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REPORT AVIATION 2024/11

Aviation accident at Villmobakken airstrip on Vannøya in Troms County on 6 August 2024 involving a Vans RV-14, SP-YBI

This report has been translated into English and published by the NSIA to facilitate access by international readers. As accurate as the translation might be, the original Norwegian text takes precedence as the report for reference.

The Norwegian Safety Investigation Authority (NSIA) has compiled this report for the sole purpose of improving aviation safety.

The object of the NSIA's investigations is to clarify the sequence of events and causal factors, elucidate matters deemed to be important to the prevention of accidents and serious incidents, and to issue safety recommendations if relevant. It is not the NSIA's task to apportion blame or liability under criminal or civil law.

This report should not be used for purposes other than preventive aviation safety work.

Factual information

This investigation has been of limited scope. The NSIA has therefore chosen to use a simplified report format.

Data

Aircraft:	
Type and registration:	Vans RV-14, SP-YBI (Polish)
Year of manufacture:	2022
Engine:	Lycoming IO-390
Date and time:	Tuesday 6 August 2024, at approx. 1230 hours
Location:	Villmobakken airstrip on Vannøya, Karlsøy municipality, Troms county
ATS airspace:	Uncontrolled airspace, ATS airspace class G
Type of incident:	Aviation accident, loss of control during landing. Runway excursion veer off.
Type of flight:	Private
Weather conditions:	Sunny, clear skies, good visibility and light winds. 25 °C. METAR ENTC 061020Z VRB02KT CAVOK 22/13 Q1014 NOSIG RMK WIND 2600FT 17011KT
Light conditions:	Daylight
Flying conditions:	VMC
Flight plan:	None
Persons on board:	2 persons, pilot and one passenger
Personal injuries:	Both people on board sustained minor injuries
Damage to aircraft:	Broken propeller and landing gear. Broken windows and canopy. Damage to both wings.
Other damage:	None
Pilot:	
Certificate:	Private pilot licence (PPL (A))
Flying experience:	A total of 1,159 hours, including 493 hours of the type in question. 64 hours in the past 90 days.
Sources of information:	Report from the Norwegian Meteorological Institute, interview with the pilot, documents from the police and Avinor Air Navigation Services, as well as the NSIA's own investigations.

All times given in this report are local times (UTC + 2 hours) unless otherwise stated.

Sequence of events

The pilot and passenger were on a flight in Norway on SP-YBI, a Vans RV-14 and had landed at Engeløya Airport (ENEN) in Steigen municipality in Nordland. There, they happened to meet the operator of Villmobakken airstrip on Vannøya in Karlsøy municipality in Troms. The pilot had flown in Norway previously and had heard of Villmobakken airstrip (see Figure 1) but had never been there. The operator gave him permission to land there after giving him information about local conditions. The information included a video showing the operator using his own aircraft on the airstrip. The pilot has informed the NSIA that he was also told that the airstrip at Vannøya is about 7 metres wide, 400 metres long and covered in rough gravel.



Figure 1: Map section of Villmobakken airstrip on Vannøya, with runway directions 08 and 26. Map: © norgeskart.no. Illustration: NSIA

On the same day that the pilot arrived at Engeløya, he flew on to Tromsø Airport Langnes (ENTC). The flight from Tromsø to Vannøya was planned using the digital tool 'Easy VFR'. The pilot checked the weather and NOTAM, and calculated the weight, balance, flight time and fuel requirements. The total weight of the pilot and passenger was stated to be 130 kg. On departure from Tromsø, the aircraft had 100 litres of fuel. The plan was to return to Tromsø later that day.

In preparation for landing on a short airstrip with an uneven surface, the pilot made a thorough check of the aircraft's landing gear before departure from Tromsø. He also left the luggage in Tromsø to make the aircraft lighter. The aircraft is a tailwheel aircraft. It did not have 'heavy duty' landing gear, but the pilot has explained to the NSIA that the wheels were slightly larger than the original wheels for the aircraft type, because he often landed on grass airstrips in his home country.

Avinor Air Navigation Services wrote in its report that the pilot took off from Tromsø at 1137 hours. The pilot has stated that he climbed to 2,000 ft. and flew through Langsundet strait up to Vannøya.

On arrival in the area from the east, the pilot established a left landing circuit for runway 26. To familiarise himself with the terrain, he performed a high and a low flyover of the airstrip (see Figure 2). As there is no windsock in the immediate vicinity of the airstrip, he used visual observations of

surrounding bodies of water and vegetation. He assessed the wind conditions as being calm. He decided to land to the southwest, on runway 26. The aircraft was set down just within the threshold at a speed of about 60 knots.

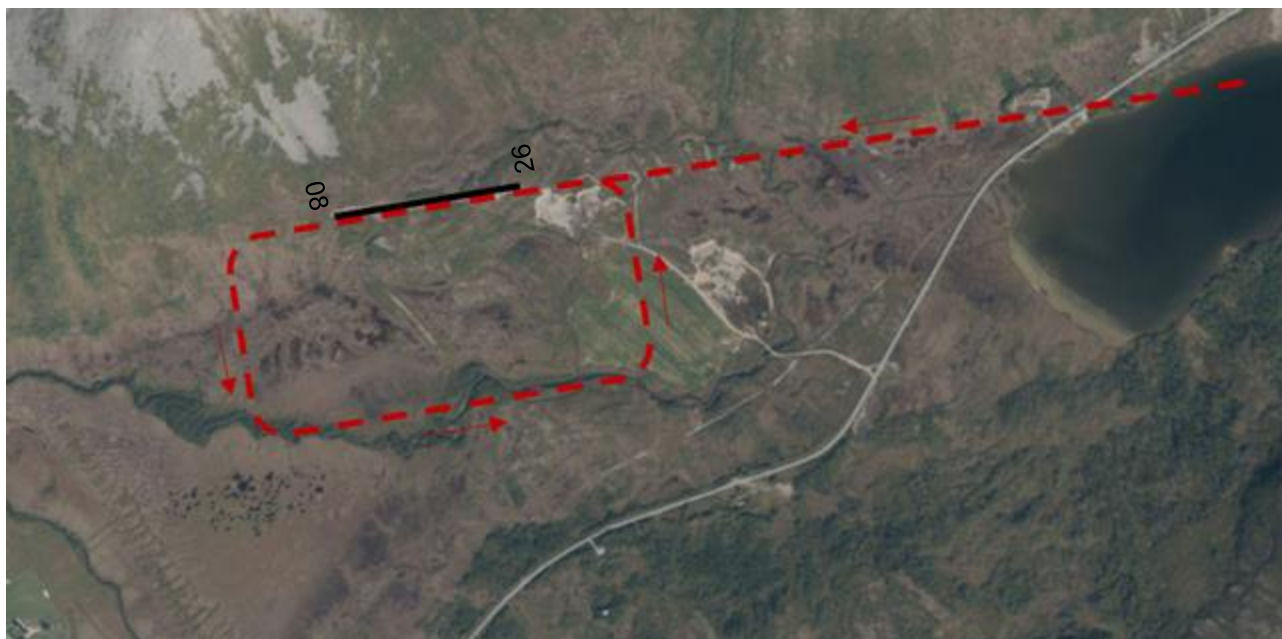


Figure 2: The pilot approached from the east, made two circuits, and landed on runway 26. The black line is the airstrip. Map: © norgeskart.no. Illustration: NSIA

The pilot knew from experience that the aircraft could be stopped in about 200 metres. Vannøya airstrip is around 400 metres long. The pilot chose to brake carefully because of the length of the airstrip and because he was afraid that heavy braking could throw gravel up into the propeller. After around 200 metres, he passed the airstrip's highest point and continued slightly downhill. At this point, the pilot lost directional control, and the aircraft veered to the left. The aircraft quickly veered onto an uneven surface off the gravel runway and continued for a few metres, before the landing gear went into a ditch across from the edge of the airstrip. The aircraft flipped forward and ended up on its back with the front facing the direction the aircraft had come from (see Figure 3 and 4). The pilot has stated that the aircraft's speed was low when it veered off the gravel.

The pilot switched off the fuel supply and electricity, before both of those on board got out of the aircraft unaided. Both sustained minor injuries. The aircraft sustained extensive damage. The pilot has stated that the aircraft had no technical faults before departure, and that no faults arose during the flight that may have affected the landing.

The pilot has informed the NSIA that he found the airstrip very narrow and that even minor changes of direction from a theoretical centreline would steer the aircraft off the runway. He stated that he had experience in using simple airstrips in mountainous areas in his home country, but that these are wider than the one on Vannøya. The police report shows that landing with a tailwind was deemed a possible causal factor by several of those at the scene shortly after the incident.

The pilot had flown several times in Norway and was familiar with the Civil Aviation Authority Norway publication VFR guide for Norway¹.

¹ [VFR guide for Norway \(luftfartstilsynet.no\)](http://luftfartstilsynet.no)



Figure 3: SP-YBJ after the accident. Photo taken looking north. Photo: The police / NSIA

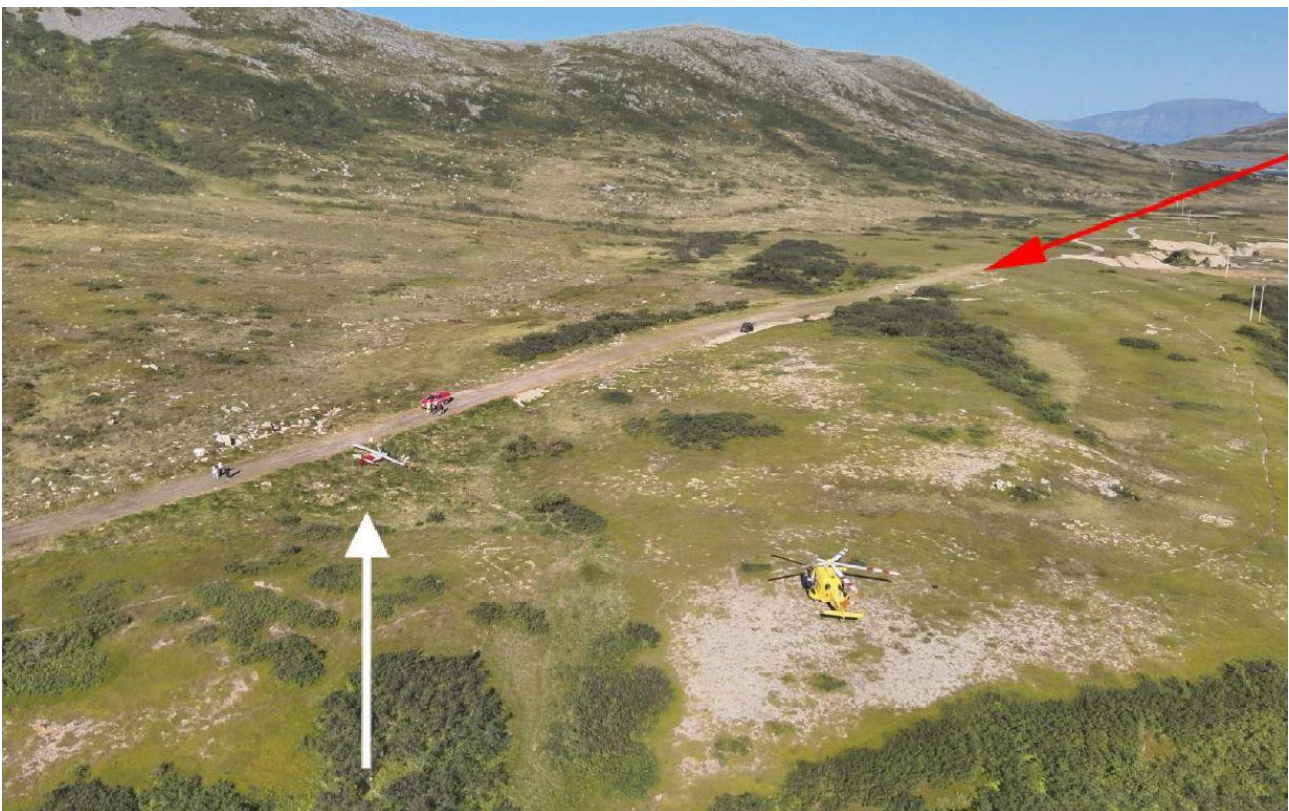


Figure 4: Overview of Villmobakken airstrip. The red arrow marks the touch-down spot on runway 26. The white arrow marks the position of the aircraft after the accident. Photo: The police / NSIA

Weather observations

The NSIA has received a report from the Norwegian Meteorological Institute describing the weather situation:

Area of high pressure of around 1020 hPa just northeast of the Kola Peninsula with generally light offshore winds in northern Norway. Dry and almost cloudless skies in Troms and Finnmark. Light wind field from the south, but a warm summer's day with temperatures of up to 25 degrees, the sunwise wind is about to start with onshore winds along the ground resulting in a rather variable wind direction, but generally low wind speed.

There are two weather stations on Vannøya: Torsvåg Lighthouse (6 km from the airstrip) and Fakken (22 km from the airstrip). The mean wind speed at Torsvåg at 1200 hours was 3.9 m/s, and 1 m/s at Fakken. The Norwegian Meteorological Institute writes that there was no indication of turbulence in their data models.

The weather report from the Norwegian Meteorological Institute contains photos from the HEMSWX² station in the south-east of Vannøya. The photos show very good summer weather (see Figure 5).

METAR from ENTC at the time of the event, and for the next few hours, describe good visibility, cloudless skies and light winds.



Figure 5: Photo from the HEMSWX station located southeast on Vannøya, approx. 1.5 hours after the accident. Source: Norwegian Meteorological Institute / NSIA

Information about Villmobakken airstrip

Villmobakken airstrip is considered a natural airfield in accordance with definition in regulation BSL E 1-1, §2, letter c. The airstrip has no licence, nor technical/operational approval from CAA-N. It is a private gravel strip that requires the operator's prior approval before landing. No official

² The Norwegian Air Ambulance's nationwide network of weather observation stations.

information has been published about it. The operator must provide information about the airstrip to those granted approval.

The NSIA investigated an aviation accident involving SE-FBT at Villmobakken in 2015.³ The local wind conditions were a critical factor in that accident. The NSIA's 2015 report states that there was a windsock southeast of the airstrip. Another windsock was also to be procured, to ensure there was one at each end of the runway. The NSIA wrote at the time:

The commander has stated that he has procured an extra windsock and that the windsocks will be placed at each end of the runway.

There are currently no windsocks at the airstrip. Instead, a windsock has been set up approximately 1.4 km northwest of the airstrip (see Figure 6) which, according to the operator, is new and easy to see from the air. A pennant flag beside a residential building is also used to assess local wind conditions before landing.

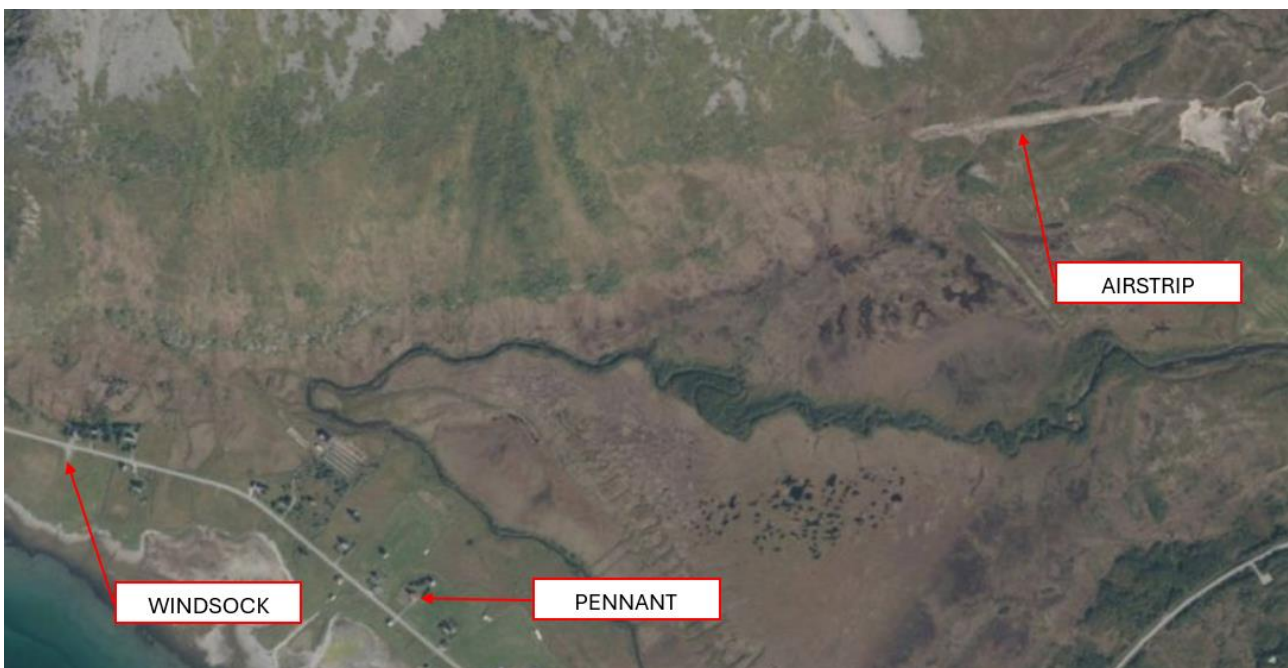


Figure 6: Location of windsock and pennant in relation to the airstrip. Map: © norgeskart.no Illustration: NSIA

The profile of the airstrip is such that the middle section is slightly elevated compared to either end of the runway. The airstrip is around 40 metres above sea level. To the north, the terrain rises steeply to about 750 metres above sea level. The runway surface is gravel with stone and grass along the edges. There is a 15-metre-high power line approximately 340 metres from the threshold to runway 26.

³ Report on aviation accident on Vannøya, Troms on 10 July 2015, SE-FBT, Report [SL 2015/12](#).

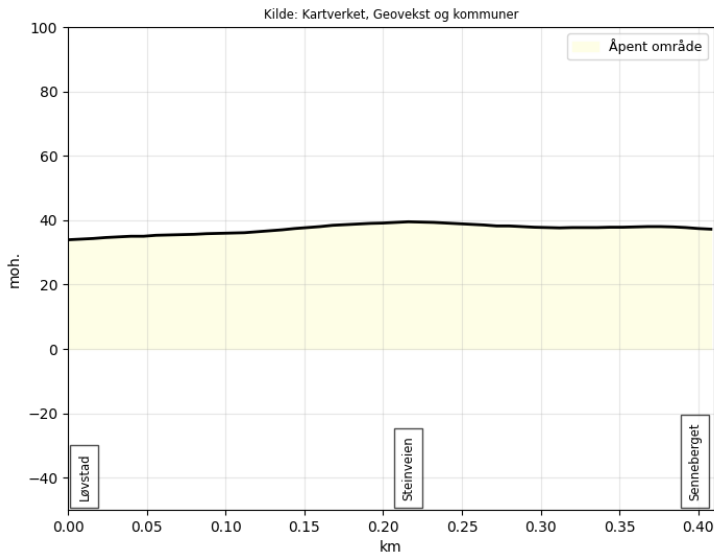


Figure 7: Elevation profile of the airstrip. Runway 26 from left to right. Source: © norgeskart.no

The ditch that SP-YBI ended up in is intended to drain water from the upper side of the airstrip and runs almost to its edge. There are two open ditches on the upper side of the airstrip that lead water to a pipe under the airstrip. The open trench continues on the lower side of the airstrip.



Figure 8: The ditch SP-YBI ended up in. Photo: The police / NSIA

The NSIA's assessments

This was the pilot's first flight to Villmobakken airstrip on Vannøya. The pilot was not subject to time pressure or expectations from others to complete the flight and made good preparations to obtain weather information and ready the aircraft. The NSIA's assessment is that the pilot had not gained a good enough understanding of the local conditions at the airstrip from the oral information provided by the operator.

The pilot found the airstrip narrower than he had expected. It is the NSIA's assessment that the combination of uneven surface and narrow airstrip makes Villmobakken a demanding airstrip to operate from, especially maintaining direction during rollout. Tailwheel aircraft also have limited front visibility, and the centre of gravity is behind the main wheels. The location of the centre of gravity makes tailwheel aircraft more unstable during rollout than nosewheel aircraft. This made it more challenging for the pilot of SP-YBI.

When the left main wheel veered off the gravel, the uneven surface, combined with the small wheels, made it difficult to correct the aircraft and regain directional control. As this occurred just before the point where drainage ditches had been dug, the main wheels ended up going into one of the ditches and the aircraft flipped over.

The drainage ditches constitute an obstacle. This applies to both sides of the airstrip. The room for manoeuvre is no more than the width of the airstrip itself. The ditch is such that the aircraft would probably have tipped over even at a very low speed. There are multiple examples of both serious injury and loss of life resulting from aircraft tipping over in this way.

The sides and ends of approved airstrips have safety zones. The NSIA's assessment is that an open ditch across the airstrip is very unfortunate and does not provide a safety zone along the sides of the airstrip. Simple measures could have removed this safety risk. The aircraft's speed was low, and it would probably not have tipped over if the ditch had not been there. The operator should ensure that everyone operating at Villmobakken airstrip is aware of the drainage ditches.

Wind conditions

The police report shows that landing in a tailwind was cited as a possible cause shortly after the accident. The report from the Norwegian Meteorological Institute shows that the weather was very good with light winds and good visibility. It is the NSIA's assessment that the local weather and wind conditions, including tailwinds and downdrafts due to the terrain, were not a factor in the sequence of events.

The NSIA believes it is a weakness that there are no windsocks in the immediate vicinity of the airstrip. Although the wind conditions had no impact on this incident, this is nonetheless a factor that means extensive knowledge of local conditions is required at Villmobakken airstrip. This makes take-offs and landings on the airstrip particularly demanding.

The NSIA conducted an investigation into the accident involving SE-FBT at Villmobakken airstrip in 2015. The local wind conditions were a critical factor in that accident. The NSIA's report sets out that there was a windsock southeast of the airstrip at that time. Another windsock was also to be procured, to ensure there was one at each end of the runway. The NSIA notes that the operator's promises and intentions to learn from the previous accident at Villmobakken have not been met. The current situation is that there is no windsock at either end of the runway, but there is one about 1.4 km away. This windsock has no operational value for a pilot arriving at Villmobakken from the direction taken by the pilot of SP-YBI. Nor does it have any operational value for assessing the

local wind conditions at take-off, which was an important causal factor in the accident involving SE-FBT in 2015.

It is always the pilot's responsibility to assess whether local conditions, the characteristics of the aircraft type and their own flying skills are compatible with conducting the flight. It is therefore essential to obtain as detailed information as possible about the planned landing site before a flight takes place. At the same time, it is the responsibility of those operating an airstrip to make information about its conditions and challenges available and readily understandable.

Norwegian Safety Investigation Authority
Lillestrøm, 9 December 2024