

REPORT

SL 2018/07



REPORT ON SERIOUS AIRCRAFT INCIDENT AT LEKNES AIRPORT ON 24 JULY 2017 INVOLVING PIPER PA-34-220T SENECA V, N666NN

The Accident Investigation Board has compiled this report for the sole purpose of improving flight safety. The object of any investigation is to identify faults or discrepancies which may endanger flight safety, whether or not these are causal factors in the accident, and to make safety recommendations. It is not the Board's task to apportion blame or liability. Use of this report for any other purpose than for flight safety shall be avoided.

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

Photos: AIBN and Trond Isaksen/OSL

REPORT ON SERIOUS AIRCRAFT INCIDENT AT LEKNES AIRPORT ON 24 JULY 2017 INVOLVING PIPER PA-34-220T SENECA V, N666NN

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This investigation is limited in its extent, and the AIBN has therefore chosen to use a simplified report format. The report format indicated in ICAO Annex 13 is only used when the scope of the investigation makes it necessary.

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

Aircraft information:

- Type and reg.:	Piper Aircraft PA-34-220T Seneca V, N666NN
- Manufacture year:	2001
- Engine(s):	2 x Continental L/TSIO-360-RB
Operator:	Private
Date and time:	Monday, 24 July 2017 at 17:02
Location:	Leknes airport, Norway (ENLK)
ATS airspace:	Airspace class G (Leknes TIZ)
Type of occurrence:	Serious aircraft incident. Low fly-over with undercarriage retracted, where all propeller blades touched the runway.
Type of flight:	Private
Weather conditions:	METAR ENLK: 1450Z 30006KT CAVOK 19/12 Q1020=
Light conditions:	Daylight
Flight conditions:	VMC
Itinerary:	None
No. of persons on board:	2 (commander and 1 passenger)
Injuries to persons:	None
Damage to aircraft:	All six propeller blades bent.
Other damage:	Small cuts in the runway over a distance of 15 metres.
Commander:	
- Age:	69
- Licence:	US (FAA) PPL (A). His American pilot licence is based on holding a valid Swiss pilot licence at all times. CAA Norway has requested information from CAA Switzerland regarding the commander's Swiss pilot licence and English language skills, but not been able to collect this information. The commander has stated that he had ratings for Multi Engine Piston (MEP) and Multi Engine Instrument Rating (ME-IR) valid until 30 November 2017. His Swiss medical certificates cl 2/LAPL were valid until 28 October 2017 and 2018, respectively, with a restriction to use multifocal glasses (VML). His

- medical exam did not include an investigation of his ability to carry out instrument flying.
- Flying experience Approx. 1 600 hours in total, of which approx. 1 200 hours on this type. Last 90 days: 25 hours, last 24 hours: 4 hours (all in this type).
- Information sources: "NF-2007 Reporting accidents and incidents in civil aviation" from the commander and Avinor, as well as AIBN's own investigations.

FACTUAL INFORMATION

The commander's explanation:

The commander, who is a German citizen and normally lives in Switzerland, was flying in Norway along with his daughter. Before he started his trip to Norway, headed for the North Cape, he acquired the most recent edition of the 1:500 000 ICAO VFR map which covered all of Norway, in addition to the most recent edition of the Jeppessen/Bottlang Airfield Manual. He also downloaded, studied and brought with him the most recent edition of "VFR Guide for Norway". To be safe, he also purchased the most recent edition of IFR maps for the airspace in all of Scandinavia, in addition to downloading and bringing with him hardcopy maps of the most important international airports in Norway, including all IFR approach procedures.

On his way south from the North Cape, they had a stopover at Stokmarknes airport Skagen (ENSK) and then at Svolvær airport Helle (ENSH), where they had lunch. The next leg was planned via Leknes, following the coastline past Brønnøysund, Namsos, and landing at Trondheim airport Værnes (ENVA).

He has explained to AIBN that, as he normally does, he had planned the flight by obtaining weather information, NOTAM, studying airspace divisions, airport procedures, runway lengths, calculated fuel needs, as well as weight/balance calculations. The commander believed that there was nothing of particular note as regards carrying out a VFR flight under existing VFR conditions.

The commander has stated that he planned to carry out a touch-and-go procedure at Leknes for training purposes, this should be done in combination with carrying out brief sightseeing over the town¹. At the end of the approach, the plan was to reduce the number of degrees flaps to improve acceleration after the touch-and-go procedure. By mistake, the commander raised the handle for the undercarriage instead of the flaps. On short final in connection with the "GUMP" check (Gas, Undercarriage, Mixture, Propeller), he discovered that the undercarriage was no longer extended. He then accelerated the airplane from a particularly low altitude over the runway and started climbing, while at the same time he realised the possibility that the propeller blades had touched the runway.

The commander has informed AIBN that there were no technical issues with the airplane and that the cause of the incident was him choosing the wrong handle. The commander also explained that he was not sure whether he had heard the audio warning indicating that the undercarriage was not extended. He was allegedly too busy in the cockpit to have heard a potential audio warning. He has also stated that he used a headset with active noise-reduction technology². The passenger also supposedly didn't hear or notify the commander of any abnormal sounds on board.

¹ The airport and the town are very close to each other.

² In AIBN's experience, audio warnings should be issued in the headset, but this has not been investigated in N666NN.

The commander has explained that the airspeed was reduced, but he did not feel any vibrations from the propellers on the flight south toward Værnes. After landing at Værnes, it became clear that all six propeller tips had been bent backward, but the fuselage was unharmed (see Figures 1 and 2).



Figure 1: Damage to all six propeller blades. Photo: Police



Figure 2: N666NN. Photo: Erlend Karlsen (Jetphotos)

Air Traffic Services' explanation:

The AFIS officer at Leknes has stated that he received a call from his colleague at Svoldvær with information to the effect that N666NN was under way on a VFR flight from Svoldvær to Leknes. It was stated that the aircraft was moving quickly. The first time N666NN called up Leknes AFIS was about 5 minutes before the arrival. The communication was somewhat poor and the pilot's diction was unclear and periodically slurred. The AFIS officer perceived the commander's intention to be somewhat unclear, as he mentioned both "low-pass" and "touch-and-go", in addition to an entirely cryptic location description. Eventually, it became clear that the commander intended, after Leknes, to fly toward Brønnøysund. Standard information about conditions at Leknes was provided multiple times to N666NN, without this being perceived by the commander. For example, the commander consistently referred to runway 03, even though Leknes AFIS had stated multiple times that they had runway 02. When the aircraft was at 3.5 Nm final, the AFIS officer established visual contact with N666NN and the tower personnel noticed that the aircraft was keeping high speed. Then final information was provided about wind conditions and "runway free".

When N666NN was on short final, the commander allegedly provided somewhat incoherent feedback about "touch-and-go", "stay for 20 seconds", "never been here before", "want to see your village" and confirmed "runway free". The AFIS officer has stated that N666NN came in at low altitude, where the topography and later the runway acted as background. With this backdrop, it was difficult to determine whether or not the undercarriage was deployed. This is also not the job of tower personnel, and there is no procedure for them to check whether or not approaching aircraft have extended their undercarriage.

The AFIS officer has stated that, when N666NN passed the threshold, it continued at good speed at a low altitude over the runway. The officer had never before experienced a touch-and-go at this tempo. This apparently made the AFIS officer initially consider the manoeuvre to be a low-pass, but approx. 350-400 metres after the threshold, the aircraft suddenly sat down on the runway without the undercarriage being extended, before it bounced up. The sound of the propellers against the asphalt was heard by tower personnel. The undercarriage extended immediately afterwards, and then the aircraft lost some speed and continued at a low altitude along the last half of the 1 070-metre-long runway.

Then N666NN climbed to approx. 1 000 ft west of Leknes, before the aircraft set its course to the south. The AFIS officer contacted the commander to clarify the situation that had occurred. The

AFIS officer was uncertain as to whether they had the same interpretation of the original plan. According to what the officer was able to make out, the commander allegedly said that he had realised, at the last moment, that the undercarriage was not extended.

The AFIS officer at Leknes was left with an uncomfortable feeling after the incident and contacted his colleagues at Svolvær and Stokmarknes to get their opinion on the flight of N666NN. Svolvær had not experienced anything out of the ordinary, apart from somewhat unclear communication. However, the officer at Stokmarknes had experienced that N666NN landed somewhat far into the runway, with associated challenges involving braking before the end of the runway³. According to air traffic service, the commander should not have taxied as supposed.

The AFIS officer at Leknes suspected that the commander could have been under the influence of alcohol and, following a comprehensive assessment, decided that it was better to report once too many than regret not reporting, so he established contact with the Police.

On its way south, N666NN flew through Bodø TMA without the required clearance from the air traffic service and they apparently had trouble establishing contact with the commander during certain portions of the flight. The Joint Rescue Coordination Centre for South Norway (HRS-S) and the emergency medical services coordination centre (AMK) were notified by the air traffic service. AMK decided to initiate full emergency preparedness as a result of information to the effect that N666NN may have issues with its undercarriage. When N666NN eventually landed at Værnes, an ambulance helicopter, five ambulances, two fire trucks and two police cars were standing by at the airport. The commander was not under the influence by alcohol.

After the incident, the aircraft was repaired at Værnes. When the commander was on his way from Trondheim to Zurich he experienced problems with the aircraft's radio equipment. It became necessary to make an unscheduled stopover in Germany to get the radio equipment repaired. At the maintenance facility, they found defects on the radio equipment, which had caused poor radio connection for some time. In connection with review of the draft report, the commander has documented repair of the aircraft audio panel and the two VHF radios.

THE ASSESMENT OF THE ACCIDENT INVESTIGATION BOARD

AIBN has classified this occurrence as a serious aircraft incident, which by definition entails that it was nearly an air accident. This is because AIBN believes that the margins from a collision between the aircraft's fuselage and the runway were small when the aircraft approached at high speed. Furthermore, in addition to the propellers, the engines could also have been damaged, resulting in a subsequent crash.

Based on the commander's explanation about preparations for the flight, this appears to be good. The practical implementation appears to be deficient, however, both in exercising the flight and in phraseology⁴. The Accident Investigation Board Norway has not received information from air traffic service which indicates that the radio equipment in the aircraft contributed to poor communication.

VFR flights in Norway involve a lot of wonderful scenery and many light aircraft pilots use the opportunity to fly sightseeing trips around the country. Norway features challenging topography,

³ Available landing distance (LDA) of approx. 800 metres.

⁴ Language requirements are described in the joint European licence requirements in [EASA FCL.055 Language proficiency](#)

weather conditions and many short runways. Among other things, as a result of various light aircraft accidents, the Civil Aviation Authority - Norway and Norges Luftsportforbund publish an annual "[VFR-guide for Norway](#)". This course provides a beneficial comprehensive information package that highlights several important topics, particularly for foreigners.

AIBN believes that the commander of N666NN put himself in a situation where the sum of all the sensory input and his tasks exceeded his mental capacity. One may question the "airmanship"⁵ of planning sightseeing while simultaneously carrying out an approach to an unfamiliar airport with a short runway, as well as continuing a flight with an aircraft that he ought to understand likely was damaged.

SAFETY RECOMMENDATIONS

The Accident Investigation Board Norway makes no safety recommendations in connection with this investigation.

The Accident Investigation Board Norway

Lillestrøm, 11 October 2018

⁵ Definition of "airmanship": "Airmanship is the consistent use of good judgment and well-developed skills to accomplish flight objectives. This consistency is founded on a cornerstone of uncompromising flight discipline and is developed through systematic skill acquisition and proficiency. A high state of situational awareness completes the airmanship picture and is obtained through knowledge of one's self, aircraft, environment, team and risk".