his report on the conditions from Dunedin to Harewood, which the Met. boys showed me. It was evident that lenticular clouds were extensive further down the Island with higher wind velocities. The report was most encouraging, and after discussing the matter with John Neave, the Chief Instructor of the Canterbury Aero Club, we decided to rig the Weihe and tow over to the hills.

The Control was notified of my intended flight from Harewood Airport at Christchurch to Taieri Airport at Dunedin. They notified Taieri of my intended arrival, which I estimated would be six hours later. At 11.35, after a good deal of messing about, I was eventually seated in the Weihe with perspiration pouring down my face and being cooked to a frazzle under the canopy with all my heavy flying gear on.

Thirty-two minutes later I was released at 7,500 feet over a hill some 4,000 feet high in the lee of the main ranges. I couldn't find any positive lift although we struggled up to around 9,000 feet. We gained and lost



Lenticular clouds over the Mackenzie Basin, probably formed by the Mt. Cook ranges on the horizon. A similar cloud in the same area was used by Mr. Georgeson.

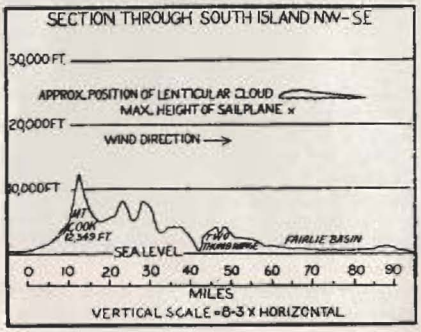
height with nothing positive happening. In the lee of a hill which I had used previously I found a small lift, which was about 30 secs. deep and 60 long.

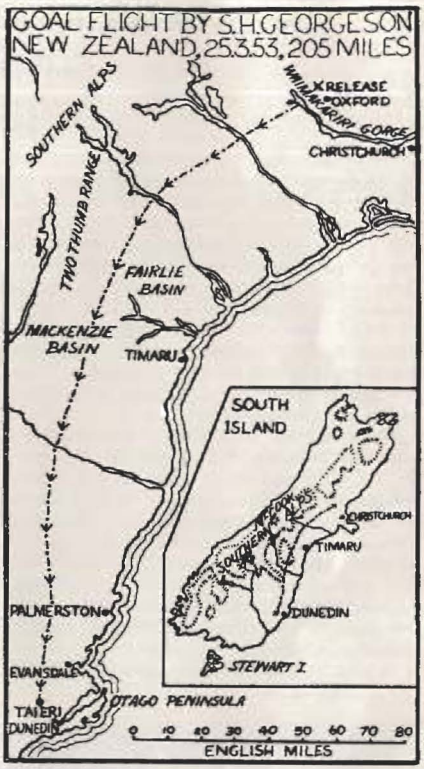
I seemed to have no drift and the air was gently undulating in movement. As I couldn't use the lift as a wave, I circled in it and slowly began to climb, going up steadily about 5 ft. per sec. with next to no drift. Why I went up I could not imagine, as the wind at that height must have been very light, although below and to the right the wind was obviously blowing fairly hard through the Waimakareiri Gorge as dust was being blown up from the river bed. There were some ragged roll clouds lying in the lee of the hills, as usual in strong nor'west conditions.

At 14,000 feet I went to put on my oxygen mask and managed to drop the fastening clip behind my head where I could not reach it. This was annoying, as it meant I had to hold my mask with my hands. As conditions were beautifully smooth this did not worry me.

Freezing level was estimated to be about 13,000 feet. At 16,000 feet I felt a little cold but was quite comfortable and breathing a little oxygen. At this height I turned into the wind and stopped circling but soon ran out of lift so resorted again to circling and was still approximately over the same spot. At 21,000 feet I was feeling the cold and decided that to go higher was only going to increase my discomfort and that I had sufficient height to make a good start in the right direction.

I therefore set off in a south-westerly direction at 50 m.p.h. The height kept on going up and at 22,000 feet I entered the stratus part of the north-west arch. In order to keep below it I increased the speed





to 70 m.p.h. The conditions were very smooth and the Weihe was sliding along comfortably. I kept this up until I was down to about 18,000 feet.

At this height I could see the structure of the nor'west arch quite clearly. The air in front was quite clear and the arch had a leading edge which was sharp and similar in shape to the leading edge of a lenticular. The back part appeared as stratus and was about 20 miles wide or more. On certain occasions from the ground, if the sun was shining under the cloud, the bottom of the sheet showed pronounced mammatus. This could be seen at this height clearly and had the appearance of large undulations, and looked very much like the bunches of little lenticular clouds in the stratus part of the arch. The arch appeared to stretch from the centre of the island west of Christchurch to the coast over the Otago

Peninsula and was entirely unbroken. This arch has always struck me as being the lenticular cloud of a gigantic wave, and looking at it from this height I was even more convinced.

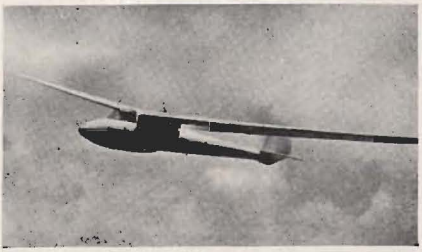
When I was down to 16,000 feet I stopped in the first bit of good lift I found and stayed in it, going up at 20 ft. per sec. As I found the lift area small, I again resorted to circles, which worked reasonably well. At 20,000 feet I set off across the Fairlie basin with the intention of obtaining lift in the lee of the Two-Thumb range; this I did, and at 22,000 ft. gave it up because of cold. Also the canopy began cracking, giving off loud reports each time a crack appeared.

At this point I passed under the arch, being about 2,000 ft. below it, and came out into the welcome sunshine, which helped to take off the chill. The course was about south-south-west with slight drift. The Mackenzie basin was well covered with cloud, but I got glimpses of the three lakes. For the next fifty miles I lost height steadily and was getting really worried, as I was down to 10,000 feet, which I thought was low enough if I was to pick up waves. However, I ran over the top of lenticular cloud, again in the lee of a range, and stayed in one position until I got back to 18,000 feet and then once more set off for Tairei. I then found the drift quite marked.

Then a series of lenticulars gave me a good run for the next 40 miles. West of Palmerston I noticed I had considerable drift, and altered course to west-south-west. At that point I decided I could reach Tairei, unless I struck a bad down-draught, with a safe margin. From the cloud formation the situation looked fair. If the course had been altered considerably west it seemed as though further lift could have been obtained but the margin in hand seemed fair enough.

At Evansdale, with the Weihe still trimmed at 70, the height was 10,000 ft., and for the first time since leaving Oxford the air became turbulent. This turbulence increased and so did the rate of sink. I wanted a safe margin of 2,000 feet to clear the 2,000 ft. hill into Taieri. For a short time I was worried, as landing grounds were not available owing to the rough terrain. However, the Flag Staff was cleared by 3,000 ft. and I circled Tairei aerodrome with 3,500 ft. in hand—a very comfortable margin.

After two large circuits I landed near the Otago Aero Club's hangar, and as the



The "Weihe" which Mr. Georgeson flew.

Weihe came to rest, up drove Dr. Peter Renshaw who said: "Good show! We have been expecting you since three o'clock." Peter had been chasing waves in the Prefect, and on landing had been advised by the Controller that the Weihe was on the way.

And so ended a glorious flight. The travelling time from Oxford to Tairei was three hours dead.

Since I started writing this, I hear from the New Zealand Gliding Association that I missed my Gold C by six miles, and so no Diamond. The damning factor was the height of release, which I had thought was low enough to do the trick. It was a big disappointment, but I shall remember to read the F.A.I. requirements before starting out on another attempt.

The R.N.Z.A.F. very kindly flew the Weihe back to Christchurch in a Bristol freighter, so saving a long retrieve. The R.N.Z.A.F. have generally been most helpful over various problems such as supplying medical advice on oxygen and high flying, weather information and now the transport of the machine, all of which contributes to making a successful flight.

NOTE ON WAVE FLYING.—I did notice on a number of occasions, when flying in these N.W. conditions, that turbulence exists below 10,000 ft., and when going into a wave there is sometimes considerable turbulence before the smooth part is encountered. The same can apply to a down-draught, which often is also smooth.

As yet I have not encountered turbulence over 10,000 ft., but no doubt it exists. I contacted a wave at 2,800 ft., twenty miles in the lee of the ranges, and went up to 13,000 exactly over the same spot last week [mid-April]. I was surprised at the wave being so deep and also that it did not drift back with height.—S.H.G.

A.T.C. Gliding: The Last Three Years

by Squadron Leader H. Neubroch, R.A.F.

WHEN Squadron Leader Ward, writing three years ago in the first issue of GLIDING, reviewed "Air Training Corps Gliding since the War", there were 59 Gliding Schools which between them trained some 1,500 cadets a year to the British Gliding Association's A Certificate (or "high hop") standard. Training was by the solo method of instruction, and the gap from the high hop to the solo circuit could be bridged only by a minority : only some 250 cadets could expect to reach the B.G.A. B certificate every year.

Some of the eagerly awaited Sedbergh two-seaters were then coming into use, but opinions differed on their best employment. The Home Command Gliding Instructors' School at R.A.F. Detling, with responsibilities towards the Air Training Corps gliding organisation similar to those of the Central Flying School towards the R.A.F. flying training, while still developing basic doctrine, was already beginning to make its influence felt on the standard and methods of gliding instruction. Many A.T.C. instructors learnt for the first time the art of air instruction—demonstration, patter, and the ability to assess correctly when a pupil should be allowed to "get on with it" without interference, and when to take control—where previously they had coaxed, cajoled or mesmerised cadets into the performance of those evolutions which then constituted the sequence of gliding instruction. A.T.C. gliding training was about to take the step from solo to dual instruction which service (and civil) flying training had taken well before the first world war.

Today all A.T.C. gliding training is by means of the two-seater or dual method of instruction. The standard of proficiency is set at the solo circuit stage and pupils must show evidence of good airmanship and judgement by landing consistently in a small marked landing area. Since all cadets who reach this Proficiency Gliding Standard automatically qualify for the B.G.A. B certificate, the A certificate has lost much of its significance as far as the A.T.C. is concerned. Soaring flight, though still practised only by a minority, is gradually coming into its own, within the limits set by the need to train as many cadets as possible, and by aerodynamically relatively inefficient sailplanes.

With the expansion of the Royal Air Force there are now fewer airfields suitable for A.T.C. gliding training. Largely as a result of this, the number of schools has fallen to 43 (plus the H.C. Gliding Instructors' School) but at each of these there is a highly competent volunteer staff including at least one A category instructor. That quantity has not suffered unduly and quality gained is shown by the following summary of results.

		Certificates (Cadets only)		
Year	*Launches*	A	B	C
1950	105,614	1,474	252	3
1951	88,498	1,231	470	23
1952	92,584	1,253	1,128	54
1953*	90,000	1,200	1,200	60

* planned

As a result of the sound two-seater instruction now given at A.T.C. schools, the accident rate is lower than ever. Much of the credit for greater safety in gliding training must go to the Instructors' School, which has developed and put into practice sound techniques ; instructional literature based on this doctrine is available to every A.T.C. gliding instructor.

Training has been greatly helped by the adoption of the Kirby Cadet Mk. III (T-31) tandem-seater which is used for circuit practices, both dual and solo.

It will be obvious to anyone experienced in gliding instruction that the training of such large numbers is not done without a lot of very hard work on the part of the volunteer staffs of A.T.C. gliding schools, whether commissioned or working in the capacity of civilian instructor. These volunteers do not normally receive any recompense for their efforts, although they submit themselves to a high degree of discipline. Ab-initio training is often monotonous and without the joys to be found in soaring flight ; it is a task requiring a high sense of responsibility and long hours of work. A.T.C. gliding instructors have given this not only at week-ends but also

during their holidays when many cadets are trained on contihuons courses of a week's or a fortnight's duration.

For several years now, special A.T.C. gliding courses have been held during the summer holidays at the site of the Derbyshire and Lancashire Gliding Club at Great Hucklow, Derbyshire, where the majority of cadet C certificates, and two five-hour solo flights by cadets, were obtained. Other cadets have had their introduction to hill-soaring flight at the A.T.C's own soaring site at Halesland, near Cheddar, in Somerset. During 1952, a total of 55 weeks continuous courses were held on flat and hill sites, and it is hoped that this will be greatly exceeded during the current year.

A.T.C. participation in the National Gliding Championships has now become something of a tradition. A.T.C. entries have usually been confined to Sedbergh intermediate sailplanes, captained by experienced instructors with specially selected cadets as co-pilots. Five teams are entered for the 1953 championships. There can be no expectation of winning this event against crack sailplane pilots flying high-performance machines, but participation in the championships has provided really valuable experience to the teams. Several remarkable cross-country flights have been carried out by A.T.C. instructors, and staff instructors of the H.C.G.I.S. have, for two years running, won the Seager trophy for the outstanding flight of the year in a British two-seater.

An unpretentious scheme, which has proved its worth to the Royal Air Force, has recently been developed at public and grammar schools with R.A.F. Sections of the Combined Cadet Force. Selected sections whose boys normally could not attend for instruction at A.T.C. schools were issued with a primary glider of the Slingsby " Grasshopper " (T-38) type, and masters at these schools were given a course of instruction at Detling. The object of the scheme is not to give gliding training as such, but to provide a means of attracting suitable boys to the R.A.F. sections, and to furnish suitable exercises in group-handling and basic airmanship. That the scheme is achieving its object is shown by the spectacular increase in the strengths of many of the R.A.F. sections which have a primary glider.

Plans for the future are largely concerned with the development of so-called Gliding Centres which, it is hoped, are to be operated on a full-time basis by specially recruited instructors. These centres will be carefully located at or near hill-soaring sites, and it is the intention that cadets will be able to take a course of a week's duration



Signalling from the take-off point at No. 123 Gliding School, White Waltham.

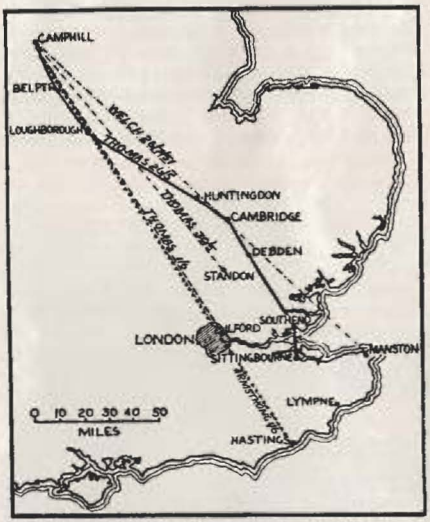
or longer, when they will receive training to the highest possible standards.

The greater emphasis on soaring flight has been brought about by a re-definition of aims which has recently been approved by Air Ministry. Whilst retaining those features concerned with the encouragement of as many cadets as possible to take a practical interest in flying, and with the development of such personal qualities as initiative, self-confidence and a sense of responsibility and adventure, it is now also intended to train cadets in the practical aspects of aerodynamics, meteorology, instrument flying and navigation. The day when the above-average cadet can expect to gain the F.A.I. Silver Gliding Badge may, therefore, not be so far distant.

Camphill to Sittingbourne

by Bernard Thomas

ON 26th May the wind was north-west, 15 knots, at Camphill. Thermal activity started early and the sky was almost clouded over by the time I was ready for a winch launch. I took off at 10.30 in the Sky, and contacted a cloud within a few minutes. I entered cloud at 3,000 ft. a.s.l. and climbed to 5,500 ft. On coming out, I was unable to get the compass away from a north to west heading in spite of the fact that I was circling. The visibility was bad and I was surrounded by cloud and as a consequence was completely lost within a few minutes.



Besides showing the route of the flight described, this map indicates two further attempts by Mr. Thomas on the 300 kms. distance for the "Gold C", a successful attempt by J. Stanley Armstrong, and the previously longest flight from Camphill, made during the last National Contests by Lorne Welch.

For the next few minutes I descended steadily and was lining up an approach 300 feet above a farm which was on the top of a hill. Approaching over some dead bracken I had a suspicion of green ball, and a few circles brought me over the valley at Belper and in particular over a wire mill. I knew it was a wire mill because I could easily see the wire ; in fact I could see what gauge it was. The mill provided me with a good thermal up to 5,000 ft. I pin-pointed Ambergate before going into a cloud and the next place I recognised was Loughborough.

As the compass was sulky, I watched the cloud shadows carefully and hit off the cross-wind angle as well as I could. Cloud base moved up to 4,000 ft. but the maximum height of the clouds all day was 5,000 ft. What with bad map-reading and no compass, I was unable to obtain a fix until I reached what I thought was Bedford, but which was obviously Huntingdon, because 15 minutes later I was over Cambridge. The amount of ground I had lost to the east dismayed me and I pressed on due south.

At Cambridge the artificial horizon toppled and I had to use the turn-and-slip indicator. We only use it in an emergency and have had little practice with it. I realised then that I had been wasting time

trying to gain height in cloud, and from Cambridge I left each cloud at cloud-base and made for the next.

From Cambridge the navigation was much easier and I identified Debden aerodrome from a list of index letters which we carry with our maps. Shortly after Chelmsford I saw the Thames with not a cloud beyond. I flew up and down the north bank trying to get the last foot of height and started to cross at about 3,000 ft. I struck the last kick of green ball over the middle of the Thames.

It was fairly obvious that the flight was now virtually over, but in a desperate attempt to squeeze in the last 12 miles I circled a paper mill in the centre of Sittingbourne with one eye on a playground suitable for a landing, but lost height steadily. It must have been an optical illusion which made me think that the playground was empty, for I was surrounded by thousands of small children immediately I landed.

My cross-country experience amounted to three or four flights up to 50 miles, and on reflection it seems to me that navigation is by far the most difficult part of a cross-country, and the next time I have the chance I shall watch the map from the moment I start.

Crossing the Thames at Southend seems to present little difficulty, but it would seem advisable to cross a few miles higher up the river. The total distance was 172 miles and the elapsed time was 6¼ hours.

The Slingsby Trophy



This new trophy, presented by Mr. Slingsby, is to be awarded annually to the pilot making the most meritorious flight in a Sedbergh two-seater sailplane during the National Championships. Another new trophy, presented by Sqn.Ldr. E. J. Furlong, is for award to the entrant of the two-seater earning the greatest number of points.

Easter Task-flying Rally at Long Mynd

by Stan Jones

THE main purpose of this Rally, run by the Midland Gliding Club, was to encourage competitive cross-country flying.

Good Friday, 3rd April, was used as a practice day, since many people, especially in the Midlands, have to work on this day. Saturday, 4th April, to Tuesday, 7th, were set aside as competition days.

The competition rules were very similar to those to be used for the 1953 National Gliding Championships, being briefly as follows:—

HANDICAPPING.—Sky, scratch. Olympia, Mu-13a, 10 per cent bonus. Prefect, Grunau, T-21b, 25 per cent bonus.

MARKING SYSTEM.—No marks given for height. One mark awarded for each mile. A 20 per cent bonus for reaching a goal.

Taking into consideration the above, the best performance of the day was given 100 marks and the others marked in proportion.

Dr. R. S. Scorer made arrangements with the Central Forecasting Office, Dunstable, to send special meterorological information through to the Met. Office at Elmdon Airport, Birmingham. The forecaster in charge at Elmdon then prepared a special forecast for us and phoned it through to the Mynd each morning.

Friday, 3rd April

The Rally got off to a good start, and during the early morning it was possible to bungy-launch with a 15 m.p.h. west wind; but by noon the wind became light and variable, giving excellent conditions for out-and-return flights.

Tony Adams, in an Olympia, declared an out-and-return flight to Worcester, and was winched off at 13.35, landing back at the Mynd after 3 hrs. 10 mins., having completed the 70 miles round trip without any difficulty. Dave Martlew, in the Cambridge Olympia, took off at 14.20 and was soon heard over the radio reporting his position as 9,000 ft. over Shrewsbury and still climbing. During a flight of 2 hrs. 25 mins. he reached an altitude of 10,500 ft. a.s.l.

Chris Riddell, in the Cambridge Prefect, was winched off at 15.00 hours and after 1 hr. 10 mins. landed back on the Mynd with ice on his wings and a barograph trace to prove that he had been up to 12,000 ft. a.s.l. in a cu-nim and had just managed to get "Gold C" height—quite an achievement in an aircraft of this type with open cockpit and no artificial horizon. Tony Goodhart arrived with the Mu-13a during the afternoon and took off at 15.50 on a declared goal flight to Cosford Airfield, Wolverhampton, landing there after 1 hr. 55 mins.

Saturday, 4th April

The weather forecast gave S.S.W. winds and spoke of widespread showers and thunderstorms during the afternoon; cumulus tops mainly 8,000 ft. and up to 25,000 ft. in cu-nims. during the afternoon. Cloud base was expected to rise to about 4,000 ft. a.s.l., with visibility very much reduced in showers.

It was decided to make the task for the day a flight to Camphill, the Derby & Lancs. Gliding Club site.

Winching commenced at 11.00 hrs., but it was 11.35 before the first competitor was prepared to take a launch. The wind was now S.S.W. 10 knots, and most aircraft contacted thermals on their first launch and were soon on their way. Philip Wills's Sky was the only machine to reach Camphill and at the same time he set up a new British speed record of 44.6 m.p.h. for a flight over a 100-kms. course.

Most of the aircraft ran into a dead area over the Potteries and came down there, but Rick Prestwich in an Olympia flew a more northerly course, hoping to approach Camphill finally from the west, but was eventually forced to land at Ringway Airport, Manchester. The Cambridge Prefect, flown by George Whitfield, landed at Basford, 54 miles, and the Cambridge T-21b flown by David Carrow and Owen Storey also did well, landing at Dilhorne, 50 miles.

Sunday, 5th April

Sunday morning found the Mynd covered with 3 inches of snow and everyone very depressed. The weather forecast

spoke of a depression off the Scillies, moving first east and then north-east; heavy showers developing and the possibility of thunderstorms in the afternoon. It turned out to be a day for hangar flying only, but the club catering staff seized the opportunity to excel themselves and served just over 100 lunches.

Monday, 6th April

The weather forecast gave the 2,000 ft. wind as 230°, 15-25 kts. slowing veering. A depression over Anglesey was filling up slowly and moving N.N.E. The main centre of low pressure seemed to be transferring from west of Britain to the east of the North Sea. Cloud base rising to about 3,000 ft. a.s.l., with cumulus tops round 6,000 ft., but up to 25,000 ft. in thunderstorms. Bright periods with thunderstorms developing over the South Midlands and possibly over North Derbyshire region.

In view of the uncertain weather conditions, it was decided to make the task for the day a flight to a goal nominated by the pilot.

Soon after the first competitors were catapault-launched over the side of the hill at 11.00 hrs., a violent hailstorm broke over the Mynd and everyone was forced to land. As soon as it cleared, launching recommenced and four aircraft managed to get away. Tony Adams and Bruce Bowdler, in Olympias, only managed to get as far as Much Wenlock, 10 miles; but Tony Goodhart in the Mu-13a and Dave Martlew in the Cambridge Olympia got as far as Bridgnorth before being forced down by snowstorms.

Tuesday, 7th April

The weather forecast stated that a feeble ridge of high pressure was moving eastwards across the country during the day, with fair-weather cumulus; cloud base rising to 3,000 ft. a.s.l., with tops mainly below 6,000 ft. but some up to 10,000 ft. and occasionally much higher during the afternoon in Northern England, with some cloud streets during the late afternoon.

Winds:—East of Birmingham: at 2,000 ft., 290°, 17 kts., becoming 260°, 20 kts. in afternoon; at 10,000 ft., 300°, 25 kts. West of Birmingham: at 2,000 ft., 310°, 15 kts., becoming 270°, 18 kts. during afternoon; at 10,000 ft. 320°, 20 kts. Finally the forecaster at Elmdon was of the opinion that it should be possible to get to Gt. Yarmouth or Lympne.

It was decided to make the task for the day a flight to a goal nominated by the pilot.

Tony Goodhart, in the Mu-13a, was the first competitor to be launched at 11.15, being winched into a light westerly wind of 5-10 knots, and was soon off on his way to his goal, Leiston airfield, on the east coast. By 12.20 all competitors had been launched and most of them found no difficulty in getting away almost on their first thermal. Tony Goodhart succeeded in reaching his goal, thus completing his "Gold C" qualifications plus one Diamond leg, together with British speed records for flights over a 200-km. and 300-km. course. This was an outstanding performance for the time of year, considering that the Mu-13a has little better performance than a Grunau IIb.

Other excellent flights were made by N.P. Anson in an Olympia to Cranfield airfield, 101 miles, after declaring Dunstable as his goal; A. L. Alexander, also in an Olympia, 105 miles to Polbrook Airfield on course for his goal at Cambridge; and Mrs. B. Alexander in the Cambridge Prefect to Desford Airfield, 67 miles.

The final results of the Rally were as follows:—

Sailplane	*Pilots*	*Marks*
Mu-13a ...	G. A. J. Goodhart	249.5
Eon Olympia	A. L. L. Alexander, D. L. Martlew ...	204.5
Prefect ...	G. R. Whitfield, Mrs. B. Alexander J. C. Riddell ...	102.3
Sky	P. A. Wills ...	100.0
Eon Olympia	N. P. Anson, ... J. J. C. Buckley	89.1
Eon Olympia	R. H. Prestwich, A. B. Adams ...	88.5
T-21b ...	D. D. Carrow, K. E. Machin ...	81.4
Grunau 11b	M. J. Hodgson, A. O. Sutcliffe	58.5
Eon Olympia	R. P. Vickers, J. A. Currie, Miss G. B. Gays, P. W. Leech ...	25.4

NOTES.—P. A. Wills only competed on the first day. Of 12 aircraft entered, two scored no marks and one failed to appear.

In conclusion I would like to thank Dr. R. S. Scorer for making arrangements for special Met. forecasts and briefing the

pilots each morning; and especially Mr. Berry, in charge of the Met. Office at Elmdon Airport, who went into his office early each morning specially to prepare the forecasts for us, although he was not on duty.

Long Mynd to Camphill

73 miles in 1 hr. 40 mins. in a Sky

by Philip Wills

THE only unique thing about this flight (and I am not being rude in any way at all!) is, that the met. forecast before it, turned out to be exact to the smallest detail.

Dr. Scorer told us that a "clamp" of sorts, travelling eastward, had passed over the Mynd at 08.30 hours, and would not clear Camphill until 13.00. Behind it would be cumulus, base 3,000 ft. with summits 5,000 ft. with here and there development to small cu-nim. rising to 15,000 ft. The wind was S.W., 20 knots, at 2,000 ft.

I took off at 12,45, with the wind nearly parallel to the slope, so flew northwards to the head of the valley, where I immediately found a thermal. An easy flight followed until near Stoke, where a long line of cu-nim. started, running north of the wind direction, evidently created by the western edge of the Pennines. Underneath this were smoke and rain and snowstorms.

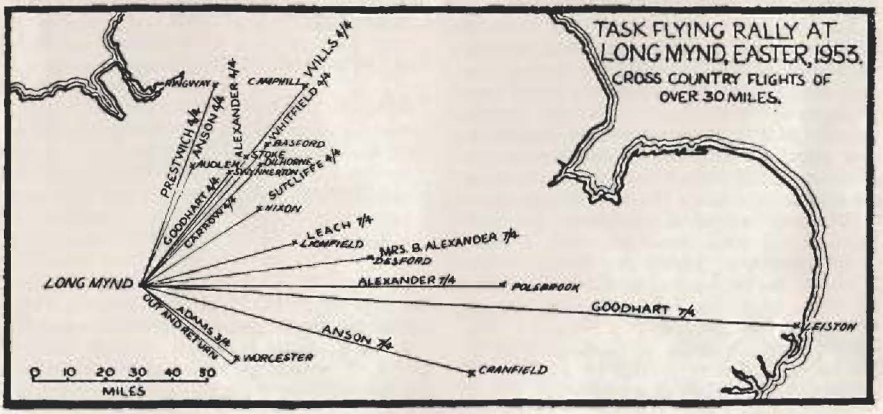
Flying just under this, on course, in poor visibility, I found I was flying over ground completely snow-covered, so realised that there was heavy snow ahead, and turned east to get under the eastern edge of the street, which was running in a N.N.E. direction. Under this edge I found, as I had expected, a wide area of lift, and climbed into the cloud, circling at times, then proceeding on a course parallel to the line of the street. Still climbing blind, I reached 8,000 ft. and then decided I had enough height to reach my goal in a straight glide. I reverted to my course, and soon emerged from the cloud street, to see a stretch of clear blue stable air ahead for at least 30 miles—the gap between the "clamp" and the cumulus forming behind it.

My calculation proved correct—I had assumed that the strip of ice on my wings, about an inch wide and deep, would cancel out the benefit of the following wind—and I arrived over Camphill with 800 ft. to spare. When I landed, I was told that the weather had only cleared 45 minutes before, and the unstable condition I had left 25 miles behind me did not arrive for another 2½ hours.

The success of this flight hinged upon four points:—

(1) Dick Scorer has made himself possibly the only meteorologist in the world who knows exactly what a sailplane pilot wants to know. (This is quite different from pretending his forecasts always come off—no meteorologist this side of the grave will ever achieve this, any more than any glider pilot will ever be born who always reaches his goal).

(2) On his forecast it was only making



the flight more difficult to take off before 12.30.

(3) The successful analysis of the general set-up of the cu-nim. street over Stoke, from the general shape of it as one approached it from behind, and the snow-covered ground below it.

(4) The guess of my gliding angle over the last stretch proving correct.

It is interesting to note that nothing especially clever in the way of pilotage was involved; simply the success of three reasoned guesses. How seldom do such guesses all come off, and how easy does a flight become when they do !

Long Mynd to Polebrook

by A. L. L. Alexander

I OUGHT, of course, to have reached Cambridge, which I declared. It was a roaring day and, apart from a moment's anxiety, when I dropped the wire 200 ft. above the Mynd at 11.40, with no hill-lift to help me, I was never in trouble : that was my first mistake—it was all too easy. I fooled about, gaining height slowly in odd thermals over the valley, and chatting to the Met. people over the R.T. Then I saw Barbara in the Prefect. I don't know why, but I always seem fated to watch my wife standing on one wing-tip in vast thermals. I made for it, worked really hard for 10 minutes, and asserted the superiority of the male by the skin of my teeth. By the time I'd settled down on course again, I had carried a substantial payload of ice to some place a bit south of Birmingham.

Birmingham itself looked better than the open country ahead, so I visited it—thus losing another half hour, ten miles, my A.S.I. and total-energy vario, and my way. Then I pulled myself together and really made some ground (downwind) while everything gradually thawed out. By this time it was 3.15. I was a bit tired, from patting myself on the back on my brilliant cloud-flying, and I was down to 1,500 ft.

Three miles to the north, I saw a great pall of smoke, and a vast crane-like affair. I was stationed near it at one time, and decided to realize my life's ambition and soar it—Corby Steelworks. It was grim. I was thrown, rather than lifted, to 4,000 ft., and emerged, choking from sulphurous vapours, quite exhausted, but still the right way up. No bones were broken.

David rang me on the R.T. and said Tony Goodhart had landed 5 miles from the Mynd : how was I to know he was going to reach the East Coast? I had ten marks in hand. I hit a miserable (but quite workable) thermal over Polebrook airfield at 800 ft., but the fiend, in the shape of a sore bottom and Messrs. Perkins' tea, won hands down, and I descended.

A disgraceful effort, really. The best bit was the retrieve. I give you a toast: Messrs. Standard Motor Co. and my own pet, Antigone—360 miles in 10½ hours including stops; we took the trailer to Cambridge, and did the return journey without it in 3 hours and 10 minutes. The trouble is, I ought to have done the outward trip as quickly.

Long Mynd to Desford

by Barbara Alexander

THE optimists told me to declare Cambridge (130 miles). I myself settled for Honiley (50 miles), and in fact reached Desford (65 miles). I don't know what this proves.

I was lucky enough to connect with lift almost immediately after the winch-launch, and didn't stop till I got to 4,900 ft. Alex, my worse half, who was flying the Olympia, joined my when I was at about 1,000 ft., and after some time overtook me and disappeared into an inviting cloud above. Did I hear him gritting his teeth?

I decided to take no chances on my second cross-country ever : obviously fatigue was going to be my major problem, and I made up my mind not to waste time picking up lost thermals, but to press on and hope. Four hundred feet up over the middle of Birmingham, a small landing-field appeared under one wing, and an airliner over the other. I wished I hadn't pressed on. I found some lift, but decided that as my goal was at that stage cross-wind, and in any case it meant crossing the rest of Birmingham and a line of hills, I would go downwind and try for distance. Eventually, I exhausted my last thermal, and with it my energy, observed some Chipmunks, which obligingly led me to an aerodrome, and flopped down in the middle. Out rushed the inevitable crash-truck, plus 20 cadets, who pulled the Prefect in and de-rigged it.

I'll be conventional and add that I learnt : (1) I was right to go for speed ; I

was very tired at the end : (2) how to pick a landing-field in a hurry—I had a close up of at least six : (3) how not to stay in thermals.

Long Mynd to Cranfield

by N. P. Anson

"RED O" and I were launched to 500 ft. at about noon on 7th April, and, acting on the advice of the C.F.I., turned right along the hill to the north end, losing height at about 1 ft. per second. Just before turning south, we contacted and after nearly ten minutes' constant circling reached cloud base at just over 3,000 ft. The T-21 was circling well up when we left the hill, and went into cloud about 200 ft. above us. Deciding that two in a cloud is a crowd, I set course and flew southwards to the next cloud street. This was dead, and after twenty minutes I was down to 700 ft. (all heights above Long Mynd) at Craven Arms and pretty miserable. I went up-wind to a hill which looked soarable south of the railway and picked up my second thermal off it before actually having to hill-soar. This took me to 5,700 ft. and well into cloud for over ten minutes. The next fix I got was the two large reservoirs south of Birmingham (I was using a half-million map). This surprised me a lot, as I thought I was much further south! From then on, I flew due south between thermals, as it was apparent that there was far more south in the wind than expected.

After about an hour and a half, I was again suffering from gloom and despondency at 1,700 ft. west of Warwick; however, luck was with us again and up we went to nearly 4,000 ft. An hour later we were at 2,000 ft. for ten minutes and worried, but for the last time, as the next two thermals were worth 3,600 ft. and 5,000 ft. respectively. Soon I recognised A5 between Weedon and Towcester, and for the second time on the flight was quite certain where I was!

From then on, it was a case of drifting over A5 in lift then flying back on track, etc. At Fenny Stratford the wind was at right angles to my track to Dunstable, and after about a couple of miles with no lift and a clear sky ahead, I decided that we would go back to Fenny and, if only we could get enough lift off the town, we would go into Cranfield in preference to spending hours in a field beside A5 half-way between Fenny and Dunstable. We found our thermal and, from just over 3,000 ft., arrived at Cranfield with 2,000 ft. to spare. After a wide and gentle circuit, preceded by a couple of loops, we finished up by the Control Tower at minus 800 ft. and Alan Yates came up on his bicycle in time to lift off the canopy. It was 4.30 p.m., and in spite of missing my goal, I felt fine!

The Weather at Long Mynd—Easter 1953

by R. S. Scorer

THE following remarks are based on one weekend's observation of the weather at the Long Mynd and are not intended to represent final conclusions on any topic.

Waves

According to theory, on the afternoon of Easter Monday conditions were expected to be favourable for waves on the assumption that the showers would die out. For short periods in between showers, gaps in the clouds and the lift experienced by gliders showed that waves were active but, as would be expected, they were spoiled by the passage of shower clouds.

On an occasion such as this it might be worth giving permission to only one glider to fly above cloud-base (or one to the north and one to the south of the Club) in order that maximum height may be attained by that one at any rate. A height of 5,000 ft. could probably have been attained on Easter Monday in this way. Radio communication could be used on such occasions to control flying among clouds, and the possibility of allocating half-an-hour each to two or three gliders in turn to fly above cloud-base could be considered when there are large amounts of cloud but with frequent breaks.

Cumulus clouds

It is usual to find lift predominantly on the upwind side of a cumulus. More

correctly this should be the up-shear side, that is the side from which the increase in wind with height is coming; but this is usually the upwind side. During most flights, best lift was found in this way, but some reports were made that lift was found ahead of a line of cu or of a shower cloud and that excessive sink was found on the upwind side after flying through it. It was suggested that action similar to that thought of at cold fronts, with a wedge of cold air lifting warmer air ahead of it, was taking place. This seems too simple an interpretation, and more information about what is taking place would be of great value. For instance, is this lift ahead of cumulus found only ahead of a line of cumulus lying across the wind direction? Is it found only when the clouds are precipitating? Is it found only on the windward side of a hill, i.e. is it experienced chiefly when a shower (or line of cu) passes over a hill-soaring site and so gliders only experience it on the windward side of a hill? My suspicion is that lift is found ahead of (on the downwind side of) cumulus either when the wind decreases with height (which it did not on these occasions) or when the cloud is precipitating; and it is more accentuated when the cloud is arranged in lines across the wind. Careful reports on this would be extremely valuable, particularly with reports of whether lift was found outside cloud above cloud base, and if so whether the air thus found to be ascending subsequently formed cloud.

Surface wind

Conditions were not in general favourable to an investigation of the break-away of the airflow from the surface. On one evening (5th April) when the wind was S.E'ly, smoke was produced at the top of the steep west-facing slope. There was no break-away at all but the smoke descended to the bottom and crossed the valley and ascended the next hill, covering about 2 miles with very little dispersion. It is noteworthy that this could not be reproduced in model experiments, in which either separation of the flow from the surface would be produced or the viscous drag would reduce the velocity close to the surface out of all proportion to the reduction in the full scale, or the flow would be highly turbulent close to the surface. The strength of the down-slope wind observed on this occasion was about 20 m.p.h. and the slope was about 30° to the horizontal.

No reversed flow was observed close to the hill crest. Conditions were not favourable, but the smoothness of the hill-top does not seem to induce it. Eddies to the lee of the hill crest, with flow at the surface towards the sharp crest on both sides, have been observed at Camphill where the hill crest is much sharper and viscous effects may be effective. Over smoother hills the stability of the airstream is able to prevent the formation of these eddies. In the evening a katabatic wind tends to induce downhill flow and thus prevent the uphill flow on the lee side that is associated with the formation of a lee eddy. This certainly happens at Dunstable in a S.E. wind, and waves can be produced when the airflow is induced to follow the contours of the land. During the day the sunshine produces uphill winds at the surface and so encourages the formation of lee eddies. This is one of the chief reasons why waves increase in amplitude in the evening.

Any remarks or reports about these phenomena would be most welcome.

Imperial College,
London, S.W.7.

B.G.A. News

Women's Records

The British Gliding Association wishes to encourage the recognition of women's records in both the British National and the United Kingdom Local classes. The required documentation is described in the booklet "F.A.I. Regulations and Records in Gliding", obtainable from the Association for 2s.

New Regulations for Diamond Badge

At the 1953 meeting of the F.A.I. in Madrid, it was laid down that the 300-km. distance flight for the Gold Badge could optionally be carried out in not more than three legs, of which no leg should be less than 80 km. distance (49·7 miles).

At the 1954 meeting in The Hague, it has now been decided that both the 300-km. goal flight and the 500-km. distance flight for the Diamond Badge may also be carried out in the same configuration.

Riding the Unseen Wave

by O. W. Neumark

FOR tens of thousands of years birds have circled and gained height in thermals in full view of human observers. However, most bird-watchers, including Leonardo da Vinci, held and still hold rather curious ideas on this method of gaining height; but by the beginning of this century Wilhelm Kress published satisfactory descriptions and explanations of thermal circling by birds. Alphonse Pénaud, in sketches drawn in 1875, clearly showed how birds utilised slope lift, thermals underneath clouds and even wave lift.

It is therefore very curious that slope-soarers in Germany from 1921 to 1930 just did not circle in thermals. They noticed and even utilised birds soaring along their slopes as an indication of regions of better lift, but did not follow the birds' example when they left the slope lift to circle in thermals. Perhaps their respect for academic authority held them back; one respected authority stated in 1924 that sailplanes would never be able to use thermals in the way that birds did.

In 1928 Dr. Lippisch drew Kronfeld's attention to the advantages of an instrument called the Variometer, which the Doctor had used while with Dornier's in 1918. Kronfeld made good use of this suggestion. In 1930, at Elmira, Wolf Hirth first made long soaring flights sustained only by dry thermals and assisted by a variometer. Not until 1931 were all the aces circling in thermals and freed from the bondage of the hill-slopes.

A similar inertia can be detected in the history of the British gliding movement.

The same inertia exists in the utilisation of standing and moving wave lift.

The "Moazagotl" was explored by Hirth, Steinig, Kuettner and others from 1933 onwards. In 1939 Kuetnner's famous work "Moazagotl und Foehnwelle", followed in 1940 by "Zur Entstehung der Foehnwelle", showed, supported by photographs, that lee waves were not a unique and local phenomenon of the Riesengebirge but occurred behind thousands of mountain ranges and hills throughout the world, and further that they need not be marked by lenticular clouds.

While wave lift is generally utilised when marked by lenticular cloud, it is usually not recognised when it occurs in clear air. On encountering lift, the modern sailplane pilot usually starts circling madly, and should that lift have been due to wave motion, it is quickly lost by the very process of circling. As standing waves exist very frequently but are only rarely marked by lenticulars, untold improvement in performance might be realised by a new instrument or technique for flight orientation in relation to unseen wave lift.

The position is rather similar to that in the 'twenties when thermals were simply not used because they were invisible.

As the area of lift in a standing wave is not always of regular outline and not always at right angles to the wind, it is advisable to bracket the wave, once one is within it.

This is achieved either by speed variation or course variation. One heads into wind until the forward edge of the lift zone is reached, then reduces speed to that appropriate for minimum sink, during which one drifts back to the crest, whereupon one again increases speed until the forward edge of the lift zone is reached. The other method is to trim the sailplane to fly at least 5-10 m.p.h. faster than the wind speed at one's own level, head directly into wind until the forward edge is reached, then to alter course 40-50 degrees, which will drift the sailplane back through the lift zone; before reaching the crest of the particular layer in which one finds oneself, the original into-wind heading is again chosen. This method allows the wave to be continually bracketed while exploring the lateral extent and shape of the wave. Kuettner's description of his 600-km stratospheric wave flight shows the penalty in terms of loss of height and time which are incurred by carelessly drifting past the crest of the wave. I myself have felt very uncomfortable in a Klemm-35 with ten thousand feet in hand, trying to regain the first wave from the second wave behind Innsbruck.

Prof. Georgii has for many years, and

recently Kuettner has also, described moving waves. As these are also liable to occur more frequently without cloud than with convenient lenticulars, techniques of orientating oneself in unseen waves whose axis might have no apparent connection with the wind direction are essential.

The best way in which I am able to state the problem is to say that it would be solved if instruments or techniques could be found to enable a sailplane to slope-soar on a ridge without visual reference to the ground. If this can be achieved, then orientation in all unseen standing waves will be possible, but orientation in moving waves might or might not be possible. To find the into-wind heading is one of the prime requirements.

The S.B.A. or Radio Range procedure of "Finding the unknown beam" is not applicable, because the wave is seldom as sharply defined as a Radio beam, the ratio between air speed and wind speed too even, and the procedure might also involve pattern-flying in the sink.

A drift sight, although quite useful on many occasions, does not fulfil the requirement "without visual reference to the ground".

Potential temperature might be made use of. The air in any streamline will be colder when passing through the crest, warmer when passing through the trough of the wave. Thus, when the lapse rate is small and nearly isothermal, very marked temperature gradients will exist horizontally, colder in the crests, warmer in the wave troughs.

One can visualise two altimeters, one based on the I.C.A.N. temperature lapse rate, the second altimeter automatically corrected by a mini-lag thermometer to read true altitude: or alternatively, two mini-lag outside-air thermometers, one giving true oustide-air temperature, the other potential temperature obtained by coupling with an altimeter. It is left to the reader to puzzle out how such readings are to be interpreted and utilised.

It is not impossible that a technique of interpretation might be devised to define the mid-point of the upward-sloping part of the wave and to find heading into wind irrespective of visual contact with the ground.

Very useful portraits of the geographical extension of waves with upcurrent strength could be obtained from a modified Decca Flight Log. The track stylus or ball-pen would have to be replaced by a sprocket wheel bearing several differently coloured ball-pens. The track would then be marked in different colours selected by the rate-of-climb and descent indicator. While this method would be admirable for the "Sierra Wave Project" or similar large-scale investigation into the streamlines of standing waves or high-level gusts, it is obviously not applicable for general use.

Smoke lattices produced by aircraft, jet engines with smoke generator attachments, small or large rocket trails or heavy anti-aircraft guns are one of the best, simplest and cheapest methods of research into standing and moving waves and high altitude gusts or turbulence.

Unfortunately, I have not come across any navigational technique of wind-finding with the aid of smoke puffs which is independent of a ground fix. It is evident, however, that two sailplanes working together, communicating by radio telephony would be able to bracket unseen waves much more efficiently than one single sailplane. If one of them were to ignite a smoke generator, the smoke trail would be blown back through the wave and the undulation would become visible to the second sailplane, which would be able to judge how far the first sailplane was to windward of the wave crest. In case there are any difficulties in obtaining suitable smoke generators for use from sailplanes, home-made confetti can be used. Techniques can be practised by pairs of sailplanes soaring in slope lift.

The purpose of this review was to emphasise our inertia in undertaking or trying anything new, *vide*: circling in thermals, soaring in standing waves marked by lenticulars, soaring in unseen waves, utilising "moving" waves. Unlimited new soaring possibilities still exist but are not utilised. To give a few concrete examples, standing waves in N.E. to S.E. winds often exist at Dunstable and all along the Chilterns. They were utilised once in 1937, once in 1951. We sometimes see the undulation of a haze level in side section behind Ivinghoe Beacon. It occurs mainly in spring and autumn and works from dawn to about 10.30 a.m. and again in the evening, usually breaking up during the middle of the day. Lenticular wave clouds very often appear 3 to 6 miles down wind at any height from 2,000 to 30,000 feet in west winds at Dunstable, yet nobody has soared in them.

(*References overleaf*).

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Correspondence

THERMAL SOURCES

Dear Sir,

What Dr. Scorer, in his comments on my article on Thermal Sources (GLIDING, Spring 1953, p. 21) seems to consider as failings, are to me normal methods. No doubt this illustrates the differences between the scientist, who seeks the exact, eternal Truth, come what may, and the engineer, who, to make things work, tries to find the pattern or shape of the problem, armed with which he can make closer and closer approximations to the full answer.

I agree now that weak convection and weak lift are not necessarily synonymous, but feel it is just as well this was pointed out.

The " transfer coefficient " is not *my* belief, but normal engineering usage, and for some particular applications, in heat engines or over aeroplane wings, it has been measured and great, long-winded expressions for it turned out. The same could be done for the surface of the ground if any institution cared enough to pay enough. Dr. Scorer's remarks about the " transfer coefficient " apply equally well to the " lift coefficient " of a wing ; but there are aeroplanes going about the business of the world and gliders having all the fun in the world, in weather conditions which the meteorologists cannot yet explain or predict properly.

Yes, " critical temperature " is precisely as Dr. Scorer says I define it, the temperature at which the thermal breaks away—in the other conditions defined. I hoped that the variation of solar heat input S, with time of day and in cloud shadows, would occur to everyone : given an issue of GLIDING instead of three pages, I would have explored that as well.

I do not think my description of the thermal cycle implies anything about thermals all being the same size, and if I did imply that their form does not change with height, will Dr. Scorer explain what that has to do with their being difficult to find close to the ground ? How close is " close ", anyway ? I have thermalled from 200 ft. over flat ground. At that height the imminence of an approach so limits one's freedom of search that probability theory would show very much reduced chances of finding a thermal, anyway. What is the other evidence that Dr. Scorer mentions ? I would expect the air to be accelerating still, for some distance upwards, and most theories have trouble coping with conditions near a boundary or tip of a system.

The truth is—I hope—that Dr. Scorer and I have each an explanation of part of the thermal story, and one day our ideas may synthesize, along with other searchers, into one coherent whole. Till then, we shall spur each other by differing, and learn by wrangling.

I have now seen Dr. Scorer's films of bubbles of air in water, and think they are jolly good illustrations of what happens to bubbles of air in water. What about surface tension ?

PETER RIVERS.

SKY PLY

Dear Sir,

Having in April become the proud owner of a new Sky—an old Sky in fact, since it is the one I flew last year in Spain—there followed an interesting incident. The first time we put her into the trailer, after her first flight, we found with much alarm and despondency that when you put any local

pressure on the ply there ensued loud splintering noises and a feeling of cracking ply. Could it be that her visit to sunny Spain, although brief, had been too much for her ?

Slingsby, on being introduced, prodded her twice, looked slightly pale (for him) and immediately said : " Don't worry, send her back for investigation, and if there's anything wrong I'll fix you up with a new machine !" His instant reaction to a situation which might have meant a large and entirely undeserved financial loss is something I shan't forget.

In the outcome, the plywood under official test emerged 100% (actually 142% in tension and 171% in shear) and the noise and sensation was due to brittle cellulose paint—possibly the Spanish sun was the villain after all. Slingsbys repainted the affected spots and produced one more satisfied customer.

PHILIP WILLS.

WAVY AIRSPEEDS

Dear Sir,

In GLIDING, Vol. II No. 3, I raised a query about the reason for the rise in airspeed noticed when flying transport aircraft in the rising air in lee waves. This was ably answered by Mr. A. H. Yates in the next issue, and he managed to show mathematically that the aircraft is actually accelerated forwards and does go faster in the upwave.

I am now wondering whether this is the whole story or only part of it, my attention having been drawn to the fact that the air in a wave system does not appear to be travelling with a constant horizontal velocity. This can be most easily observed on the ground, when it will be found that the wind at a position roughly half way between two wave clouds is almost invariably much faster and more turbulent and gusty than the wind under the clouds or generally elsewhere in the same area but away from wave influence. This is particularly noticeable at Renfrew in southerly winds, when there is frequently a wave a few miles upwind of the aerodrome, and another 1½-2 miles downwind, with Renfrew sitting there in the middle having strong gusty winds while other places have lesser winds and not so gusty. The same effect is also seen at Renfrew sometimes in westerly winds when a wave system starts to drift a bit, the wind being strong and gusty when the trough is overhead, and lighter when the crest is there.

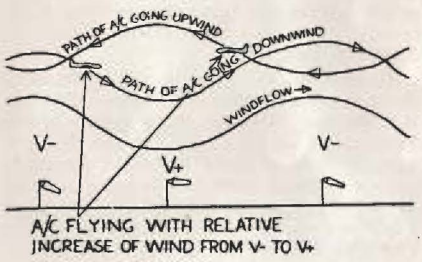
In the case of there being an inversion at a fairly low height, it is easy to see how the wavy inversion can act as a venturi on the air below it. Could one expect the same effect to be found at greater heights ? Above an inversion, for instance ?

While not in any way disagreeing with the explanation put forward by Mr. Yates, I feel that the airspeed thus increased will be further increased by the inertia of a heavy aircraft flying into a fairly rapidly increasing windspeed when flying into wind, and in the case of flying through waves in a downwind direction the extra increase would be found in the downgoing side of the wave, with a relative lull occurring on the up side, so that between the two effects the airspeed would remain much less changed from normal cruising speed.

Since thinking about this I have not had the opportunity of making any air observations to check this theory, and I wonder if any of your readers have noticed any such phenomenon. All I can say is that the biggest variations in airspeed that I have noticed myself have been on occasions when I was flying into wind. One that I made a note of happened on the night of 28th Feb., 1949 when I was trying to cruise at 8,500 ft. about 100 miles downwind of Sardinia against a 30-knots headwind. My cruising airspeed of 145 knots then varied up to 168 knots while climbing level at 1,800 feet per minute, and down to 132 knots when sinking at 1,200 feet per minute, all above wavy strato-cumulus on a fine stable starry night.

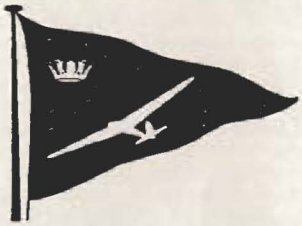
The diagram herewith may help to explain what I have attempted to put in words. The comments of the experts would be appreciated.

J. C. NEILAN.



Clubs & Associations

Royal Naval Gliding & Soaring Association



High Performance

OUR Organising Secretary, Lieutenant Commander G. A. J. Goodhart (Tony) has started the season by getting the Navy's second Gold C (with Goal Diamond) with a flight from the Long Mynd to Leiston on the east coast on 7th April. The first Naval Gold C (also with Goal Diamond) was won last year by the other Goodhart brother, Commander (E) H. C. N. Goodhart (Nick) in France. Tony's flight was made on the last day of the Easter Task Flying Rally organised most successfully by the Midland Club ; as a result of it he won the three-day competition and also established U.K. local speed records of 31.2 m.p.h. for 200 and 300 kilometre distances.

Portsmouth Naval Gliding Club

This club, the largest of the Naval clubs, is having some difficulty this year through lack of instructors, and at the time of going to press is operating only on mid-week evenings—a most uneconomical proposition, but perhaps better than nothing at all.

Heron Gliding Club

Lieutenant Commander (E) Elswood-Row is running this club from Yeovilton Air Station. Through the courtesy of the Westland Aircraft Company, the flying is actually taking place at the Company's airfield and the instruction is being done by volunteers from the staff of Westlands : a most satisfactory arrangement from the club's point of view.

Gannet Gliding Club

Our Northern Ireland branch at Eglinton is making steady progress under its new leader, Lieutenant (E) Heenan, and the more experienced members have hopes later of soaring the slopes of Benevenagh, much used by the Ulster Gliding Club.

Fulmar Gliding Club

Lieutenant (E) Greenhalgh is running our Scottish branch this year at Lossiemouth. The new Slingsby tandem Tutor recently acquired by the R.N.G. & S.A. has been allocated to this club.

Albatross Gliding Club

We welcome, as an Associate Branch Club, the Albatross Gliding Club which operates at the Royal Australian Naval Air Station at Nowra, some 100 miles south of Sydney. This club is run by Lieutenant (E) Harold Kent, who will be remembered by many for his enthusiasm for gliding in this country in the first few years after the war.

General

The R.N.G.&S.A. ties and squares, the first of which were ready at Easter, are selling almost quicker than the makers can produce them.

The two summer camps, at the Long Mynd and at Lasham, have been advertised in Fleet Orders and look like being considerably over-subscribed.

Army Gliding Club

WE are very glad to see that many of our oldest and most hard-working members are now getting their rewards. Davis, Webster, Wenham and Milne all qualified for their Silver C height legs with plenty to spare, whilst thermal-soaring C's were obtained by Riley, Hargreaves and Beverley Grey. Soon after, Bev Grey and Ken Davis announced their engagement, and we wish them both the very best circling in the future.

Bill Webster took the Blue Grunau to 9,600 ft. above sea level (8,000 ft. above release). He only went solo last autumn, and this was his first adventure in cloud. We hear that Tony Goodhart's article on

blind flying, published in GLIDING, was his sole guide. We are not sure who to congratulate.

As an experiment, which we hope will not prove too costly, we have hired a Tiger Moth for the summer. Anybody can now get an aero-tow to 2,000 ft. for 15s. (including visitors to Lasham).

Before any member is allowed to take a club aircraft across country, he has to complete three spot-landings without an altimeter in the aircraft he proposes to use. A lot of members have now qualified, so all we need now is the right sort of weather.

A.J.D-D.

Coventry Gliding Club

AT an early stage in its history the club was fortunate enough to come to an agreement with the Leicester Gliding Club, whose flying activities had been forced to a standstill through lack of a suitable site. It involved the loan to the Coventry Club of the Leicester Club's Cadet, Grunau Baby and ground equipment ; the return half of the bargain being the maintenance of the articles involved and reciprocal membership rights to the members of the Leicester Club.

Flying began on 3rd January, using the Cadet for solo training. Winch-launching was soon found unsatisfactory for this purpose, and auto-towing behind the Beaverette was tried instead and found very successful, though a little hard on the Beaverette. It must be admitted that this success could be attributed to the use of Baginton aerodrome, where the vast expanse of comparatively smooth grass would delight the eye of any harassed instructor.

In March a great step forward was made when a T-21b was purchased with the aid of the Kemsley Flying Trust, and before long the countryside around Baginton was showing that it could produce good thermals. Over the Easter holiday several flights over 4,000 ft. were made, the highest being just over 5,000 ft. Jack Rice paid us a visit and reached 5,500 ft. in his Olympia.

Since we took delivery of a new winch cable, the two-seater launches have all been over 1,000 feet—the highest to date, in a strongish wind, being 2,150 feet.

About the middle of March we were compelled to evacuate the hangar in a great hurry, but fortunately the Coventry Aero Club offered space in their own hangar.

At the moment we have achieved eight A and six B certificates : the majority of these will be attending a week's course at Camphill, Derbyshire.

M.S.H.

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London Gliding Club

At the Annual Dinner, held on 21st March, guests included some of our neighbours who, on occasion, find themselves unwittingly providing us with emergency landing grounds. Dudley Hiscox, giving the toast of " Our Guests ", mentioned the World Champion " who was cradled in this club ", accompanied by " the World's Champion Retrieving Wife "; then Mr. C. G. Tipper, Captain of " the long-suffering Golf Club at the top of the hill "; and " our other suffering neighbour," Mr. Kay of the Piggeries the other side of the hedge.

The new east-wind launching run of 1,300 yards, created by putting the winch far back on the hill-top, was in action next day and provided the biggest launch yet : 1,650 ft. by George Elliott in the Prefect. In time we shall have an even longer run, created by taking in yet another field to the S.W., but this must wait till the ploughed surface has been bound with grass. On the same day, just before dark, Norman Preston climbed in smooth lift from 600 to 700 ft. over the piggeries, and another pilot, approaching to land, did eight beats at 200 ft. in much the same place, which suggests an evening wave to leeward, unlike the common form which is to windward of a hill.

Before March was out, Ron Harben managed a 28 miles cross-country to Buntingford.

April.—Cross-country flying got well under way at Easter. On Good Friday Hiscox went 51 miles to Snailswell, beyond Newmarket, and Dan Smith 25 miles to Tempsford, while Ron Travell did an out-and-return of 40 miles via Bedford. Next day Charles Waller reached Oakington, 39 miles. There were also two notable round tours : Mike Russell via Luton, Halton, Aylesbury, Leighton Buzzard and back, 47 miles, on 4th April, and George Scarborough via Halton, Gt. Milton, Leighton Buzzard and back on the 7th.

During Easter also, John Neilan reached us from Lasham and Noel Anson nearly did so from the Long Mynd.

On the 13th, Laurence Wright went to Leavesdon and Derrick Abbott to Hatfield, where John Cunningham came out and helped him to de-rig. Hiscox went 17 miles to Thame on the 19th.

During April, 311 miles were flown across country. There was 184½ hours' flying from 764 launches.

Dart Aircraft are building a new Camel to Ivanoff's design ; Frank Foster is rebuilding a Meise from Newcastle ; Wheatcroft and Preston have bought the Derby and Lancs. Club's Gull I.

The Link trainer is fully serviceable and thermals can be fed into it. A.E.S.

Yorkshire Gliding Club

Handicapped by almost continual N.E. winds, we have still managed to keep flying. Now that we have acquired the use of a flat site only a mile away, to give high launches in N.E. winds and make possible the contacting of really good thermals from the moors behind Helmsley (not to mention the increased facilities for training), perhaps the winds will blow again from the west. Thanks to the co-operation of a local race-horse trainer, we may use the "Gallops" any day after 12 noon and all day on Sundays. To avoid waste of time and risk of damage it is hoped that we shall be able to fly the machines over.

At the beginning of April, we welcomed Bob Swinn back from Egypt, and apart from chasing thermals to 4,000 ft. on "dud" days, he has already worked miracles with odd scrap, viz. the new Women's Dormitory and the Ticket Office/Punch and Judy Show. Week-end flying is now possible from crack of dawn, and already members are arranging to come in groups for mid-week flying. It is hoped that a local winch driver will be found and trained so that yet another bottle-neck in the training programme will be removed. We now have 23 Trainees, so our second two-seater, the new T-31, will be more than welcome when it arrives next week-end.

The first training camp at Easter (3 trainees) was surprisingly successful in spite of bad weather. Just at the point when we expected the trainees to pack up in disgust, they all asked to join the club as full flying members. Had the food something to do with it? . . . Two stayed an extra day at the end when the weather improved; one got an A and the other an A, B and C. We were more than lucky in our caterers, who not only provided breakfast plates over-flowing with bacon/egg/sausage and tomato, but kept the clubhouse warm with blazing fires and came up smiling with lunch at any

time between 11.30 and 3 p.m. to fit in with the weather.

Just when the good weather blew up, so did the winch. Jack Lawson, our O.C. Vehicles, borrowed a car and came 80 miles at a few hours' notice to put in the "acquired" spare engine which he had reconditioned, and in the meantime, true to form, Sling came to the rescue with *his* winch; flying was only held up for an hour.

The Whit Camp (which is almost full) includes 3 women, so a small women's dorm has been put up. It is alternatively known as Honeymoon Villa, to act as married quarters when occasion demands. (N.B.—It took 8 men to lift one side into position, and 3 of the enforced labourers were subsequently found to be only *prospective* members!

The June Camp is fully booked and in response to demand we have arranged *an extra Camp from the evening of July 17th to the morning of July 25th.*

By mid-summer we hope to have the Kite II (modified) for our more experienced pilots, who, having watched the Sky and new Skylark making circles round one another, fly a Y.G.C. Skylark in their dreams of things to come.

SUE.

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Cambridge University Gliding Club

THE Club spent the Easter vacation at the Long Mynd through the courtesy of the Midland Gliding Club. We flew 84 hours in 17 days. Three members gained legs for their Silver C and seven C certificates were awarded. We flew in very varied conditions.

On 18th March four club members soared a standing wave in an east wind. The lift appeared to be over the valley and G. S. Neumann was launched in the Prefect and climbed to 5,200 ft. in a flight lasting 3½ hours. When he had landed, G. R. Whitfield took the same aircraft to 4,900 ft. to complete his Silver C. A. A. McDougall, the secretary, with J. B. Worsley as pupil, reached the same height in the T-21b.

Later in the camp Alan MacDougall soared, apparently without effort, for four hours in the Olympia sailplane. J. C. Riddell got his Silver C height in the Prefect with a climb to 5,300 ft. while John Worsley worked his way to 4,500 ft. in the Tutor for his C. It was not until the last few days that the west wind blew, when John Worsley completed his five hours' duration leg in the Tutor.

Over the Easter week-end we took part in the Rally organised by the Midland Club. The Olympia took second place, the Prefect 3rd, and the T-21B "Bluebell" was placed 7th. Lionel Alexander took the Olympia 45 miles to Stoke on Saturday and 106 miles to Peterboro' on the Tuesday, while on Monday David Martlew flew it to Bridgnorth in very difficult conditions. George Whitfield took the Prefect 50 miles on Saturday to land near Leek, and on Tuesday Mrs. Alexander reached Leicester, some 66 miles from the Mynd, also in the Prefect. Bluebell went 45 miles to Stoke on the Saturday, flown by David Carrow and Dr. Owen Storey, and on the Tuesday Ken Machin and Laurry Van Domm got to Bridgnorth.

Good Friday gave us some high climbs, when Chris Riddell reached 12,000 ft. in the Prefect for his Gold C height, while David Martlew went up to 10,500 ft. in the Olympia in a neighbouring cloud.

This term at Cambridge there has been some good soaring weather at the week-ends and Pip Gaskell has got his Silver C height.

J.C.R.

Midland Gliding Club

THE highlight of the period covered by this report was the Rally held during Easter. As this meeting was the first of its kind to be organised at Long Mynd we were pleased to hear that people enjoyed themselves so much.

Full details of this Easter Rally are to be found elsewhere in this issue.

The report would not be complete without a word of praise to our catering staff headed by Mrs. Donnelly, who with very limited facilities and space served over 100 hot lunches, teas, etc., during the Rally. Fortunately, the new clubhouse is now in the process of building, thanks to our President, Mr. C. E. Hardwick, and should make future gatherings much easier for everyone.

West winds so far this year have been conspicuous by their absence, particularly at week-ends, but even so we have had compensations in the form of excellent thermal days and one east-wind wave day. Surprisingly our total hours flown are now nearly 450—much better than last year, in fact.

The east-wind wave having been first used by Cambridge University C.G. in March, when Neumann reached 6,500 ft. a.s.l. in a Prefect, was first used by club aircraft on Sunday, 19th April. Stan Jones in the Olympia joined R. Prestwich in his Olympia to reach 5,200 ft. a.s.l. in a position half-a-mile west of the clubhouse. Contact was not difficult from a 900-ft. winch launch, followed by a smart dash down wind.

Our thermal days, aforementioned, have nearly all occurred on Saturdays, which means a few enjoyed a lot of flying.

Saturdays, 25th April, 2nd May and 9th May all provided lift of anything up to 20 ft./sec., and Rutherford was heard to remark that it is difficult to centre in a thermal when the green ball is hard up against the top of the tube.

Perhaps the outstanding of these days was 9th May, when A. Pickup flew the Club Olympia to Staverton Airfield, 52 miles, starting at 15.30 hrs., thus completing his Silver C. Bob Neill Junior, on leave from the Navy, flew the Prefect 20 miles to Leominster, and Col. Benson flew his Avia to Shobdon Airfield, about 20 miles. Cloud base was 6,000 ft a.s.l.

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J.H.

Newcastle Gliding Club

SATURDAY flying operations were started on 28th February. On 18th March, for the first time at Woolsington Airport, we had four machines in operation: the T-21, Tutor, Kite I and Kite II.

On 15th March a moderate S.E. wind blew and conditions were cold and unstable. Andy Coulson climbed to 1,700 ft. and flew for 25 minutes, and Jack Anderson flew with passenger Sid Mitchell for 15 minutes in patches of lift at about 1,000 ft. Tony Morphett contacted a thermal and climbed to 1,000 ft. to gain his C.

Cloudy unstable conditions were present during Good Friday. On the first flight Andy Coulson, with Ian Paul as passenger, climbed to 1,500 ft. from a cable break at 600 ft., and remained airborne for 12 minutes. Later Andy climbed to 2,200 ft. in a flight lasting 20 minutes. The rest of the Easter week it was dull and rainy with low cloud; 36 launches were made in the T-21 and Tutor.

The Annual General Meeting was held on 10th April, and Councillor G. Hutton, D.F.C., D.F.M., was elected Chairman. Alfred P. Miller was re-elected Vice-Chairman and Miss Anne M. Gray, Secretary. Andy Coulson is again C.F.I., Jack Anderson Flight Secretary, and Lionel Tate Flying Field Manager. Alan Crawford is Treasurer in place of Harry Lambert. Other Committee members are T. Gander and S. C. O'Grady. Lord Runciman was again elected President, with the Hon. Denis Barry, Sir Claud Gibb, Lord Ridley and Lord Westwood as Vice-Presidents.

On the week-end following this meeting some spectacular flying was recorded at Woolsington Airport. On the first launch Jack Anderson circled to 3,000 ft. with T. Rickleton as pupil. They were up for 25 minutes and came down voluntarily. On a later flight Andy Coulson climbed to 4,500 feet with Alan Crawford and flew several miles from the aerodrome, beneath clouds all the way.

An emergency arose on 19th April, because one Dakota was in the hangar and another one due, leaving no room for us. Eventually, with the generous co-operation of the Airport Manager, we were allowed to store the machines de-rigged, together with the winch and Beaverette. This inconvenience is much better than having to close down again until a hangar is available.

A.P.M.

Southdown Gliding Club

WE had a very successful Easter : trainees were satisfied by circuits on Good Friday and Saturday, and during the next two days the other members were able to do some soaring over the cliffs. On both these days flights were made to Beachy Head. Vic Tull and Dr. Jameson, during flights in the Olympia on Easter Sunday, crossed over Cuckmere Haven and soared Seaford Head. The wind on Monday was too strong for Tutors, but the T-21b and Olympia were flying all day.

Although C's of A took rather longer than anticipated this year they are all completed now. The modifications to one of our Tutors has proved a great success. The plywood on top of the wing gives it a much better section ; this seems to have given the ailerons better response and the penetration is much improved. The spoilers are most effective. This Tutor was test-flown at Easter and flew at Firle on 2nd-3rd May, when it did a total of ten hours. Heights reached were 1,600 ft. on the Saturday and 1,400 ft. on Sunday. Also at Firle, David Parsey took it to 1,900 ft. on 10th May. The Olympia and other Tutor have visited Firle on several other occasions this spring. At Friston on 2nd May the T-21b and Tutor were able to soar over the slope on the north side of the field.

We are trying our hand at running a course this year. It will be held at Friston from 15th to 22nd August and will be for B Certificate (circuit standard) pupils only. Given good weather and south-west winds, those taking part are assured of a good time by the sea with plenty of flying.

A group are taking the Olympia and a Tutor to Long Mynd for a fortnight in July. As always, much depends on the weather, but our visits make a very enjoyable holiday. Following this, a team will be going to the National Competitions with the Olympia.

A.R.S.

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Surrey and Imperial College Gliding Clubs

WITH Paul Blanchard now married and about to leave for a three-year appointment in Jamaica, Lorne Welch is once again back as C.F.I. There isn't sufficient room here to pay Paul an adequate tribute ; enough to say that he saw us most successfully through our first year and a half at Lasham.

One change since Lorne was last C.F. I. is that he will now concentrate on instruction in soaring and thermal technique, leaving the elementary training to Ann Douglas ; this is part of the policy of making the club primarily a soaring one, and, whether as a result of this policy or not, we have, at any rate, already exceeded last year's cross-country mileage.

The most notable flight was Daisy's 88 mile trip to Cambridge, flown by David Stevens with Mary Poole as pupil. They both regret that they didn't go on to break the T-21 distance record. Daisy has now been joined by a T-31, christened Pansy, and she will be used for the pre-solo flights after the basic dual instruction has been given on Daisy.

The Club is again this year subsidising retrieves over 100 miles, and this incentive, together with the Tiger Moth tug, and a new Club trailer, should produce some worthwhile results.

For those who are put off cross-country flying by financial considerations, three triangular courses have been plotted of 40, 64 and 174 kms. respectively, and a map with them marked on is on the clubhouse wall, together with one list for those successful and another list, black-edged, for gallant failures. The triangular courses will also, on suitable days, be used for inter-member races.

The Club course, run from 4th to 15th May, has been our most successful so far. Thanks to the weather, nearly 1,000 launches were achieved in 13 days. The Club is holding a further course from 7th to 18th September and enquiries for this should be addressed to the Club Secretary at Lasham Aerodrome, near Alton, Hants., or ring Herriard 270 at week-ends.

On Sunday, 10th May, Mr. Marples, Parliamentary Secretary, Ministry of Housing and Local Government, paid Lasham a visit as the guest of the Surrey Gliding Club, and was given two circuits in Daisy, which he appeared to enjoy.

We are enquiring for a full-time Ground Engineer, and applicants should write to the Club Secretary. H.T.

Royal Air Force Gliding & Soaring Association

Moonrakers Gliding and Soaring Club

SINCE January this year the "Moonrakers" in 30 flying days have made a total of 550 launches—350 dual in Cadet Mk. III and 200 solo in Cadet Mk. I. Dual training in the Cadet Mk. III (T-31) has shown quite good results, six As, seven Bs and one C certificate having been gained in this period.

The gliding site is R.A.F. Keevil, which is rather remote (20 miles or more) from most stations in the Area Club. The two machines mentioned above are the only ones in use by the Club at the present time, and the launching method has been entirely auto-tow.

For these reasons the results are regarded as satisfactory and it is hoped that when, as is expected in the near future, the Club obtains an Intermediate or Cadet Mk. II, the number of C certificates gained will ncrease appreciably. G.H.

Middleton St. George Area Gliding Club

Since starting in February last year, we have done 1,502 launches for 153 hours' flying. Certificates gained: 9 A, 10 B, 3 C, and one Silver C, Sgt. Bishop, who flew 52 kms. from Middleton St. George in a Grunau. Aircraft are: T-21 for dual, Cadet for solo circuits, Eon Baby, Gull II (which has only circuited so far), and, at Sutton Bank, Grunau Baby and Kirby Kite for slope-soaring.

In a standing wave at Sutton Bank, during the week-end before Whitsun, Sgt. Bishop reached 7,150 feet in the Kite (using the second wave upwind from the site) and W. Pearce 5,200 ft. The home site is good for thermals: the Grunau has climbed to 4,000 ft., T-21 3,800 ft., and the Cadet has reached cloud base without instruments.

At a week's camp last October, 765 hours' flying included three 5-hour flights, two C tests, and a cross-country of 31 miles out and 8 miles part-return.

Club members turn up regularly from distances of up to 70 miles.

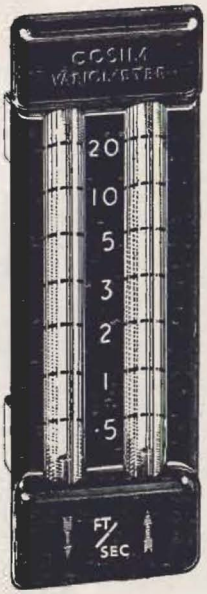
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Scottish Gliding Union

With the hope of eliminating the mountaineering at present inseparable from a day's soaring on Bishop Hill, we spent two days during April trying out a field at the bottom of the Hill from which we thought we could winch-launch to soaring height. To our disgust the place proved quite unsuitable and not one soaring flight resulted. But the experiment yielded much valuable, if bitter experience, and the Tractor Winch very convincingly demonstrated its usefulness for launching in rough country.

After a dispiritingly waveless winter and spring season, the thermals are beginning to bubble once again. Although we have not yet had a really good day, a number of good soaring flights have been made. The best of these was a 55 min. effort by David Hendry in the Olympia. Jimmy Rae had 40 mins. in the Tutor and Bob Porteous gained the year's first C.

Tom Davidson, our C.F.I., soared Bishop Hill for six hours on 13th April to gain his Silver C duration leg. Lift was uncertain until the last hour when an "evening thermal" or weak wave took him to 3,700 ft., his best height.

Efforts are being made to have George Whyte's 60 h.p. Piper Cub authorised for aero-towing. This type has been successfully used in Holland and Finland and also in the U.S. where it tows two-seat Schweizers. Its slow flying speed makes it very suitable, and reports of its performance with a glider in tow indicate that it has, if anything, a better rate of climb than a Tiger or an Auster.

Our sluggish and very thirsty Guy auto-tow truck was recently replaced by a 22 h.p. Ford with very satisfactory results. Another valuable addition to our equipment is a mobile control-van, elegantly decorated in white and yellow dicing, designed and constructed by our C.F.I.

Douglas Fleming recently test-flew the repaired Eon Baby, the wreckage of which he bought from the club over three years ago.

Another casualty which will shortly be returning to service is one of our Cadets, which blew over on Bishop Hill in 1950 and was extensively damaged.

Four courses have been arranged this summer and are filling up very nicely. In view of the B.G.A's expressed disapproval of solo training, we intend this year to use the T-21b for all training after the low-hop stage.

Headquarters Gliding Club 2nd TAF

Two members have completed their Silver C tests this year, one with a cross-country flight to Peine and one with a five-hour flight at Scharfoldendorf.

Otherwise our concentration is on Primary training. We have already enrolled 22 new members this year. The old hands were sadly depleted at the end of last year when a big bunch of them were posted away. We are now building up again, but it takes time. That's the snag of a Service club—you never have anyone for much more than two years.

We hold our competitions (in which all Gliding Clubs in the British Zone can take part) from 15th to 26th June. Given good weather we should achieve some long distances.

T.A.R.S.

Bristol Gliding Club

Elections at the recent Annual General Meeting resulted in a general re-shuffle of club officials. Rex Young, after six invaluable years as chairman, found his other commitments too much, and his place has been reluctantly filled by John Cochrane. Likewise, Millie Smith felt in need of a rest from feeding the multitude and Mary Candy is now chairman of the Ladies' Committee. Other officials are : C.F.I., John Parry-Jones ; Ground Engineer, Doug Jones ; Secretary, John Burleigh ; Treasurer, Dave Michell. The latter announced that once more we had made a profit on the past year, and we had a balance of over £800. Most of this has now been spent on a further loan repayment and on the purchase of a T-31 fuselage and a new V8 for auto-towing and retrieves.

Doug Jones and his small band have nearly finished the annual C. of A's and our second Tutor has reverted to a Cadet after having lost its wings to the T-31. This so-called flying brick, on its first day out, surprised everybody when Doug, with pupil

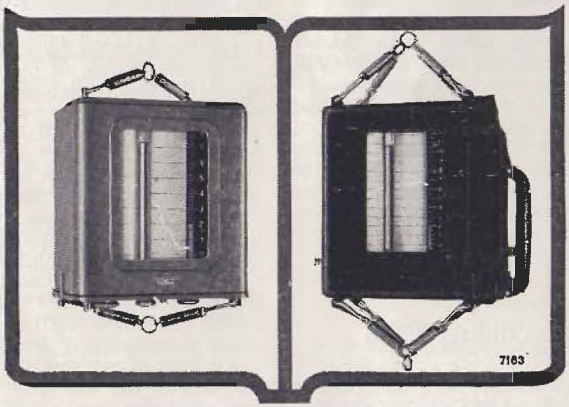
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Pete Henson, took it to 4,200 ft. (twice—nearly) and outclimbed the T-21 which could only manage a humble 2,800 ft. First reactions of both pupils and instructors to the T-31 are very favourable and we intend to use it for training up to circuit stage, thus releasing the T-21 for joy-riding and local soaring.

A party took the Grunau to the Midland Rally at Easter where Alwyn Sutcliffe was fifth in the goal flight to Derby, when he reached Uttoxeter, and incidentally completed his Silver C with height and distance. Mike Hodgson also completed his Silver C on the Tuesday with five hours in weak hill lift and thermals. John Daniell climbed to 5,000 ft. to obtain his height and also to make his first cross-country flight, whilst Fred Smith got his C with 47 minutes.

Over the same Easter period a smaller party flew the Olympia at Roundway, and enjoyed some good soaring in assorted hill lift and thermals. The superiority of the site for soaring, as against Lulsgate, is now undisputed and our new farmer landlord is proving very co-operative. Negotiations are now in progress to obtain the use of fields at the bottom of the slope, when we should be able to exploit the hill lift on many more days.

On Sunday after Easter John Daniell made the first flight this year from Roundway, when, under very hazy conditions, he flew the Grunau 16 miles to Farleigh Castle, reaching 3,800 ft. on the way.

We intend to run our usual summer courses this year and have secured the services of B2 instructor Stuart Fursman full-time. Applications are rolling in steadily and we can promise all comers a very pleasant week in the country.

M.G.

Oxford Gliding Club

MARCH came in more like a lamb than a lion, and flying was possible on every week-end except the last. The T-31b did half of the 250 launches. The 7th was the best soaring day, when Goodall took the Olympia to 3,800 ft. The newly acquired club Grunau Baby was tested on 3rd April and McColl, who took it up for its 5th launch, got his C with a soaring flight of 12 minutes. Ayres had done his first soaring in the Scud II a few minutes before and showed it wasn't chance by taking a second launch which again gave him over 20 minutes. Meanwhile, Stafford-Allen was up for over 1½ hours in the Olympia. John Gibbons got his C in the G.B. on 4th April, and on the 6th Stow and Herbert brought their G.B. out into the daylight for the first time since its C. of A. overhaul. The new vermillion-and-cream colour scheme looked very smart. On 26th April John Graham was passed for the G.B. and took his C on his second flight.

The first week-end in May produced 90 launches and 11½ hours flying, in which Graham put up a very fine show in the Scud and Lawrence Wright and Hugh Latto came over and flew their Olympia. On 5th May Graham was fired with enthusiasm by the look of the morning sky but by the time he was airborne in the Scud the lift had weakened and the hoped-for 1,000-metre climb wasn't achieved.

Saturday, 9th May looked pretty good, but only Worley and Fisher in Kite II and Olympia pilots made anything of it, and then the lift never seemed to be in the same place for two consecutive circles.

Sunday, 10th was at first overcast, but conditions slowly improved, and early in the afternoon soaring was possible. Varley was very lucky to get a launch at 4 p.m. just as real breaks in the sky appeared, and found the easiest soaring of the year, with widespread lift, especially under a mile-wide belt of cloud stretching across wind from N.W. to S.E. In a two-hour flight a visit was made to the A.T.C. School at Weston-on-the-Green, after which the "front" (if such it was) was explored to the west and back to the east, by which time Oxford lay in the sunshine to the N. of it and a second line of weak clouds lay parallel to the "front". Crossing the gap at speed, patches of lift were found under the second line, along which the return flight to Kidlington was made without loss of height.

On 16th May it was almost too windy to fly, and in the two-seater Betty Wigmore was the lucky one to catch the only good thermal, which was left at 1,650 ft. for fear of getting too far downwind. The 17th brought the opportunity for testing out the Tutor, which has been constructed from the old Cadet. This now gives the club a satisfactory fleet of aircraft with which members should be able to make very good use of the local thermals as the summer comes on.

G.C.V.

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