AN INTRODUCTION TO

GLIDING

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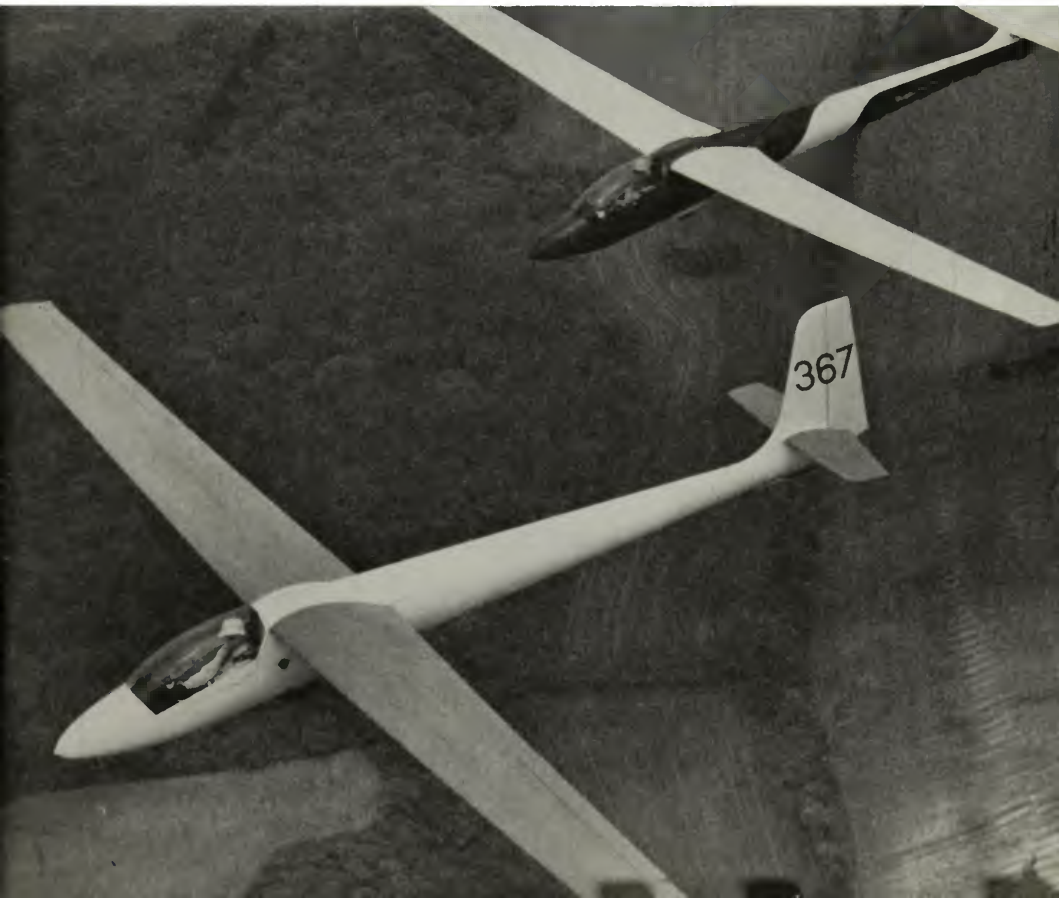

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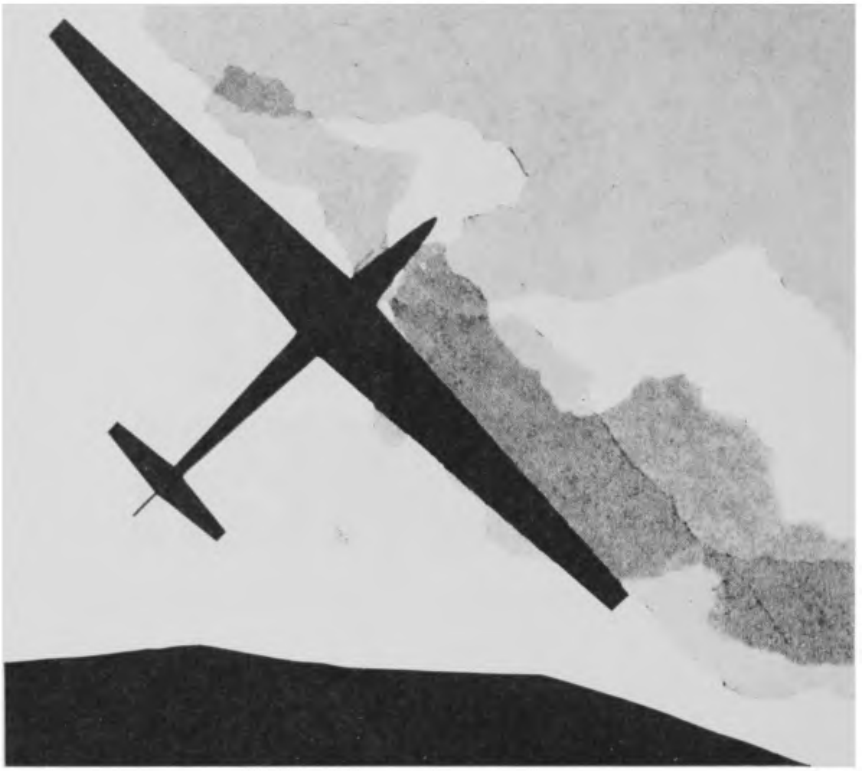

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AN INTRODUCTION TO
GLIDING

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A London Gliding Club publication

cover pictures of Slingsby Dart 15 and 17 by Tony Marshall

Gliding is one of the most exciting and often quite baffling sports ever devised. Unlike most sports men and women are on absolutely equal terms, middle-aged and even elderly pilots frequently do better than youngsters, there are no special uniforms and no snobbery. The important qualifications in a beginner are keenness, readiness to help others and willingness to learn. Given good health and ordinary co-ordination anyone can learn to fly a glider. Physical strength is no asset (except perhaps when the aircraft have to be pushed or lifted about on the ground), for modern gliders are controlled with quite gentle pressures of hand and foot.

COSTS AND COURSES: You don't have to be wealthy. The membership list of the London Gliding Club which is the largest in the country, includes people of every conceivable occupation. Joining the club is quite straightforward the entry fee is 7 guineas, the annual subscription is 10 guineas. (Associate and country members pay less.) How much you spend after joining depends entirely on how much flying you do. Alternatively and better in many respects, you could join a fortnight's residential course during the summer and get through the initial training stage quickly.

EARLY FLIGHTS: To begin with progress seems slow as it does with anything new. You watch enviously as more experienced pilots climb into their graceful craft and sail away while you grind round in the two-seater making skidding turns and sloppy landings. Even more often you work on the ground, driving tractors, waving signal bats, running with wingtips. The club employs several full-time professional instructors and ground engineers, but all the less skilled jobs are done by ordinary members. Even on the ground there is much to learn; how to park a glider safely, how to inspect it before flying, how to drive a winch, keep the flying log, even how to repair damaged equipment and build new winches and other apparatus. Eventually, after something like forty or fifty short flights with the instructors and probably a few longer soaring trips, you find yourself surprised and a bit apprehensive sitting all alone in a narrow cockpit ready to be towed up on your first solo. All goes perfectly and after your first solo you will probably do two or three more straight off, to qualify for your B Certificate.

STAYING UP LONGER: Now the fun really starts—and the difficulties are of a different kind. You know how to control the glider, take off, climb on the launch, turn this way or that and land safely. But other people stay up all day long while you just fly round the circuit and trundle back onto the ground again within five minutes. You listen to their talk in the club restaurant and in the bar after flying, quiz the instructors, read books and magazines, fly with experts in a high-performance two seater. Then you learn to hill soar and obtain your C Certificate which is a big step forward.

The ridge of the Chiltern Hills which runs from near Dunstable to Whipsnade, with a steep west-facing slope forms an obstruction to the prevailing westerly or south-westerly winds. Since the moving air cannot go through the hill it must go upwards to get over it. This produces an area of upcurrent in front of and above the slope so when the wind is 'on the hill' gliders, sometimes twenty or more at a time, can beat up and down for hours at heights between four and eight hundred feet.

Then you catch and hold your first thermal.

THERMALS: Thermals are bubbles of rising warm air, their presence often marked by a growing cloud and on entering one it can usually be felt surging up under the wings. A sensitive instrument, the variometer confirms your judgment. Now you must learn to recognise and 'centre' thermals, for merely blundering into one is not enough. Other gliders will probably be circling nearby so you must keep a good lookout to avoid collision and also decide where the next thermal is likely to be. There's a cloud over there, but it looks a bit ragged.

Flying low over the car park, a pilot 'beats-up' the ridge at Dunstable.

Probably the upcurrent that made it is already fading. Further on, there's a growing puff of white cloud over a village, but you aren't high enough to reach it. Suddenly you have lost the thermal—thinking so hard about the next one your flying became inaccurate, the circles uneven, and you drifted out of the rising air. The glider feels soggy, the variometer confirms you are sinking. Turn to the left then to the right to try and find the 'lift' again but it seems to have gone. You glide away. This is a mistake, for looking back you see another glider still climbing in the place so recently left.

CROSS-COUNTRY FLYING: By the time you arrive below the other machine and find the thermal again, the other pilot has risen two-thousand feet. He speeds off like an arrow towards that puff of cloud now much larger, you had picked out ten minutes before. Struggling to gain height you watch him out of the corner of your eye as he spirals upwards under it, then glides off again into the distance and out of sight. That's how it's done!

In the thermals you must circle accurately, flying slowly but always in the best lift. Then you straighten out at the top of the climb, speed up by inclining the nose down a little and glide swiftly across the wide gap to the next thermal. Climbing again you must pick out the next growing cloud. If you choose wrongly reach it too late or fly clumsily you will soon be on the ground again.

NAVIGATION: Suddenly you are lost. You've never seen that peculiar looking river before. Where's the clubhouse? There is a town on one side, a stately home below, a cement works, a huge disused aerodrome, but where are you? With relief you pick out the famous Whipsnade white lion on the hill and the club field.

ADVANCED FLYING AND COMPETITIONS

You will one day be able to keep up with that other pilot, the one who passed you—he covered nearly two hundred miles and ended the day having tea and toast in a west-country farmhouse after landing in a pasture field. Go with a trailer to retrieve him. On the long journey back dreaming; you'll manage it next year, perhaps get your Silver C, even a Gold, and possibly add a Diamond or two as well! You might hire a radio and chat to other pilots in the air, exchanging information about conditions with gliders over Hampshire, Shropshire or the Midlands. Or fit oxygen apparatus and climb high in the clouds, wings sprouting ice, or take a trip to Scotland and ride the mountain waves to twenty thousand feet. You could enter competitions . . . or maybe just be content to spend your Sunday afternoons floating quietly around in the sunshine. That's gliding.

First steps in hill soaring—again at Dunstable.

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STARTING OUT . . .

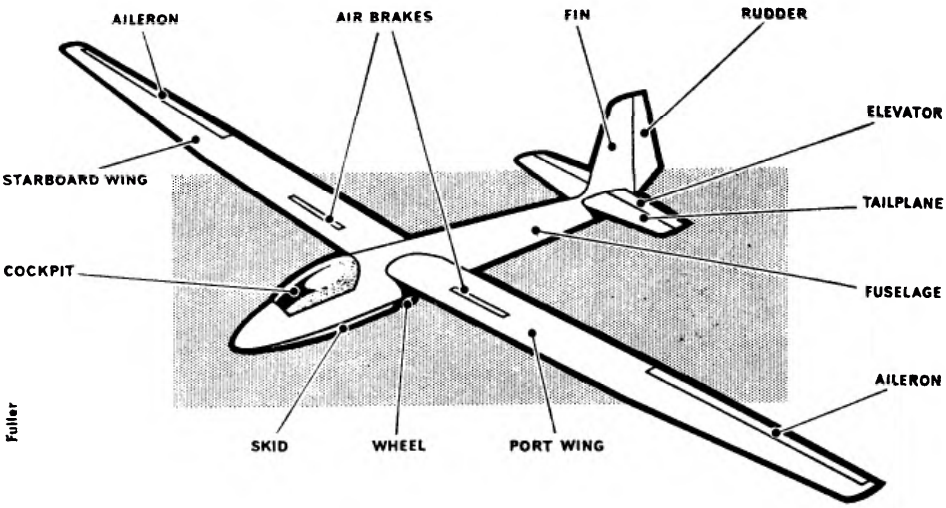
The best way to start is to join a two-week residential course at Dunstable. A brochure and application form can be obtained from the club manager. After two weeks of reasonable weather an average beginner would be at or very close to solo standard—that is, he would be able to fly club single-seat gliders. He would, however, still be under supervision and would have several more instructional flights in the two-seater to come. Failing a fortnight to spare for a course, shorter periods can sometimes be arranged. At weekends and at certain times midweek, the club also trains pilots who cannot get time off for the more intensive course. Since the waiting list for instruction is nearly always long, learning to fly in this way can become rather frustrating. Nevertheless many pilots who have been keen enough to come regularly every weekend, get up early to start preparation for the day's flying and who have persevered even in the cold, short days of the winter, usually advance successfully from the most elementary stages to competition flying in about three years. To get to solo standard this way will probably require several months of regular weekend attendance, and this would be followed by at least one summer season of solo flying before any cross country flights would be achieved. To gain Silver C (required before entering competitions) in the first season, a weekend pilot would have to be either extraordinarily lucky or unusually able. Most people could reasonably expect to make the attempt in their second flying season.

DOES IT HELP POWER FLYING?

The days when people took up gliding as a cheap substitute for power flying have long gone. It is still cheaper than flying aeroplanes but it is a highly developed sport in its own right and glider pilots are not interested in power flying except as a means of launching gliders. Quite often in fact professional aeroplane pilots take up gliding in the same way as a sea captain might be interested in yachting.

All the same a pilot who has advanced beyond the elementary stages in gliding can if he so wishes, learn to fly with an engine and he will probably go solo much quicker than someone with no flying experience. He will find the power flying world considerably more governed by formality, regulation and certification, and unless he is anxious to perform aerobatics, or to enter aeroplane races, he is likely to find aerial bus driving rather unexciting after a while. The modern light aeroplane has become something like the modern car—a useful, reliable and fast means of transport, most valuable when hurrying about one's business but not in the long run very much fun.

Commercial flying and gliding sometimes find their interests actually conflicting. Large zones in the air are allocated exclusively to airliners or military aircraft, and in the other areas glider flights are restricted in the interests of safety. Every year, it seems, more air space is lost to sport and pleasure flying of every kind. A most regrettable development.



THE GLIDER AND ITS COMPONENTS

ABOUT GLIDERS

OWNERSHIP: The London Gliding Club owns five two seater and eight single seat gliders for hire to club members at between 15s and 30s per hour in the air. Also on the site, stored ready for use in the long two-wheeled road trailers, are about thirty privately-owned gliders. Each of these is operated and owned by a group of three or four friends who have pooled their resources to purchase the aircraft.

COST: A new high performance glider can cost from £1,400 to over £3,000. The more highly priced machines are very rare, the gliders at Dunstable nearly all come in the lower price brackets. Excellent second-hand gliders still capable of winning competitions can be purchased for less than £1,000, while some of the older types flown nowadays mainly by 'vintage' enthusiasts, can be picked up for less than £300.

SIZE: The most important dimension of a glider is its wingspan, from tip to tip. In general, the longer narrower and thinner the wing the better the glider and the higher its price. High performance machines usually span between 55 and 65 ft (17 to 20 metres). The Standard class is fixed at 15 metres (49¼ ft).

WEIGHT: With pilot, parachute and instruments a typical high performance glider weighs about 800 lbs or 550 lbs empty. Although light compared with aeroplanes of similar wing area, it is no advantage these days to have a very lightly built glider. For cross-country flying in good weather heavy gliders have a distinct advantage, some actually carry water ballast tanks to give them greater 'penetration' when the thermals are strong. The ballast is dropped in the evening when upcurrents weaken.

CONSTRUCTION: Older gliders were invariably made of wood, usually a spruce framework covered with thin birch or gaboon plywood and cotton fabric, doped and painted. Now many components are made of glass fibre, light alloys and steel tubing. Some modern types like the HP14 and Blanik are all metal and in Germany several companies are building gliders entirely in glass fibre. A vital feature of modern gliders is the smoothness of the wing. Ripples in the covering, even specks of dirt or blobs of paint on the leading edge of the wing can reduce the performance of a glider by a third Pilots notice an immediate difference in their 'gliding angle' if they fly through rain, the droplets of water on the wing being more than enough to spoil the airflow.

PERFORMANCE: Most modern gliders have a best sinking rate of about two feet a second (120 ft per minute). This means that when carefully flown they can gain height in upcurrents of greater speed than that, and such upcurrents are not rare—climbs of three or four hundred feet a minute are common; six hundred feet a minute is considered very good. After climbing in one upcurrent, the pilot needs to sweep a large area so that he has a good chance of finding the next one. He therefore judges the performance of the glider in terms of its gliding angle or 'glide ratio'. The best (and most costly) machines can achieve ratios of

more than 40:1; that in still air they can glide forty miles from a height of 5,280 ft. A more typical machine like the Dart 17 has a ratio about 36:1, while a trainer like a T21 or Prefect achieves only 15:1.

To make headway across country it is also important to have a glider that can achieve a good, flat gliding angle at a high forward speed. It is not at all uncommon for pilots to cruise between upcurrents at eighty or ninety mph and we shall soon see speeds over 100 mph.

TRAILERS: A glider's trailer is an important piece of equipment, used both for storing the machine between flights and for retrieving it after an 'out landing' which might easily be one or two hundred miles from base. The trailer is designed for roadworthiness, balance and weather-proofing. Inside there are elaborate fittings and padded cradles for the wings, tail and fuselage to rest in. Plywood is usually employed for the body but metal and glass fibre have been used at rather higher cost.

THE CONTROLS

The glider pilot's controls are much the same as those of a power pilot. The ailerons on the wings are used for banking and turning, a sideways movement of the control stick causes one aileron to hinge up as the other goes down. As a turning aid to stop side-slipping and skidding, the rudder is operated by the pilot's feet on pedals. To build up speed and dive the control stick is moved forwards which depresses the elevators and raises the tail; to slow down and lift the glider's nose the stick is moved back, raising the elevator and thus depressing the tail. Since there is no engine, a 'stall' involving loss of height will be experienced if the glider's nose is raised too far. This manoeuvre is quite pleasant to perform and is part of the normal training of all pilots. The air brakes, used in landing or to check speeds in blind flying, are operated by a simple push-pull lever usually on the left of the cockpit. The trim tab is also operable in flight, not all gliders have this refinement.

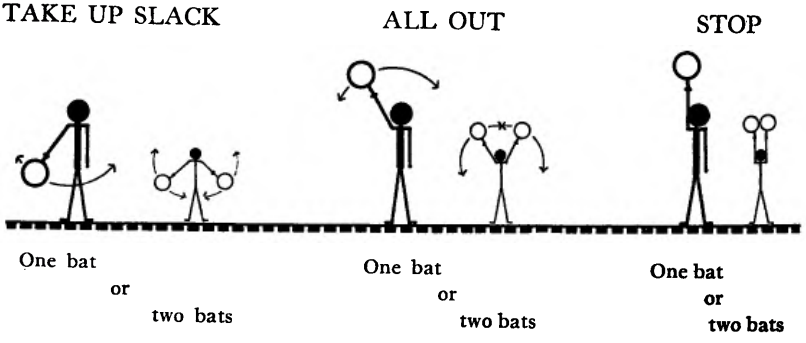
FROM THE PILOT'S SEAT

Imagine you are sitting in the cockpit of a modern single seat high performance glider, although sitting is not strictly accurate. You will almost certainly be half lying on your back and in some types right down, head raised slightly on a little pad, feet on the rudder pedals beyond the instrument panel. This semi-reclining attitude is the glider designer's device for cutting down head resistance. Motor cyclists lean forward, glider pilots lean back and are faired into a beautifully shaped streamlined perspex canopy. This position is very comfortable—and needs to be for the pilot may be sitting or lying there for several hours. There is little room to move—the perspex is only an inch above the head and the sides of the cockpit touch the shoulders unless the pilot is slim. Your bottom will be an inch or two off the ground with a mere couple of millimetres of ply, metal or glass fibre beneath.

On the left is a lever—the air brakes. Pull it to open them, push it to lock shut. The main joystick or control column is within easy reach, in some designs nowadays it comes in from the side of the cockpit to enable the designer to squeeze another square inch off the frontal area. To the right there will probably be another lever for operating the retractable wheel. It comes up with a satisfying clunk when the glider is off the ground—but don't forget to lower it again when landing! Also on the right is a small knob for the tail trimmer—this will help to set a constant flying speed. Move it forward to fly faster, back to fly slowly but it is only an auxiliary to the main control column. Somewhere behind the head there will probably be a radio on the glider frequency and the microphone can be clipped to the parachute straps or to the straps that keep you firmly in that reclining seat. You will have a notepad strapped to your knee and air maps in a side pocket or somewhere down the side of the cockpit where they can be easily reached. Ticking away in a special compartment under the back is the barograph which will record the height on a revolving drum chart as the machine flies. This will be needed as evidence if you do anything remarkable—no 'fishing' yarns in gliding! Also, clipped to a little bracket on the side of the transparent canopy will be your little camera—cheap but necessary to photograph turning points as you pass round them at three or four thousand feet.

Is it loaded with new film? Sealed by an official observer? Right. Check the instruments. The altimeter: set it to zero, but remember once you leave the local area to re-set it to the international 'sea-level' equivalent so that your height will be intelligible to other pilots. The air speed indicator reads in knots up to 140 but you will probably never see it beyond 120. The variometers: there are several of these very sensitive climb and descent indicators scaled in knots again up to eight or ten, but to see '10 up' is unlikely unless conditions are really extraordinary. One variometer is mechanical. It's working already for as the wind eddies round the glider on the ground the needle quivers a little. The second one is electric. Switch it on. The needle flickers, and a sudden buzzing noise comes from a little speaker near the left ear. This

Above: Towing out to the launch point. Below: Aerotowing in progress. Bottom: Winch launch signals



instrument works an 'audio', indicating whether the glider is rising or falling without even having to look at the panel. Very useful if you are sharing a thermal with a dozen other gliders. Keep your eyes out of the 'office' and watch out for the others! The third variometer is a bit crude—a standby in case the more elaborate ones fail. A little green pip pops up in a tube if you climb, a red one pops up if you lose height. It is rather sluggish in response but it never goes wrong. Then there's the artificial horizon. Switch it on and hear the gyros revving up. Also run up the turn and slip indicator. Then switch them both off; you'll only need those two if you enter cloud. Then they will be needed badly! Yes, and you might need the oxygen. Is the mask handy? Can you reach the regulator valve? O.K. What else? Oh yes, the 'G meter', which will indicate the loads being placed on the wings if you decide to do a few aerobatics. Then there's that new instrument, the one that measures the rate of climb or descent over the last several minutes. Useful for getting the best out of a thermal. And there's the small panel clock which needs rewinding. It has a stop hand for timing climbs and races. Mounted on a bracket well away from the electrical gear, is the compass and finally the little circular slide rule type calculator which will tell you how far the machine will glide from a given height against or with whatever wind is blowing. All ready now? Oh no! Sandwiches and a drink bottle, and that other bottle, and you still haven't decided where to go. What shall it be, Evesham, Andover, land back at Dunstable? It looks a good day, it might be on so scribble hastily 'I declare 300 kilometre triangle attempt: Dunstable, Evesham, Andover Aerodrome, Dunstable'. Sign it, give it to the observer—he smiles and wishes you luck knowing as you do that you probably won't make it. They'll have to pick you out of some farmer's field this evening, but you never know today might be the great day!

LAUNCHING GLIDERS

The earliest method of launching gliders was the rubber catapult or 'bungey'. A 'V' of elastic rope was hooked onto the nose of the glider while teams of ten or more men stretched the catapult by running down the hill in front. Behind, one or two more men would hold the tail skid of the glider letting go only when they could hold it no longer. The resulting launch though fairly sudden, was smooth and usually placed the pilot immediately in a 'slope wind' so he could gain further height by slope soaring.

The next development was the auto-tow, a long cable being attached to a car, the other end to the pilot-operated release hook on the glider. This method is still much used at clubs on airfields where there are long runways. The car drives away into wind at about thirty or forty mph with the glider rising behind like a kite on a string. The height reached depends mainly on the length of the cable and the runway—1,500 ft is not exceptional.

The winch launch as used at Dunstable, is similar in principle to the auto-tow but the cable is wound in on the winch drum. The method is suitable for smaller fields without runways where the ground is rough or uneven. Heights obtained vary from 400 to 1,000 ft depending on conditions and the characteristics of the glider. Some machines (eg, Prefects and Ka 6's) can climb very steeply, others at a slighter angle.

In both auto—and winch launching the cable incorporates a 'weak link' at the glider end. This will break if the pilot tries to climb too steeply or if a very severe gust strikes the wings. The weak link will part long before any too-great stress is placed on the glider's structure. Costs vary, but a winch launch at Dunstable is 6s 6d.

The aero-tow is the best method of launching but also the most expensive costing about 25s a time for a tow to the usual release height of 2,000 ft. The tug pilot is almost always himself a glider pilot—very probably he took up power flying chiefly in order to help his fellow club members. He thus knows where thermals are likely to be found and tows the glider to them. The glider pilot will often release before reaching 2,000 ft if he feels a thermal and will then begin circling at once as the tug dives away. This saves both money and time. Speeds on tow are usually about the 50 or 60 mph mark. The rope used is nylon or hemp about 100 ft long.

Over the years many gliders have been fitted with little engines on the 'outboard motor' principle. The idea is to take off with the engine like an aeroplane, find a thermal and then switch off the engine and revert to gliding flight. At the end of the day the engine is re-started and the aircraft flown home if it has landed away. Unfortunately this attractive notion has so far failed to catch on. The addition of an engine involves a great deal of clever engineering if the glider's performance is not to be ruined. A protruding propeller, cylinder heads or radiator system cause a great deal of drag, the wings have to be made bigger and stronger to carry the extra weight, and space has to be found for fuel. In spite of these snags 'motor glider' competitions are held regularly in Germany and we may see them here some day.

THE SAFETY ASPECT

One question everyone asks about gliding is always whether it is very dangerous. Gliding people are not desperate daredevils but all the same, gliding is flying and it has some inherent safety problems. In landing, for instance, if a pilot makes a serious misjudgment of height distance or speed he might fly into the hedge at one end or other of his landing field. If he did this in a power plane he might be burned in the resulting fire. In a glider there will be no fire, the aircraft will not hit the hedge at more than thirty or forty mph and the chances of his escaping scot free are therefore high. Not so the glider itself—this will certainly be badly broken. A glider pilot only gets one opportunity to plan his landing—he cannot open up the engine and 'go round again' as a power pilot can.

On take off, gliding's problems are slightly different again, for since some kind of towed start is always used, signalling and team work are necessary. The pilot himself does a check of all the glider's controls and instruments before starting the signalling process. The signaller keeps a sharp lookout and the winch driver or tug pilot is also on the alert for anything going wrong. If anything does, like the glider running forward over the towing cable or rope, there is a standard procedure for stopping the take-off instantly. The pilot can always release himself if he is not satisfied that all is well. On a winch launch, the cable, or more likely the special 'weak link' included in its make up, may break when the glider is climbing steeply (see notes on winch launching). This is only dangerous if the pilot has not been taught how to cope—which he does by returning the glider to normal level flight and landing.

In the air, since gliders are carefully inspected

CERTIFICATES & BADGES

SOARING BADGES

No licence is needed to start gliding. You qualify as you go along. After the first solo flight the pilot gains his **A Certificate** and is entitled to wear a badge with a single white bird on a blue disc. The **B Certificate** involves three solo flights with turns in both directions and the badge has two birds. The **C Certificate** requires a soaring flight of more than five minutes, preferably twenty or thirty to make sure of it. There is also a written examination in air law and airmanship. The C badge carries three birds and its possession marks the pilot as a **soaring** pilot, distinct from one who can only glide down after the launch. Next comes the **Bronze C** which is more elaborate, being a compulsory test before the pilot is permitted to go on cross-country flights. He must make two flights of more than thirty minutes each, carry out an accurately judged 'spot' landing, and satisfy an instructor on general airmanship and flying during two flights in a two-seater. There is a further written test in meteorology, elementary aerodynamics and airmanship. The badge is like the C badge but carries a small bronze filigree along the top edge.

The next step forward is represented by the International **Silver C**. To gain this the pilot must perform three tasks, any two of which may be in one flight or all three separately : a duration flight of five hours, a height gain of 1,000 metres (3,281 ft) and a cross country flight of 50 kilometres (32 miles).

The Silver C badge carries three birds on the blue disc, with a full silver wreath round the outer edge. Between eighty and a hundred

before flying each day and since their design and construction are submitted to rigorous supervision, breakages are very rare indeed. Only if a pilot is stupid enough to deliberately exceed the speed and stress limits of his machine can he get into difficulties and even then he has his parachute as second defence.

Two hazards which have appeared in recent years caused certain changes to be made in the instruction procedures. One of these is the danger of actually colliding with another glider in the air. The other occurs only in advanced flying in very large thunder clouds. A few gliders have been struck by lightning and damaged, the extent of damage varying from slight to very serious. The pilots have suffered only slight after effects and have been able to bring their machines to earth again safely, or in the worst cases, bale out. Gliders for cloud flying are now electrically bonded to protect the pilot from lightning shock and with the advent of all metal construction the danger of structural damage is lessened. Nonetheless, parachutes are always worn when entering cloud.

A cross country pilot will look out for a suitable field if he gets down to 2,000 feet. From this height, even in a training glider, he can glide four or five miles in any direction and still have several hundred feet in hand to make his approach and landing. In Britain there is always somewhere suitable for a touch-down within that distance. If he chooses badly, for instance if he mistakes a field of green corn for grass, he might still damage the aircraft. The best landing grounds are cut hay or stubble fields, next in order of preference come pasture fields without cattle in them. There are in fact many aerodromes where gliders are welcomed and other gliding clubs make the very best 'dropping in' places for pilots on distance flights. The real expert, however, probably never has to 'land away', he sets off round a triangular course of some hundred or two hundred miles and completes the circuit back at his club.

British pilots complete their Silver C each year, but the number qualified is just over 2,000.

The **Gold C** badge carries a gold wreath. This requires a height gain of 3,000 metres (9,850 ft) and a cross-country flight of 300 km (186 miles). Fewer than 200 pilots in Britain had achieved this by 1967. The height climb would almost certainly require either an extended period of blind flying in a large cloud, or an ascent in a mountain lee-wave, the latter being a rare condition except in the highland regions. The distance flight would take a pilot from Dunstable to Durham, Plymouth or Anglesey but could be achieved by performing a 'dog leg' flight round a specified turning point (for which photographic evidence is needed.

A Gold C pilot may win up to three diamonds' but so far only a very small handful of British pilots have gained all three, and some of their flights were made abroad. The first diamond may be gained at the same time as the Gold distance test, if the pilot reaches a pre-declared goal 300 km away from his tow-released point. Thus a pilot might declare in writing his intention to fly to an airfield in Durham and if he reached it would win a diamond as well as Gold distance. The second diamond would probably come from a thunderstorm flight or wave ascent to more than 5,000 metres (16,400 ft) above tow-release. This would require oxygen breathing equipment. The third diamond is the most elusive for British pilots, involving a 500 km (311 miles) distance flight. From Dunstable the only directions in which this can be achieved in a straight line would take the glider across the Firth of Forth, into Western Ireland or into Germany. Every British pilot's secret ambition is to gain his third diamond by completing a '500 km triangle', ie taking off from the home site to fly first to a turning point over 100 miles away, then to a second turn 100 miles from the first and finally to fly back home to complete a 311 mile triangular trip. No one in the country has achieved this, though close to it.

A BRIEF HISTORY

Sir George Cayley in the early years of last century was the first man to build a successful glider. He made many experimental models and launched his garden boy and then his coachman into flight across a small valley on the Cayley estate in Yorkshire. The coachman resigned on the spot. Lilienthal in Germany, Pilcher in England and Chanute in America also flew gliders later in the 19th century and finally the Wright Brothers, hearing of Lilienthal's work carried it further, developed a satisfactory method of control and built several gliders, to one of which they eventually fitted an engine to be the first successful powered plane in 1903.

Interest in gliding then waned till after the first World War, when a group of youths in Germany began gliding at the Wasserkuppe in the Rhon Mountains. The first soaring flights were made by the Wrights in 1911, one lasting as long as 11 minutes. The Rhon group by 1922 achieved flights up to three hours duration, and the gliding movement developed from then on very rapidly in Germany with distance flights, altitude gains and competitions. It is still very popular in that country. The movement did not really begin seriously in England until 1930, although gliding was held in Sussex in 1922.

The London Club was formed in 1930 a few weeks later than the Kent Club, which later fell on hard times and for some years ceased to exist. (Now flourishing again.) The London Club began operations at Ivinghoe Beacon a few weeks after the foundation meeting, but crowds of spectators gathering at Ivinghoe were so great that the police compelled the club to seek a new site. The present site, which has always included a piece of land on top of Dunstable Downs as well as at the foot, was rented in late 1930 and was eventually bought outright. The clubhouse and hangar now used were built in 1936 to the designs of a member who was a leading architect. Aeroplane towing began in the same year, using Avro 504 biplanes. With the 1939-45 war, the club premises were used as a prison camp. The field still bears the marks of the fence posts which make landings rather bumpy in places. The wooden hut which was the first clubhouse still stands, but two others were added for the prisoners. The brick detention cells are now used for storing paint and fuel for the club tractors.

Since bungey launching from the hill top is now very rare, the club land on the Downs has been turned into a car park and although no charge is normally made for parking there, the club does reserve the right to charge for admission at the time of the annual air display.

In recent years the club has enlarged its field by further purchases of land on the southern side and a large scale levelling operation has been launched to fill in the central, steep-sided hollow which restricts operations and makes launching and landing rather tricky.

Something like 20,000 launches are made each year, the number has been increasing steadily since 1950. Most of these are short, training flights by club two seaters. The flying membership of the club is now at about 450.

SOME SINGLE SEATER RECORDS

DURATION: The record here stands at 56 hours 15 mins, this being achieved by a Frenchman Charles Atger in 1952. Attempts to better this led to a serious accident when a pilot apparently fell asleep in the air and was killed after more than 48 hours. Duration records are therefore no longer recognised and no further attempts to break them are permitted.

ALTITUDE: The world record was set up in California in a mountain wave and stands at 46,267 ft above sea level, 42,303 ft above the height of release from tow. The pilot was Paul Bikle. The British National Record set up by Nick Goodhart is 37,050 ft, also done in California. The best figure for England is G. J. Rondel's climb to 30,580 ft.

DISTANCE: Again by an American Al Parker, the distance record in a straight line is 647 miles. The British record was broken in Germany by P. Lane with 460 miles, the best achieved in Britain itself being Nick Goodhart's 360 miles.

SPEEDS ROUND A TRIANGULAR COURSE:

The best time so far achieved for a 100 km (64 mile) triangular circuit is 79.77 mph by George Moffat USA, the best in Britain is 48.0 mph by Ian Strachan.

The 300 km World Record is also Moffatt's, with 74.48 mph, the best figure in English conditions is Nick Goodhart's 41.2 mph.

The 500 km triangle at the time of writing has never been completed in Britain. The world record for this is 66.56 mph, Anne Burns, the former British Champion, achieved 64.2 mph in South Africa.

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