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LANDING AND TAKING OFF FROM GRASS AND LOOSE GRAVEL STRIPS

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INFORMATION AND RECOMMENDATIONS

In Iceland, there are quite a few landing sites with grass strips or loose gravel strips. There are many things to keep in mind when using such runways in order to prevent accidents. For this reason, the Icelandic Transport Authority would like to provide the following information and recommendations regarding the use of such runways.

FLIGHT PREPARATION:

It is important to seek information about the landing site before taking off. General information is available in the Icelandic AIP in the case of a registered landing strip. It is also a good idea to talk to colleagues who know the place or people who live near the airfield. You can also find or share information on the **Facebook page – Ástand flugvalla á Íslandi (óstjórnaðir vellir)**.

If there is any doubt that conditions are adequate and if the airfield is not too far from the departure point, it may be wise to drive there to check the condition of the runway.

RUNWAY SLOPE:

If no information is available on the aircraft's performance with respect to runway slope, the Icelandic Transport Authority proposes that the minimum take-off distance be increased as a minimum according to the table below. It is not recommended that pilots operate aircraft on runways with a slope greater than 2%.

LANDINGS:

Whether you land on a long paved runway, grassy field or gravel strip, the basics are the same. Good preparation for landing is a key factor in ensuring a safe landing, but there are a few things to keep in mind:

1. Pilots should be familiar with the airplane flight manual, in most cases it contains instructions for landing on the aforementioned runways. It is also advisable to fly low over the landing site and check the conditions if there is no information on the condition of the runway.
2. Tailwheel airplanes are in many ways better suited to grass strips and loose gravel strips than nosewheel airplanes. There is less risk of the airplane's wheels sinking into the ground, but there are other dangers. Proper application of the airplane's control surfaces during landing is very important. Care must be taken with the use of brakes to prevent the propeller from hitting the ground or the plane from nosing over. On tailwheel airplanes, the correct application the control surfaces is no less important after landing, especially in wind. Due to the reduced forward view from tailwheel airplanes, it is necessary to pay close attention to obstacles on the taxiway.
3. Keep in mind that on wet or snowy grass strips, the landing distance can increase by up to 60%.

TAKE OFFS:

The propeller and tail can be damaged by rocks and pebbles blown loose during engine run up if care is not taken to ensure that the run up area is free from stones and loose gravel. There is also a risk of dust or other foreign matter being sucked into the carburetor when testing the carb heat as the air is unfiltered.

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It is advisable to hold the yoke full aft (unless the flight manual specifies otherwise) to lighten the nose wheel. On tailwheel airplanes, the tail must be lifted as quickly as possible off the ground to reduce the resistance on the tailwheel. Keep in mind that the take-off run is generally much longer on wet grass strips than dry ones. Grass on a mowed but unraked runway can have a significant effect on take-off distance and direction control, both during take-off and landing.

The surface of grass and gravel strips can be very different and varies according to the seasons. By nature, many of these airfields get little to no usage during the winter season due to snow, etc. If no information on take-off and landing distances on such runways can be found in the aircraft flight manual, the following table may be taken into account. The table is for reference only and it is the pilot's responsibility to assess the situation.

Condition	Approx. increase in take-off distance	Approx. increase in landing distance
10% weight increase	20%	10%
Every 1000 feet increase in elevation	10%	5%
Temp. 10°c above ISA	10%	5%
Dry short grass (< 12 cm)	20%	20%
Dry long grass (12-25 cm)	25%	30%
Wet short/long grass	25%-30%	≥30%
2% positive slope	10%	-10%
Tailwind 10% of take-off speed	At least 25%	At least 25%
Density altitude	Pressure altitude + temperature correction	Increases by 121 feet per °C above ISA

During take-off, monitor that the acceleration is normal. It is sensible to determine a place on the runway where the take-off will be aborted if the acceleration is not normal.

If the grass is wet, the surface can become very slippery. Such conditions can significantly increase the braking distance if the take-off is aborted.

It is also wise to decide before landing how far along the runway it is safe to land so that it is possible to come to a complete stop on the runway.

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