No.1 GLIDING CENTRE

Royal Air Force Swanton Morley

The Commanding Officer, officers, NCO's, Airmen and Airwomen of Royal Air Force Swanton Morley welcome you to the Station and hope that you have a happy and successful week.

ROYAL AIR FORCE SWANTON MORLEY

Royal Air Force Swanton Morley is the Central Servicing Development Establishment of the RAF and has as a lodger unit No. 1 Gliding Centre. Gliders of No.611 Gliding School fly at weekends. The other users of the airfield is the Norfolk and Norwich Aero Club.

The history of Swanton Morley began in 1939 when the station was opened as a fighter base, but was soon found to be more suitable as a bomber unit. During World War II, Headquarters Nos. 2 and 100 Groups were stationed here, their squadrons operating Blenheim, Boston, Hudson and Mitchell aircraft. Typhoon fighter-bombers and long range Spitfire bomber escorts were also based here.

Soon after the war ended in 1945, the Station passed to Flying Training Command and round-the-clock flying training was carried out with Ansons, Oxfords and Wellingtons.

In 1946/47 the Station changed hands again, this time to Technical Training Command, when No.4 Radio School moved in with their task of training Air Signallers. At the same time Swanton Morley became the main Ground Defence Training Unit for the RAF.

Flying Training Command returned in 1950 and the Station re-assumed its character of the 1945/46 days with intensive flying training on Ansons, Prentices and Proctors. The Unit No. 1 Air Signallers School were the proud possessors of 'Rebecca', a donkey named after the radio instrument, and carried on the strength of the unit as a mascot.

In 1957, the unit now in occupation, CSDE, moved in under Home Command control, and later under Maintenance Command when the former ceased to function. The airfield came into fulltime use again when No. 1 Gliding Centre of Flying Training Command arrived here in January 1962 from RAF Hawkinge, Kent, when that Station closed down.

NO 1 GLIDING CENTRE

No 1 Gliding Centre was originally formed at Detling, Kent, as Home Command Gliding Instructors' School. Its task was to train instructors for all the Air Training Corps weekend Gliding Schools at the time of the expansion of the organisation. With completion of that task, the Unit moved to Hawkinge in 1956, taking on its present commitment, and came to Swanton Morley in January 1962, when Hawkinge closed.

The Centre is not only responsible for training ATC and CCF Cadets to the ATC Proficiency and Advanced Gliding Standard each year, but also trains gliding instructors required by the weekend Schools. In addition, each Gliding School in the Southern half of England is inspected at least three times a year, and all their instructors tested to see that they maintain safe standards. Finally, one Primary Glider Instructors' Course is run each year.

In the fourteen years ended 31st December 1969, the unit completed the following:-

Launches	-	228,563
Flying Hours	-	12,950
Cadets Trained	-	5,088

YOUR INSTRUCTORS

Sqn Ldr D.J. CURTIS, MBE Officer Commanding, A flying instructor since 1944, instructing on fourteen different types of aircraft ranging from Tiger Moth to Hunter Mk VII including Mosquito, Meteor and Varsity. Arrived No. 1 Gliding Centre January 1970 from No. 21 Squadron Air Support Command flying Pembroke and Devon aircraft.

Flt Lt I.LADLEY Chief Flying Instructor. Wartime Fighter Pilot. Flying Instructor since 1949. Flown gliders in Germany and Canada. Joined the Unit in 1954.

Flt Lt D.G.KING Wartime service pilot. Has flown gliders in Germany, Canada and Spain. An ATC Gliding Instructor since 1949.

Flt Lt N.J.MACLEOD OC 'B' Flight. Wartime Transport Command Navigator. Began gliding in Germany 1949. ATC Instructor since 1950. OC No.663 Gliding School Abbotsinch prior to joining this Unit.

Flt Lt S.J.EASTON OC 'A' Flight. Started gliding as ATC cadet in 1956. Staff Cadet at 616 Gliding School 1958. Instructor with 616 from 1960 until appointed to the staff of No. 1 Gliding Centre in 1966.

Flt Lt R.W.A.MILLER Learned to glide as cadet at No. 613 Gliding School, Halton, in 1957. Staff Cadet and then instructor until 1967 when appointed to the staff of No. 1 Gliding Centre.

Flt Lt A.C.POND Began gliding in 1945 as a cadet. Subsequently served with Nos. 129, 142, 614 and 616 Gliding School as Instructor until appointed to No. 1 Gliding Centre in 1967. Nigel Westlake.

Between them, the Instructors of the Unit have completed over 105,000 launches.

2A

The Centre's Instructors have flown the following types of Gliders and Sailplanes:-

Single Seater Gliders and Sailplanes		Two Seater Gliders and Sailplanes	
Cadet Mk. 1	Sky	Sedbergh	Bocian
Cadet Mk 2	Skylark 2	Cadet Mk.3	Gull 2
Prefect	Skylark 3	Kranich	King Kite
Grasshopper	Skylark 4	Falcon 3	T 53 B
Olympia 2B	Swallow	Capstan T49	Berfalke 3
Olympia 401	Ka 6 CR	Blanik L13	Berliner
Olympia 403	Ka 6E	Eagle	Schweizer
Olympia 419	Ka 8B	Ka 2	2-22
Olympia 460	S.F.26	Ka 7	
Olympia 463	Mucha Standard	Ka 13	
Olympia 465	Vasama	Goevier	
Mu 13B	Standard Austria	Harbinger	
Mu 17	S.H.K.	Ka 4	
S.G.38	Cumulus 2	Cangaroo	
Grunau Baby	Pirat		
Weihe	M 100 S		
Rhonbuzzard	ASW 15		
Gull 1	Foka 4		
Kite 1	Libelle		
Kite 2	Dart Prototype		
Eton	Dart 15		
Eon Baby	Dart 17R		
Meise	Diamant 16.5		
Phoebus	Diamant 18		
Mimimoa			

PROFICIENCY GLIDING COURSE

During the Course you must, to qualify for the award of the ATC Proficiency Gliding Certificate, complete at least 25 launches, three of which must be solo. By qualifying for the award of the Proficiency Certificate you will also automatically qualify for the British Gliding Association's 'A' and 'B' Certificates. Flying Scholarship graduates need to complete a minimum of 15 launches, including three solo.

FLYING SCHORLARSHIPS

Some amongst you may one day appear before a Flying Scholarship Board. Remember that the report you get from No. 1 Gliding Centre may influence the members of the Board. This report is written by your Gliding Instructors and the Commanding Officer - it does not depend on gliding ability alone, but also on initiative, keenness, self-discipline, cheerfulness and hard work.

HOURS OF WORK

On the first day of the Course, after breakfast and tidying your billet, you will march to the Gliding Centre with the Senior Cadet in charge. There you will meet a member of the Gliding Centre staff who will receive your log books and completed arrival forms and issue you with flying clothing. It is essential that you complete your arrival form correctly as your personal details - name, initials, Squadron (No. and name) and Wing or CCF Unit - are taken from them for the completion of your Gliding Certificate.

On succeeding days you will report at 0800 hours to the Centre. Lunch is from 1230 to 1325 hours. The working day normally ends at 1630 hours.

DISCIPLINE

The Senior Cadet will be in command of the course at all times. When proceeding to and from the Centre the course will march as one body under the command of the Senior Cadet. Compliments will be paid to all Officers in the proper manner.

You are to be correctly dressed in uniform at all times when outside your billet in working hours, but civilian clothes may be worn after duty hours. Flying kit will be worn on the airfield or in the vicinity of the hangar.

For each of you to complete the minimum requirement of 25 launches, it is necessary to maintain the highest possible launch rate. A high launch rate demands a high degree of organisation, keenness, speed and hard work in the ground-handling of gliders, attaching cables, retrieving gliders to the Launch Point, signalling and timekeeping duties etc., all duties which you, as cadets on the course, will have to carry out. The number of launches which each of you will complete depends directly on the effort which you, as a team, put into the work.

You are expected to learn the ground organisation quickly and get on with it without being told what to do next.

Slackness will not be tolerated.

WELFARE

While you are at Swanton Morley, the Officer Commanding No 1 Gliding Centre is responsible for your well-being. Should you have any trouble or worry of a personal nature, then ask to see the CO and he will try to clear up the matter. You cannot give the required concentration to learning to fly if your mind is distracted by even some minor problem, so do not be afraid to pass it on.

ASTRA CINEMA RAF SWANTON MORLEY

The Station Cinema opens at 1945 hours on Tuesdays and at 1945 hours on Fridays. The programme is changed for each night and commences at 2000 hours on Tuesdays and 2000 hours on Fridays.

NOTES FOR PROFICIENCY GLIDING COURSES

FOREWARD

1. Read these notes carefully BEFORE and AFTER each exercise. They summarise in simple language the basic knowledge you need to complete the Course successfully and give explanation and advice which will help you to understand the instructions given in the air.

2. The time spent in the air on each launch is only three or four minutes, so it is important that you understand the instructions given to you or the flight will be wasted. If, at any time, you are not clear about anything told you in the pre-flight or post-flight briefings, ASK YOUR INSTRUCTOR. A clear understanding will make each launch more effective and will shorten the time before you are ready to fly solo.

3. Remember that flying requires concentration and the exercis of personal discipline. Keep yourself fit in mind and body. Listen carefully to what you are taught and you will thoroughly enjoy the course and achieve your Proficiency Certificate.

GROUND HANDLING

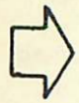
1. a. Handling Points - It is easy to damage a glider if it is handled at the wrong points. Certain parts (the wing struts and the leading edge of the tail-plane) are clearly marked 'NO HANDLING', but it is also wrong to push on the trailing edge of a wing. The correct handling positions are the wing tips and the hand holds at the rear of the fuselage. It is also safe to move a glider by the strong fuselage members near the nose.

   b. Parking - The glider should face cross wind and the windward wing-tip should be held on the ground either by a wing-tip orderly or by picketing blocks. In strong winds the tail should be manned or picketted to prevent the glider swinging into wind like a weathercock.

   c. Turning - The manned wing-tip must be turned through the wind. The tail must be raised a few inches to lift the tail skid off the ground, using the handholds at the rear of the fuselage.

2. Gliders can easily be blown over by the wind. It is therefore important to bear in mind the wind direction and strength. The windward wing-tip must always be held down so that the wind pressure is on the top surface of the wing. See Fig 1.

wind



wind

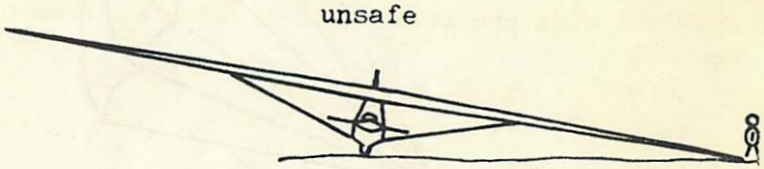


Fig 1

Ground Duties

3 (a) Cable Orderly The cable should not be unhooked from the retrieving vehicle until the driver has reversed to put some slack in the cables. After they have been unhooked the cable orderly should advise the driver by banging heartily on the back of the vehicle with his hand, The cables should be laid out in front of the glider and inspected for frayingor other damage. Any defect should be reported to an instructor. On the pilot's order, NOT BEFORE, the cable is attached to the glider by operating the override mechanism. When properly secure the cable orderly says 'CABLE ON, SIR' and moves clear of the glider. Cable make-up is shown at Fig. 2.

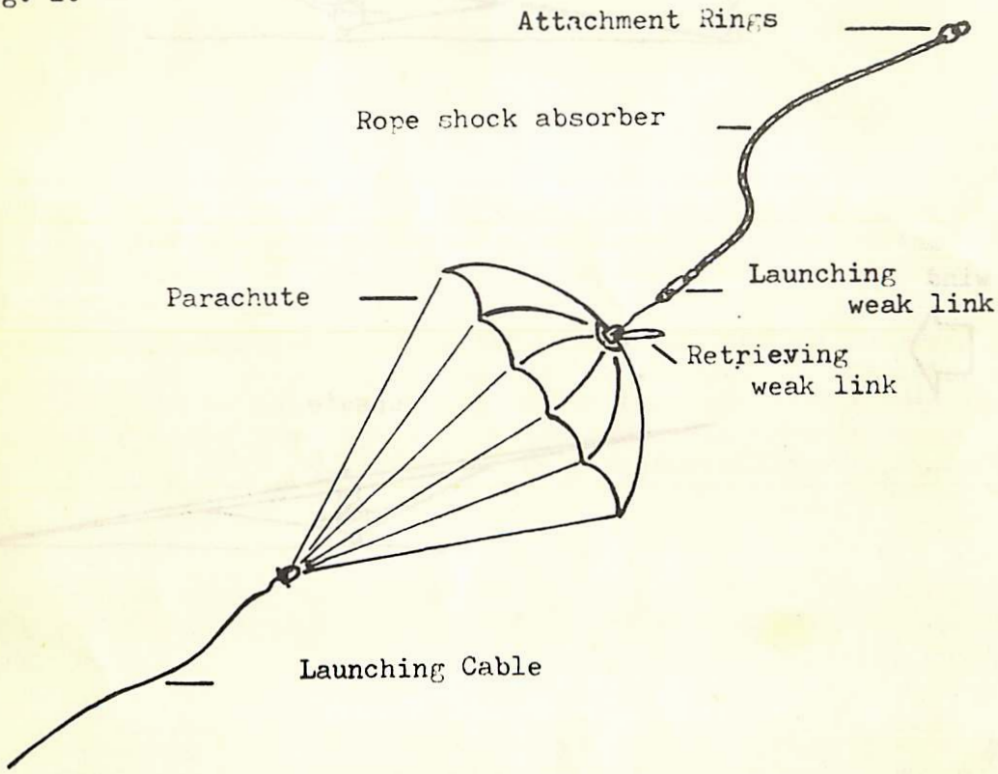


Fig 2

6A

b. Wing-Tip Orderly. Until the launch commences, the wing-tip orderly must not leave his post unless told to do so by an instructor. When the pilot orders, he raises the wing-tip six inches (for vital actions to be carried out) and, if required, checks the open and closed position of the spoilers. When ordered, he raises the wing level for take-off and, after the order 'ALL OUT' is given he runs forward holding the wing-tip until it flies out of his hand.

c. Signaller

1. Replies to all signal orders by repeating the order, and adding 'SIR'.

2. On the order 'TAKE UP SLACK', signals to the winch with a series of dashes on the lamp and replies, 'TAKE UP SLACK, SIR'

3. On the order 'ALL OUT', signals with a series of dots and replies, 'ALL OUT, SIR'. Continues signalling until the glider reaches a height of approximately three spans.

4. On the order 'STOP, STOP, STOP', signals with a steady light replying 'STOP, STOP, STOP, SIR' and continues the signal until all movement of the cable has ceased. Note that 'TAKE UP SLACK' and 'ALL OUT' orders must originate from the pilot.

Vital Actions Before Take-Off

4. After you have strapped yourself in the cockpit, check that there are no loose articles such as cushions or hats inside. Then call 'WING UP SIX INCHES' and carry out the following drill, saying aloud those words in capital letters. The easy way to remember the correct order of the drill is to use what is called a 'mnemonic' - in this case 'C I S T R S'.

C - CONTROLS - Check that each control moves freely and fully in the correct sense. Give order 'WING DOWN'.

I - INSTRUMENTS - Quote Airspeed Indicator reading. Set altimeter to zero and check that the pressure head cover has been removed.

S - SPOILERS - If fitted, operate the control and call to wing-tip orderly, 'SPOILERS FULLY OPEN AND IN LINE'? 'SPOILERS FULLY CLOSED'? and check replies.

T - TRIM - On the first launch, check that the combined weights of you and the instructor are within the limits shown on the loading chart. On subsequent flights with the same instructor, say 'TRIM WITHIN LIMITS'.

R - RELEASE - Check freedon of operation three times.

S - STRAPS - Check that straps are correctly fastened and comfortably tight.

5. Vital actions completed, the next order will be 'WINGSLEVEL' FOLLOWED BY 'CABLE ON', the cable orderly should comply with the latter order, say 'CABLE ON Sir' and walk clear of the aircraft. Call to the wing-tip orderly 'ALL CLEAR ABOVE AND BEHIND'? and check that all is clear ahead. Then call 'TAKE UP SLACK' and when all slack has been taken up, call 'ALL OUT'.

6. Note that only a glider about to be launched is held with the wings level and that the cable is <u>never</u> attached to a glider in the wing down position.

7. If, for any reason, a launch is abandoned or postponed even for a moment, the cable is first to be released and the wing tip then lowered to the ground.

Exercise 1 - The First Launch

1 This is not a joy ride and should be used to full advantage. Look at the layout of the airfield, notice how the instruments indicate airspeed, height and notice particularly how smoothly your instructor moves the controls.

Exercise 2 - The Primary Effect of the Controls

2 After releasing the cable on the second launch your instructor will draw your attention to the glider's attitude - that is the position of the nose in relation to the horizon. Note the position of the horizon when the glider is in a normal straight glide.

(a) Elevators Backward pressure on the stick will cause the nose to rise, forward pressure will cause the nose to sink. This is movement in the 'pitching' plane.

(b) Aileron If the stick is moved to the left, the left wing will go down; to the right, the right will go down. This is movement in the 'rolling' plane.

(c) Rudder If left rudder is applied (left foot forward) the nose will swing to the left; right foot forward will swing the nose to the right. This is movement in the 'yawing' plane.

Exercise 3 - The Further Effect of the Controls

3 (a) Elevators There is no further effect of the elevators. Their operation will only cause the glider to move in the pitching plane, but airspeed is very much affected, if the nose is lowered the airspeed will increase and vice-versa.

(b) Ailerons If the stick is eased over to the left, the glider will bank to the left. If this control is held on the glider will also slip to the left (towards the lower wing) and you will feel a breeze on your left cheek. The lift vector is inclined so the glider will turn to the left. The bank and rate of turn will increase so will the slip towards the lower wing. The fuselage resists this sideways movement through the air, the keel surfaces aft of the wing are greater than those forward and are therefore more effective, causing the nose to yaw towards the lower wing, resulting in a descending spiral (see also para 4).

(c) Rudder Application of rudder will first cause the nose to swing and the glider will also skid outwards. If you are yawing to the left you will feel a strong breeze on your right cheek; if you are yawing to the right the breeze will be on your left cheek. Because the glider is yawing the outer wing will travel faster through the air than the inner wing and will thus gain more lift. This will cause the outer wing to rise and - because continued application of the rudder is still yawing the nose - the glider will go into descending spiral in the direction in which the rudder was originally applied.

4 It should be noted that movement of the aileron control causes an initial yaw of the nose in the opposite direction; this is known as aileron (or adverse) yaw. To understand the reason for this, it must be remembered that any increase in lift is always accompanied by an increase in drag. Thus when the stick is moved to - say - the left, the right aileron goes down and provides more lift to the right wing; and more drag is therefore applied to the right wing. This drag causes a temporary movement - yaw - of the nose to the right before weathercock action is fully effective in yawing the nose to the left. See Fig. 3.

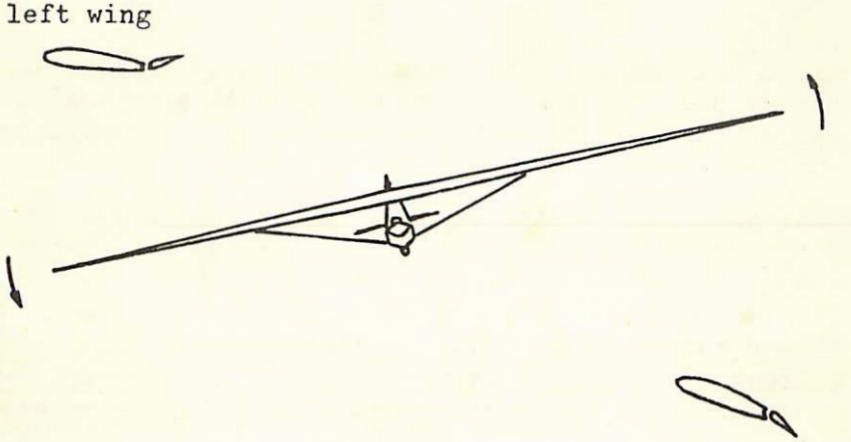


Fig 3

8A

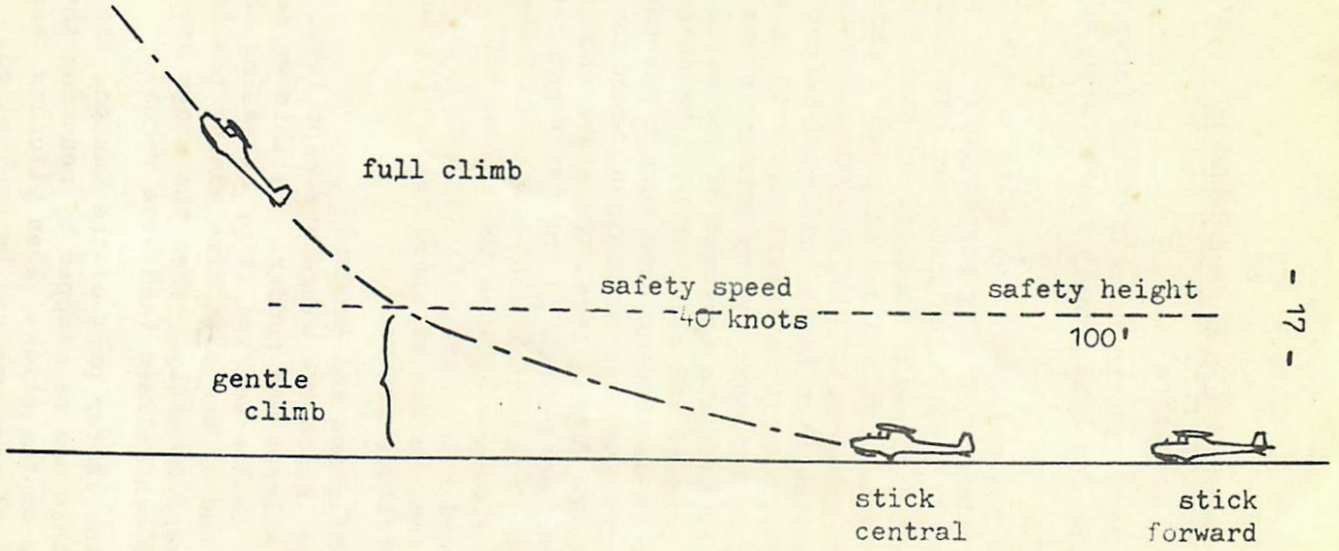

full climb
safety speed
40 knots
safety height
100'
gentle
climb
stick
central
stick
forward

Fig 4.

Exercise 4 - The Launch, Turning and Landing

5 The Launch (Elevators)

Initially the stick should be held fully forward (or as far forward as one can comfortably reach) with ailerons and rudder central.

6 As the aircraft moves forward the stick is moved gently back to a position where with tiny corrections the aircraft can be balanced on the wheel in a tail down attitude. In this attitude the aircraft will take off by itself when sufficient speed has been gained and climb at a safe angle all without further movement of the elevators. This gentle climb is continued up to an indicated height of 100 feet (see Fig.4.). At this height and with an airspeed of at least 40 knots, the nose can be raised to the climbing attitude by backward movement of the stick. During the latter part of the climb it will be noted that the angle of climb is decreasing even though the back pressure on the stick has been maintained, when the aircraft appears to be flying level the stick should be eased forward to put some slack in the cable and the release knob pulled; the glider will now be in free flight. At the moment of release - because the glider will have a fairly high airspeed - the nose will tend to rise; this must be resisted and, as the airspeed falls off, the correct gliding attitude assumed.

7 The Launch (Ailerons and Rudder)

Throughout the launch the wings are kept level with a combination of aileron and rudder. By this we mean that if the right wing is low we pick it up by easing the stick over to the left and at the same time easing the left rudder pedal forward slightly. When the wings are almost level both controls are centralised (and vice versa).

8 If, during the latter part of the launch, the glider tends to pitch, this can be stopped by reducing the backward pressure on the stick. When pitching ceases some of the original pressure can be re-applied.

9A

9. Medium Turns. Up to Proficiency standard only turns with a medium angle of bank are taught. To turn smoothly and accurately, requires the co-ordinated use of all three controls. The correct sequence of control movement is:-

(a) Look around to ensure that no other aircraft are in the vicinity and slightly lower the nose.

(b) Apply gently aileron and sufficient rudder in the same direction to counteract adverse yaw and to prevent the glider from slipping.

(c) When the correct angle of bank has been reached, centralise the ailerons and reduce the amount of rudder.

(d) Hold the nose of the glider in the correct position relative to the horizon by gentle backward pressure on the stick.

(e) Throughout the turn, maintain the angle of bank, the rate of turn and the correct nose position by the co-ordinated use of the ailerons, rudder and elevators.

(f) To recover from the turn, apply opposite aileron together with opposite rudder and move the stick slightly forward to keep the nose in the correct gliding attitude.

(g) As the wings approach the level attitude, centralise all three controls.

10. When turning on to a particular point, the recovery should be started before the glider has reached the required heading so that by the time the glider is flying level the point is straight ahead.

11. Remember that all controls movements must be made smoothly.

12. Approach and Landing. After the final turn towards the landing area the glider is held in a straight glide which is slightly steeper than normal. The wings should be held level throughout.

13. As the glider nears the ground look ahead about 50 yds and gently raise the nose (round-out) so that the glider flies level with the ground. It is very important that the nose is raised only sufficiently to fly level and that the glider is not allowed to rise at this stage.

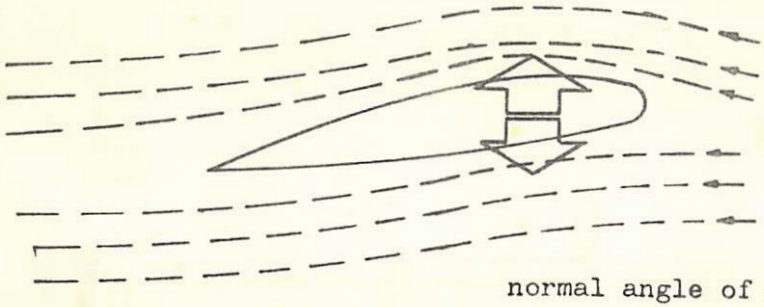
14. When a glider is flying level, the airspeed decreases, so lift decreases and the glider will sink (this may result in a nose down landing which is undesireable) The glider should be held a few inches off the ground for a while by making tiny backward or forward movements of the stick - on balance the stick will be moving back gently (increasing the angle of attack of the wing, so increasing the lift and drag) to get the glider into the correct attitude for touch down which should be on the wheel in a tail down attitude. During the landing run, the stick is moved progressively further back to keep the nose skid off the ground for as long as possible.

15. Rudder and ailerons are used as may be necessary to keep the glider running straight and the wings level.

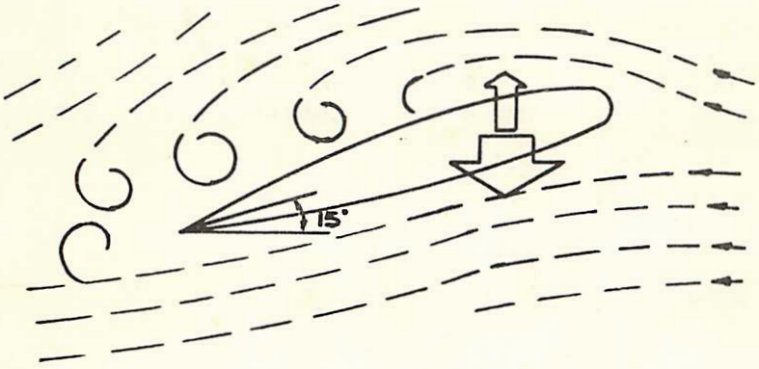
16. Remember that after the roundout it is essential to look ahead 50 yds. You cannot learn to land if you look down over the side of the cockpit.

Exercise 5/6 - The Stall and Stalling in a Turn

17 Lift is produced by the smooth flow of air over the wings and this lift is increased if the angle of attack is increased up to a maximum angle of about 15 degrees. However, as lift increases, so does drag and if the angle is increased beyond about 15 degrees, the airflow over the wings becomes disturbed, lift is lost although drag remains and the glider will stall. (see Fig. 5)



normal angle of attack



stalling angle

Fig 5

18 At the point of stall, regardless of the position of the stick, the nose will go down and the glider will try to recover itself from the stall. Some height will be lost however and a stall near the ground could be dangerous. It is important therefore to be able to recognise the onset of a stall and be able to carry out the correct recovery action with minimum loss of height.

19 At the approach of a stall, either from a straight glide or a gentle turn

(a) The nose will be too high relative to the horizon and thus

(b) The airspeed will be low.

(c) All controls will become less and less effective as the airspeed falls off.

20 In some circumstances - for instance, in a tight turn or when recovering from a dive - where the angle of attack is increased exessively by backward movement of the stick, stalling can occur at a much higher airspeed than from a straight glide.

21 To recover from the stall the angle of attack must be reduced and this can be achieved simply by moving the stick forward. With airspeed regained the controls become fully effective and the stick can be moved back gently to raise the nose to the normal gliding attitude which should then be maintained.

22 If the aircraft stalls in the turn or a wing sinks in straight stall move the stick forward and apply a little opposite rudder (the application of the rudder yaws the aircraft andincreases slightly the speed of the lower wing so lessening the stalled condition). As the airspeed increases the controls become more effective and the wing may be picked up with opposite aileron (rudder having already been applied). Aileron and rudder are then centralised. Lastly the nose should be lifted to the normal gliding attitude.

23 If at any time you think the glider is approaching a stall, lower the nose slightly to increase the airspeed.

Exercise 7 - Spinning

24. To recover, first apply opposite rudder to stop rotation If the stick is back, move it forward to unstall the wing (in a glider it is seldom necessary to move the stick further forwar than the central position). The glider will stop spinning as soon as the opposite rudder is applied which should then be centralised and the glider recovered from the dive by gentle backward movement of the stick to bring the nose up to the normal gliding attitude. During the dive and recovery, the wings should be kept level with co-ordinated use of aileron and rudder.

25. An aircraft can only spin from a stalled condition. It follows, therefore, that if an aircraft is not allowed to stall, it will never spin.

26. A stall badly handled, particularly from a turn, may develop into a spin. In an Air Cadet glider the spin will not be prolonged since it will soon change into a spiral dive but a lot of height may be lost and for this reason recovery must be effected as quickly as possible.

27. Use of the Airspeed Indicator (ASI). After the glider is released from the cable, its airspeed is completely dependant upon the angle of descent, ie the position of the nose relative to the horizon. If the ASI reading is too high, look at the nose position and raise it slightly, maintain the new position and allow the ASI to settle to its new reading. If the reading is too low, lower the nose slightly and maintain the new positio before re-checking. If your indicated air speed is now correct maintain the gliding attitude and only use the ASI as an additional guide. NEVER attempt to fly on indicated air speed alone.

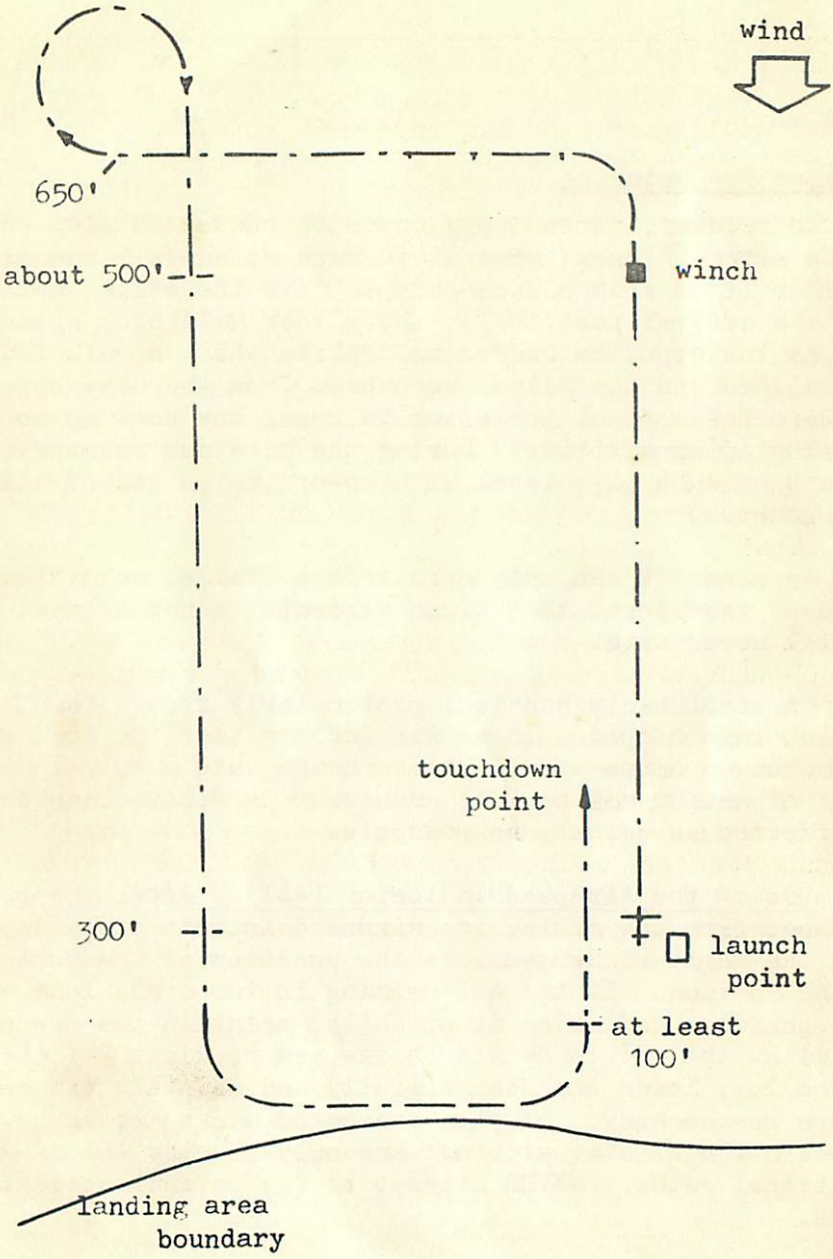

wind
650'
about 500'
winch
touchdown
point
300'
launch
point
at least
100'
landing area
boundary

Fig 6.

FLYING TRAINING

STAGE II

Circuit Procedure

1. Fig 6 shows the normal layout of a Glider Flight operating on an airfield. The dotted line indicates a model circuit flown by a glider from the release point to the point where it lands.

2. After release at the top of the launch, the pilot must take up the normal gliding attitude and fly straight ahead for a few seconds to allow the speed settle down. He should then turn 90° on to the crosswind leg. Before turning onto the downwind leg check the indicated height, if at 650 feet or more, turn through 270 degrees onto the downwind leg. See Fig 6.

3. At the end of the downwind leg you should be at a height of about 300 feet, a 90 degree turn will then put you at the start of the base leg with a height of 250 feet (in a medium turn through 90 degrees you will descend about 50 feet).

4. Under normal weather conditions, the base leg of the circuit should be above the downwind boundary of the airfield. At this stage of your training the glider must NEVER be flown beyond the downwind boundary. Remember that when a glider is headed into a strong wind, it will not travel far over the ground.

5. The final turn onto the approach must be started at not less than 150 feet so that a full 100 feet has to be lost in a straigl glide from the recovery from the turn to the touchdown point. This point should be at least 200 yards inside the boundary.

NOTE: The final turn should be planned so that the approach is made on a clear path over the airfield and not over the launch point or other obstructions.

The Low Circuit

6. The minimum permitted height on the downward leg is 200 feet. This means that, in practice, if a pilot gets down to say 225 feet he must turn through 180 degrees on to the approach. The touch-down point will now be further up field but this is much safer than having to do a low turn in an attempt to land near the normal point. See Fig. 7.

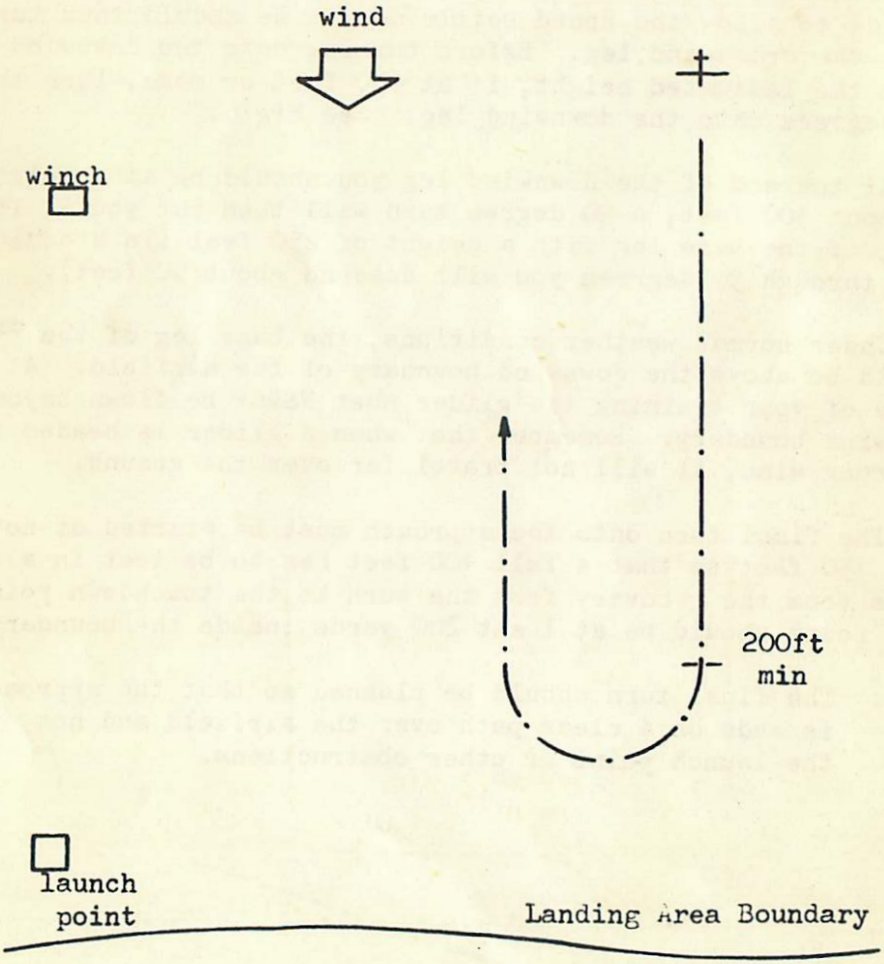


Fig 7

The High Circuit

7 If the glider arrived opposite the touchdown point at more than 300 feet, it should be turned normally on to the base leg. If there is sufficient airfield space to continue this leg down to 150 feet before turning on the approach, the circuit can be completed normally. If there is not enough space it will be necessary to do a 'beat' to use the surplus height. This means flying past the point where you would have turned in to land had you been at the correct height and then turning back towards that point to make the final turn to land. The 'beat' can be repeated if there is still surplus height to lose but NOTE that ALL turns must be made TOWARDS the airfield, and the final turn started not lower than 150 feet. See Fig.8.

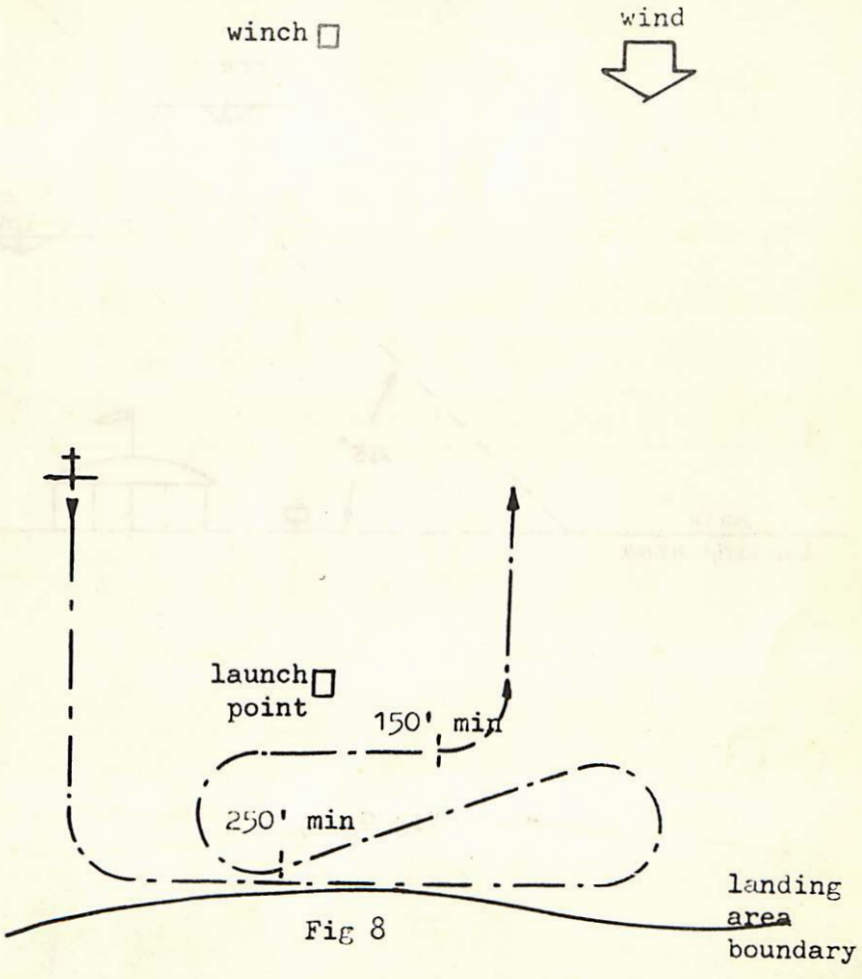


Fig 8

General Circuit Rules

8 (a) Throughout the flight, the glider should always be within a 45 degree angle from that part of the airfield suitable for landing. See Fig. 9.

(b) Below 500 feet 360 degree turns may not be carried out nor any turn that puts the airfield out of sight. (The high cable break is an exception to this rule).

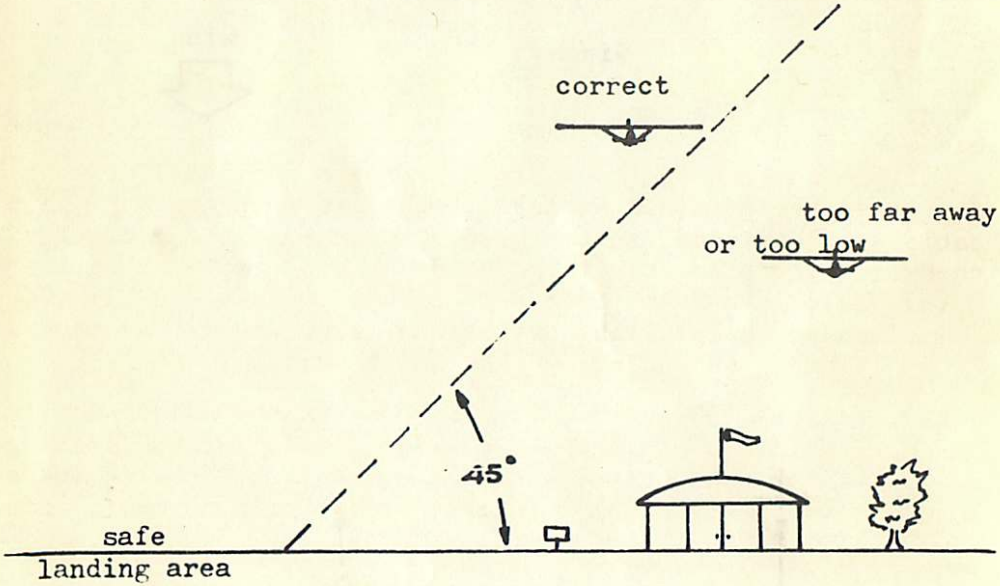


Fig 9

Airspeed for Circuit Flights

9. Normal gliding speed may be calculated by adding 7 knots to the speed at which the glider stalls from a straight glide. For the Cadet Mk.3 this is normally 35 knots (28 + 7). Below 300 feet 5 knots should be added (40knots) and, for the final approach, this is again increased by an amount one third of the wind speed. Thus in a 15 knot wind the circuit would be flown at 35 knots, at 300 feet the airspeed would be increased to 40 knots and the approach would be made at 45 knots.

Cable-Break Procedure

10 During the launch the glider is in a nose-up attitude and if the cable breaks the nose will rise further (this is because the wings are producing strong lift and the aircraft is now relieved of the downward pull from the cable) airspeed will quickly be lost and the glider will stall if the correct action is not taken. The immediate action therefore in the event of a cable-break at any height is to move the stick firmly forward until the nose is in the correct approach attitude. The release must then be operated (at least twice) to drop any part of the cable still attached to the glider and the height must be checked. The pilot can then decide on his course of action -

(a) Below about 150 feet a landing should be made straight ahead, only slight deviations being made to avoid the winch, the cable, or other obstructions. See Fig. 10

(b) Between 150 and 300 feet a 'S' turn should be carried out. The first turn should be away from the other flight and at 150 feet or the airfield boundary (whichever is reached sooner) the final turn into wind should be made. See Fig. 11.

(c) Between 300 and 400 feet turn 180° (away from other Flight) onto the downwind leg, then bearing in mind that the minimum permitted height downwind is 200 feet turn thro' 180° in the same direction as before onto final approach. See Fig. 12.

(d) At 400 feet or more there will be ample height to complete a shortened circuit, asimple matter of turning gently downwind and completing a normal approach. See Fig. 13.

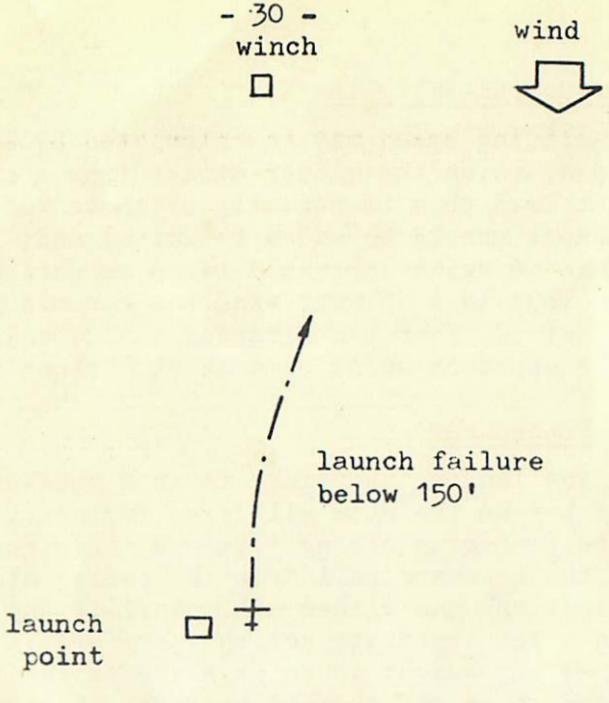

winch
wind
launch failure
below 150'
launch
point

Fig 10

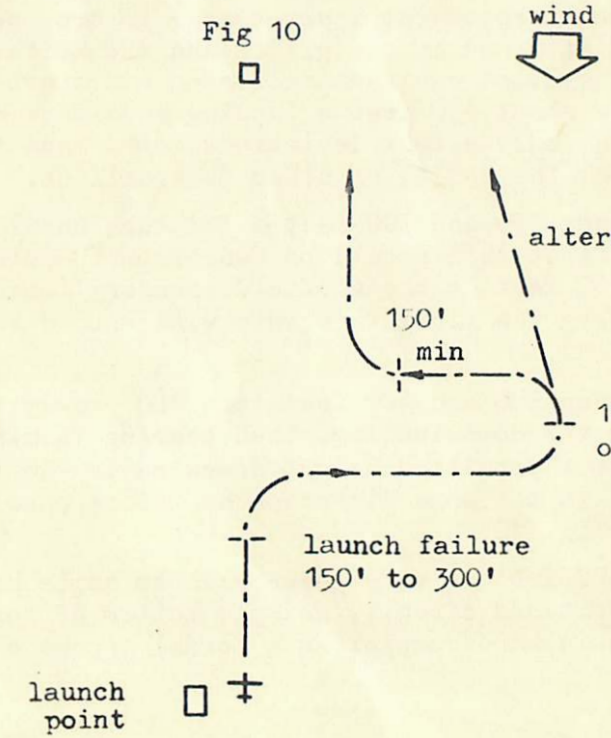

wind
alternative
150'
min
150' or boundary
of airfield
launch failure
150' to 300'
launch
point

Fig 11

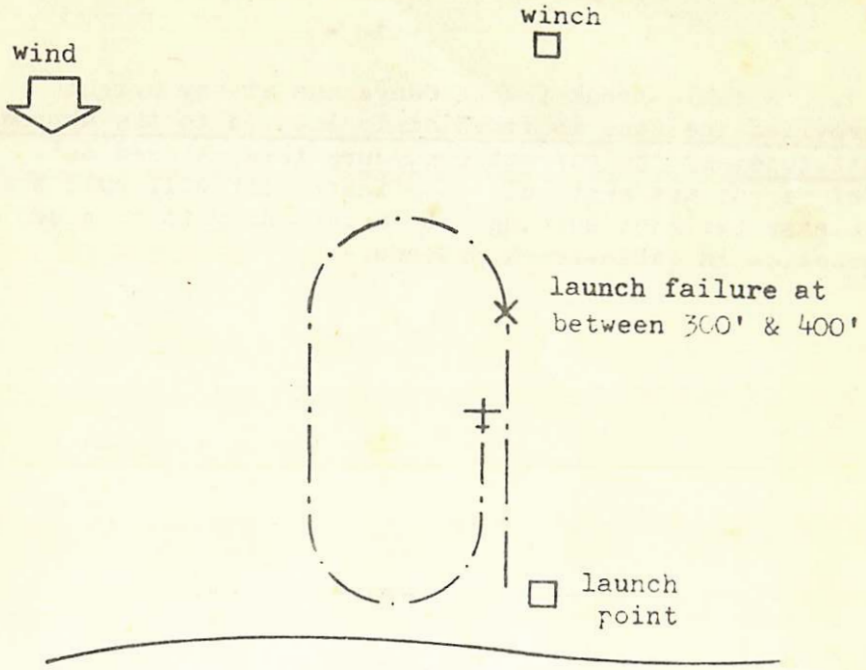

wind
winch
launch failure at
between 300' & 400'
launch
point

Fig 12

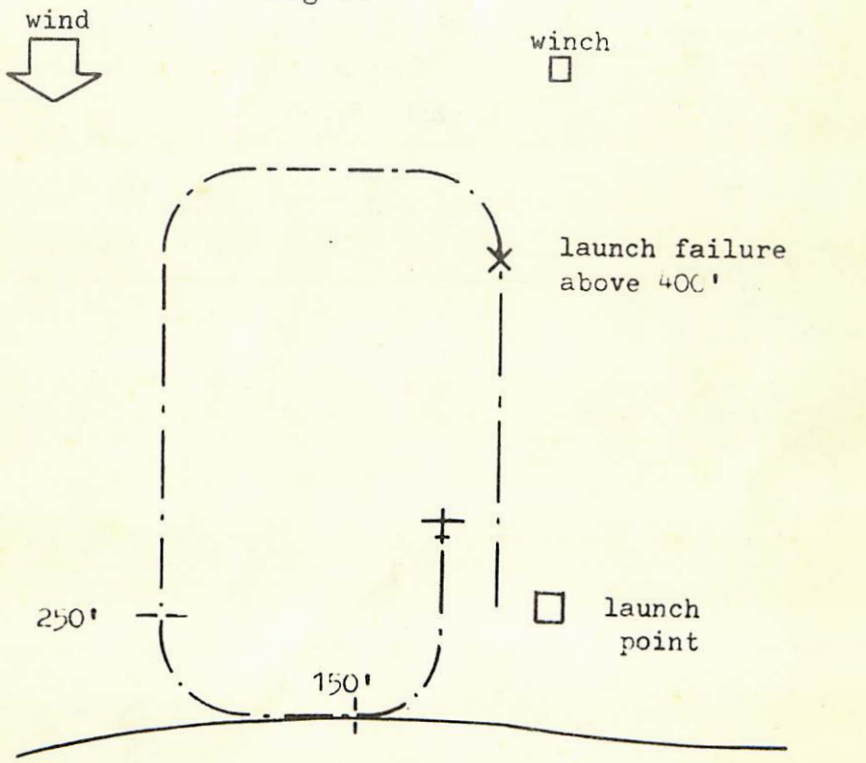

wind
winch
launch failure
above 400'
250'
150'
launch
point

Fig 13

11. A cable-break is not dangerous at any height provided the nose is immediately lowered to the approach attitude and the correct procedure then carried out. Before you are sent solo your instructor will pull the release (without warning) at various heights to give practice in cable-break procedure.

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WORK HARD

BE PUNCTUAL

AND

KEEP TRYING

THEN

YOU WILL ENJOY THE COURSE

NOTES FOR ADVANCED STANDARD SYLLABUS

Aim

1. To train to a higher gliding standard.

Requirements

To qualify for the Advanced Standard a cadet must -

2. a. Complete a minimum of 30 launches after qualifying fo Proficiency Gliding Standard of which 10 launches must be solo.

b. Be capable of carrying out a series of accurate 360° turns.

c. Sucessfully carry out two solo crosswind landings (90° crosswind component is not to exceed 10 knots).

d. Sucessfully carry out three consecutive solo landings in an area 150 yards by 50 yards.

e. Final handling tests on all advanced exercises to be carried out by an independant instructor of at least A2 category before the Advanced Proficiency Certificate is awarded.

Training Programme

3. The syllabus is seperated into two stages:

a. Stage 1 Revision of basic exercises with emphasis on stalls, Incipient spins, cable breaks, circuits.
See Prof. Standard Air Exercise.

b. Stage 2. The training for this stage is divided into three exercises.

(1) Exercise No 1 360° turns.

(2) Exercise No 2 Crosswind Landings.

(3) Exercise No 3 Landings in a given area.

EXERCISE No 1

360° TURNS

Aim

1. To maintain continuous 360° balanced turns at constant angles of bank and nose attitude/speed.

Considerations

2. Whilst flying 360° turns, a student can become disorientated, therefore, the necessity of maintaining a constant look-out both for aircraft and location relative to the airfield is essential. Recognition of drift will form an important part of these considerations.

Training Programme

3. This exercise is an extension of the basic training exercise on Medium Turns, the student must be checked for his ability to level on a pre-selected heading after executing 360° turns.

Notes

4. This exercise is the basis for future thermal flying so any available lift will be used to give more time for the turns, it will also give the instructor the opportunity to teach the need for the adjustment of speed in thermals.

5. The necessity for maintaining a good look-out cannot be overstressed and the student will be carefully watched throughout all his turns to ensure that he is checking for other aircraft drift and positioning.

EXERCISE NO 2

CROSSWIND LANDINGS

Aim

1. To teach the student to touch down without drift landing across the wind.

Considerations

2. This exercise requires of the student an ability to cope with drift on approach and landing, because he might at a later stage find himself presented with a crosswind landing in a limited area, two methods of dealing with drift are included.

Training Programme

3. The two methods of counteracting drift during the approach and landing are:-

a. Side Slipping. To counteract the drift by banking into wind sufficiently to keep the resultant path of descent in line with the intended landing path with sufficient opposite rudder to prevent yaw towards the lowered wing.

b. To counteract the drift by heading the glider slightly into wind, keeping the wings level, so that the glider tracks along the intended landing path. Near the end of the hold off coarse rudder is applied to yaw the aircraft and so cancel out the drift for the actual touchdown.

EXERCISE No 3

LANDING IN A MARKED AREA

Aim

1. To teach the accurate positioning of the glider in the circuit to enable a landing to be made in a designated area.

Considerations

2. The student has up to now been more concerned with landing the glider safely on the airfield than with landing in any specified area.

Training Programme

3. Using marker strips, a landing area 150 yards by 50 yards will be marked out. This area will be used from the start of the Advanced Course. The student will not be allowed to break any rules of airmanship in order to land in the marked area, so a higher standard of circuit planning is required thereby adding purpose to every launch. For safety the downwind marker will be at least 200 yards from the downwind boundary so that if a student undershoots the marked area he can still land well inside the airfield.