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## **1 INTRODUCTION**

a) Unlicensed aerodromes and private strips are often used by pilots and private owners. They may be more convenient or cheaper than licensed aerodromes; however, they **do** require special consideration. Approximately one third of GA Reportable Accidents in the UK occur during take-off or landing at unlicensed aerodromes. The proportion of flying activity is not known.

b) This Leaflet is intended to start you thinking about the differences and particular needs of such flying, and also to give some guidelines about operating from, or establishing, your own strip. It should be read in conjunction with the relevant parts of SafetySense leaflet [6](#), Aerodrome Sense

## **2 ASSESSING THE STRIP**

a) It is important to realise that the CAA criteria for the licensing of an aerodrome, e.g. clear approaches without power or other cables, no trees or obstructions close to the runway and so on, are unlikely to have been applied to the strip. Since in almost all cases **Prior Permission is Required (PPR) before landing**, your phone call should also include discussion of **any difficulties, obstructions, noise sensitive areas** to be avoided and the useable length of the strip.

b) Find out the arrangements for grass cutting. It is no use landing only to find the grass is so long that it prevents you taking off again. As a rule of thumb, the grass length should not be more than 30% of the diameter of the wheel.

c) Use an Ordnance Survey map to find out accurately the elevation above mean sea level of the strip – modern maps are in metres.

d) The orientation of the strip may have been laid out to fit in with the needs of agriculture. Establish the direction of the prevailing winds in the area and note the location of any windsock. Will it be affected by nearby trees or buildings? A well located windsock will give you the ground level wind speed and direction. Beware of strips near the coast; sea breezes can change rapidly from onshore to offshore, morning and evening.

e) Tell the operator of the strip what experience you have, which strips you have used recently, and what aeroplane you intend using. He has probably seen pilots with similar aeroplanes flying into and out of the strip and you can benefit from local knowledge. He does not want an accident any more than you do! Exchange telephone numbers in case of a last minute hitch. If possible visit it by road to see for yourself, but best of all carry out the advice of paragraphs 5a, 5b and 5c.

f) The length of the strip **must** be accurately established. If you pace it out, remember an average pace is **not** one metre, but considerably less (the British army's marching pace is only 30 inches). This may decrease still further after walking several hundred metres. A proper measuring device is better; for example a rope of accurately known length.

g) The strip should be adequately drained or self-draining. Visit it after heavy rain to see whether it remains waterlogged or muddy. Rain after

long dry periods may not soak away and can remain hidden by the grass.

h) The surface should be free from ruts and holes and should be properly and regularly rolled. One way of assessing the surface is to drive a car along the strip. If at about 30 mph the ride is comfortable, there should be no problems.

i) If it is a disused wartime airfield, some of the runway may be unusable, while other parts may have a surface in poor condition – including loose gravel and stones. These can be picked up by the propeller wash and can damage windcreens, tail and, of course, the propeller itself. Stone damage can be very expensive.

j) Carefully examine from the ground, air or maps the approaches to the strip and the go-around area, with particular reference to any runway slope, obstructions or hills within 5 km, windshear or turbulence from nearby woods/buildings and other considerations.

k) Look closely at neighbouring properties; a climb out above the breeding pens or stud farm next door will soon bring an end to everyone's operation.

### **3 OPERATING CONSIDERATIONS**

a) Aeroplane performance **must** be appropriate for the proposed strip. You **must** be fully familiar with the contents of Safety Sense Leaflet No. [7](#) (Aeroplane Performance) or AIC 127/2006 (Pink 110) 'Take off, Climb and Landing Performance of Light Aeroplanes'. Remember, the figures shown in the Pilot's Operating Handbook are obtained using a **new** aeroplane, flown by an expert pilot under near ideal conditions, i.e. the

best possible results. On the strip, the grass may be different from the 'short, dry, mown grass' of the Handbook. There may be a slight uphill gradient, tall trees or cables at the far end, or a cross-wind. Short wet grass should be treated with utmost caution, it can increase landing distances by 60% – it's like an icy surface! Take account of all of these most carefully and then add an additional margin for safety before deciding. (SafetySense Leaflet No. [7](#), Aeroplane Performance, recommends a **33%** safety factor for take-off but 43% for landing.)

b) Your own abilities as a pilot need critical and honest assessment. The ability to land smoothly on a long hard runway is very different from the skills needed for this type of operation.

c) Most importantly the combination of **YOU and YOUR** aeroplane must be satisfactory. A weakness in either of these could show up in the accident statistics

d) The CAA [poster](#) 'AIRSTRIPS, think Hedgerow NOT Heathrow' reminds pilots of the operational considerations, and is available for free download from the CAA website [www.caa.co.uk](http://www.caa.co.uk) through "safety", "general aviation" and "information".

e) Some strips are located on hills where, up to a certain wind speed, take-offs are downhill and landings uphill. Re-read the above paragraphs, for although such strips are not necessarily dangerous, they should not be attempted unless you are totally confident about paragraphs a, b and c.

f) You must check that the insurance covers operation from an

unlicensed aerodrome or a strip. It is important that you give Insurers fullest possible written details before the visit.

g) Find out about the local arrangements for booking in and booking out; usually a Movements Log is provided.

h) Ensure that passengers and spectators are properly briefed about where they may go, where they may stand and what they may or may not touch.

i) Leave details of route, ETA and passengers in the Movements Log **AND** with someone who will react appropriately and alert the Emergency Services if you fail to arrive/return.

j) If you are planning to go abroad direct from the strip, then nominating a 'responsible person' is even more important. Remember customs and immigration requirements, and those of the Terrorism Act if going to or from Northern Ireland, the Isle of Man, or the Channel Islands. Consult the UK AIP GEN 1.2.1 and SafetySense Leaflet No. [20](#), 'VFR Flight Plans'.

#### **4 OVERNIGHT CONSIDERATIONS**

a) If you intend to leave the aircraft overnight at a strip, it may be necessary for you to arrange your own tie-downs and wheel chocks. Ensure that control locks are in place and the aircraft is properly secured. If the wind is likely to increase, then position your aircraft so as to minimise the possibility of it moving and be prepared to reposition it if the wind direction changes. Covers should be used to keep insects and water out of the pitot tube and static vents.

b) Next morning your pre-flight inspection should be more careful than usual just in case birds or other wildlife have taken up residence; birds can build a nest overnight. Check the pitot head, static and tank vents for insects.

c) If the strip is shared with cows, horses or sheep, then an electric or other suitable fence to separate them from your aeroplane is essential. Cows are very partial to the taste of aeroplane dope and their rough tongues have been known to strip fabric from wings. Metal aeroplanes do not escape their attentions, since they make suitable back-scratchers.

d) Discuss with the strip operator the security of the aeroplane. Vandalism and fuel thefts may be a problem.

## 5 FLYING CONSIDERATIONS

a) Consider having a familiarisation flight to and from the strip with a pilot who knows the strip and is both current on your aeroplane and operations into grass strips.

b) In any case you must know and fly the correct speeds for your aeroplane and remember the importance of using appropriate techniques, keeping the weight off the nosewheel etc.

c) If the strip is shorter than you are used to or has difficult approaches, you should arrange for a flying instructor to appraise your flying skills and revise and improve short field, soft field, general circuit and airmanship skills. It is not the intention of this leaflet to list the skills – that is the instructor's task. Listen and learn. If an instructor is not available, at least practice your short

landings on a long runway before attempting to land at a short strip.

d) Airmanship and look-out must be of the highest order; there is unlikely to be any form of air traffic service to advise you of the presence of other aircraft, their position or intentions, so be especially vigilant, and make blind transmissions on the Safetycom frequency 135.475 MHz if appropriate. Low flying military aircraft may NOT avoid strips.

e) Circuit **practice** at unlicensed aerodromes could be unpopular with the neighbours and may be in breach of part of Rule 5 of the Rules of the Air if you are within 500 ft of persons, vessels, vehicles or structures. However, if you find a problem with turbulence or crosswind, surface or slope, do not hesitate to **go around in accordance with normal aviation practice**.

f) Plan your circuit using the best available QNH, for example from a nearby aerodrome. Failing that you could use the most recent 'regional pressure setting (RPS)' but be aware your altimeter will certainly over-read if you use RPS. You should already know the elevation of the strip, so add this figure to the appropriate height that you would use in a normal circuit. Thus, if the strip is 250 ft amsl, downwind will be e.g. 1250 ft QNH.

g) Get into the habit of flying a compact circuit using engine and propeller handling techniques that will minimise noise disturbance. Avoid long flat and noisy approaches, these are not conducive to good neighbourliness nor necessarily the best short landing technique. If your approach is bad, or a touchdown at the correct place is unlikely, **make an early decision** to go-around. It is

often useful to plan to make a go-around from your first approach (avoiding persons, vessels vehicles and structures by 500 feet).



h) Note carefully the position and height of any obstructions on the approach, especially hard-to-see local power and phone cables. Make sure that you can clear them (and any crop) by an adequate margin and, provided that you maintain this clearance, always aim to touch down close to the threshold – **not halfway down the strip.**

i) Always start your take-off run as close as possible to the beginning of the strip, unless there are very good reasons not to do so. Work out an acceleration check point from which you can stop if you haven't reached sufficient speed for a safe take-off.

j) Bear in mind when turning off the strip, Rule 14(4) of the Rules of the Air and other arriving aircraft.

k) When performing power checks or engine runs try to minimise any noise nuisance and ensure that the slipstream is not creating a problem. Unexpected noise etc. can terrify livestock; be considerate when choosing the site for engine checks.

l) After take-off, reduce power and propeller rpm when it is safe. Climb to at least 500 ft agl before turning.

m) If you are a regular strip user, decide your weather and wind limits and be clear about your Go/No Go decision process.

## 6 **SETTING UP YOUR OWN STRIP**

a) If you are planning to move your aeroplane to a strip, or perhaps start your own, the points below should be considered, in addition to any others in CAP [428](#) 'Safety Standards at Unlicensed Aerodromes'.



b) Remember that Rule 5 of the Rules of the Air Regulations includes, amongst other requirements, the prohibition of flights below 1000 feet over 'congested' areas except when aircraft are taking off or landing at a licensed or government aerodrome. It is therefore most important that climb out, approach and circuit paths at an unlicensed aerodrome are clear of 'congested' areas. Such areas are legally defined as 'in relation to a city, town, or settlement, any area which is substantially used for residential, industrial, commercial or recreational purposes'.

c) Talk to nearby aerodrome operators to ensure that you will not conflict with their activities.

d) Look again at the performance of the aeroplane and your abilities. If operating from this strip means that **every** take-off and landing, even when the aeroplane is lightly loaded, is 'tight', change to a more suitable aeroplane or strip.

e) Remember that, unless there is 'established use', aircraft operations may be in contravention of local regulations. It may of course be possible to obtain planning permission from the outset for your

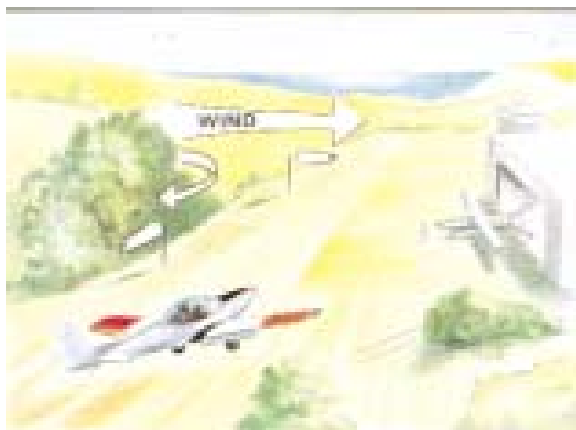
strip, although this would probably involve you in a great deal of hassle. However, this is much better than having it compulsorily closed by the local council if they decide that your operations are in contravention of Planning Regulations. It is in your interests to establish this from the outset and it is furthermore a good idea to talk to all of the neighbours and the planning authority **before** you do anything.

f) Cutting the grass and generally maintaining the surface has been discussed earlier; however, if you are responsible for the upkeep of the strip it is important to establish who will cut the grass, roll it and how often. This needs to be a regular activity – we all know only too well how much our lawns grow in a week.



g) Beware when mowing. Instances have occurred of pilots following the mown lines instead of the strip direction.

h) Grass seed mixtures which will give reduced rolling resistance and slower growth are available. Consult a seed merchant.



i) In deciding the orientation of the strip/landing run, consider carefully the local wind effects. It may be possible to re-orientate the strip by some 10 or 20 degrees which could reduce the cross-wind effect. This is particularly important for some tailwheel types where the maximum crosswind component that can be tolerated may be as little as 10 knots.

j) Remember that whilst taking off down a slope or landing up a slope is acceptable, taking off and landing across the slope is dangerous. Ensure that the orientation of the strip eliminates excessive lateral slope.

k) It is essential to mark any obstacles, potholes or bad ground at this stage and runway markers or even runway numbers will help people to line up and operate more accurately. It is also possible to have local power lines and telephone lines moved by paying the costs.

l) You must decide in advance on your fuel arrangements. If you are intending to store fuel, then you must comply with Article 137 of the Air Navigation Order and CAP [748](#) 'Aircraft fuelling and fuel installation management'. It may be possible to obtain relatively small quantities of aviation fuel by sharing the delivery with a nearby aerodrome or strip. It is normally necessary to obtain local council permission to store fuel.

m) Decide on your maintenance arrangements, your engineer may require coaxing/persuasion to visit your strip at short notice to rectify a defect.

n) If you own or fly a wood or fabric covered aeroplane it should be hangared – ideally all aircraft should be. However, storing it in a farm barn

brings its own particular problems – rodents. Mice are nimble creatures, able to climb landing gear legs and set up home in your aeroplane. We heard of a squirrel that got into the wing structure and stored its winter supply of acorns near the wing tip. Over 30 lbs of acorns were removed! A tray of rat poison encircling each wheel should be considered.



Birds also find aircraft irresistible nesting sites; a nest removed in the morning may be substantially rebuilt by late afternoon. Pre-flight checking the aeroplane becomes very important. Insects may take over your aircraft. Given a few days undisturbed progress, a wasps' nest could appear.

o) It is vital to remove all live-stock from the runway prior to take-off and prior to landing. Thus, if animals have access to the strip, assistance by a friend or farmhand is essential. Animals are unpredictable.



p) Cows leave other evidence of their presence – cow pats! Not only does this look unsightly on the aeroplane, but a build up of this, and

mud, add to the drag and weight of the aeroplane. Mud and animal contaminants may also be corrosive, so regular washing of the aeroplane, especially the underside, becomes a necessity. Check regularly that spats are clear of mud and grass. Temporary removal of the spats **must** be agreed with a CAA Regional Office.

q) The farmer and/or his workers may need gentle reminders about the fragile nature of your aeroplane compared with farm machinery, should they need to move it. They may not know about the dangers of propellers/helicopter rotors.

r) Consider sitting a small hut or caravan on the strip. This will give secure storage for oil, fire extinguishers, fire axe, polish, foot pump and so on. It is suggested that this should have a large letter C painted on it to make it clear that it is a reporting point for pilots and where the Movements Log is kept. A notice board inside is useful to display information such as local instructions, NOTAMs, the engineer's telephone number, accident procedures and any temporary obstructions, soft ground and grass cutting rotas. Make sure there is enough room to park visiting aircraft well clear of the landing area.

s) Get into the habit of checking the strip each day before starting flying. Any ruts, soft ground or other problems should be dealt with or publicised on the notice board so that they can be avoided on take-off and landing.

## **7 MAIN POINTS**

- DO** obtain permission from the owner/operator prior to visiting the strip. Talk to pilots who have used the strip before and can advise you on procedures/obstructions.
  - DO** check that the combination of you **and** your aeroplane **can** safely cope with this strip.
  - DO** always leave details of ETA route, destination and how many are on board in the Movements Log.
  - DO** always nominate a 'responsible person' as described in Safety Sense Leaflet 20 'VFR Flight Plans', who knows how to raise the alarm if you fail to arrive/return.
  - DO** follow the requirements for customs, immigration and the Terrorism Act if flying to or from overseas.
  - DO** talk to neighbouring aerodromes or to the Flight Information Service on the radio.
  - DO** build up a working relationship with your nearest aerodrome. You may need them for fuel, weather information and maintenance.
  - DO** be ready for unexpected effects from trees, barns, windshear, downdraught, etc.
  - DO** work hard at being a good neighbour and improving the Public's perception of General Aviation by minimising noise nuisance.
  - DO** check that the strip **really** is long enough, with a 30% margin for safety.
  - DO** check on the effect of power and other cables.
  - DO** check whether any slope makes it a 'one way' strip.
  - DO** obtain and display a copy of the CAA's AIRSTRIPS poster.
  - DO NOT** 'beat up' the strip or engage in other forms of reckless, illegal and unsociable flying.
  - DO NOT** attempt to take off or land if the grass is long, the ground is muddy or weather is marginal. There will always be a better day to fly or you can always divert into a neighbouring aerodrome.
  - DO NOT** run-up an engine where the noise affects others or slipstream can be a nuisance.
  - DO NOT** attempt to 'scrape' in from a bad approach.
- FINALLY**, ensure that safety is the first consideration. A safe flight will almost always be an enjoyable and rewarding one.

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