Havarikommisjonen for Sivil Luftfart og Jernbane
HSLB

REPORT

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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.

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

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

Aircraft	
Type and reg.:	Jastreb Fabr. Aviona Jedrilica ST CIRRUS G/81, LN-GLO
year of manufacturing:	1983
engine:	None
Date and time:	Friday 18 June 2004 at time 1305
Location:	Østre Brumund, Hedmark. (N 60 59 628 E 010 59 453)
Type of occurrence:	Accident, crash during an outlanding of a glider
Type of flight:	Private
Weather conditions:	Wind: 120° 5 kt, gusting 10 kt. Light turbulence. Reduced visibility in rain. Overcast at 5,000 ft. Temp./dew point: 16 °C/3 °C. QNH 999 hPa
Light conditions:	Daylight
Flight conditions:	VMC
Flight plan:	None
Persons on board:	1
Injuries:	None
Damage to aircraft:	Substantial fuselage damage, cracked canopy, impact damage to leading edges of both wings
Other damage:	None
Commander:	
- sex/age:	Male, 42 years old
-licence:	Australian glider pilot authorisation and licence issued by NAK
-flying experience:	Total flying hours: 1,013 hours. On the particular type: 29 hours
Sources of information:	"Aircraft Accident/Incident Reporting Form" (NF 0382) from the pilot, report from witness, printout of data stored in the onboard GPS device and the AIBN's own investigations

FACTUAL INFORMATION

The accident occurred during the World Gliding Championships. On the third day of competition, the programme involved flying from Starmoen (ENHN), near Elverum, to Lillehammer and return to Starmoen. 66 gliders massed for the start. The weather was unstable, with showers in the area. Many of the competitors were in a hurry to take off from Starmoen as a shower approached the field from the south.

The pilot of LN-GLO has explained that the tactics for the planned flight under the prevailing weather conditions were to set a course over the Vangsåsen plateau and hope that the cumulus formations at the rear of this would provide the necessary thermals. When he passed Brumunddal, there was a shower front of cumulonimbus clouds to the south. Several of the other gliders were in the vicinity, some slightly higher and some slightly lower than his. He registered that he passed an area suitable for an outlanding (Stormyra) of around 100 m x 1,000 m. Data stored in the onboard GPS device showed that he was around 300 metres above the terrain at that time.

The pilot of LN-GLO chose to continue west a couple of kilometres past Stormyra, towards a couple of other competitors who seemed to be circling at a higher altitude. The terrain below him rose towards the west. The cumulus clouds did not provide the lift that he had expected, and so he turned to the east again in the hope of finding rising thermals to continue. He thought that he could feel some slight lift, and started a 360 degree turn when was around 1.5 km from the landing area. At the end of the turn he had, however, lost 80 metres altitude, and he realised that he would have to make an outlanding. As far as he can remember, he carried out the landing checklist at this time, in other words lowered the wheel and trimmed the aircraft for a speed of 55 kt.

The weather was still fair when the approach began and he expected to reach the landing area. Immediately afterwards, however, it began to rain, at first lightly, then heavily. Visibility forwards became poor and the wind increased. The pilot realised that he would not be able to reach his chosen landing area, and he was forced to land in scrubland, and had to deploy his air brakes to avoid colliding with high tension cables.

LN-GLO’s wing hit some undergrowth and the top of a spruce, and the aircraft fell into the scrub below the high tension line. Another glider pilot, who was flying behind him, saw what happened and raised the alarm about the accident on his radio.

The pilot of LN-GLO was not injured in the crash and was able to evacuate the aircraft unaided.

The aircraft suffered comprehensive damage. The tail section broke, there was a hole in the lower fuselage in front of the wheel, the leading edges of the wings were battered and the canopy cracked.
In all, 12 gliders outlanded at Stormyra over a short period, and according to witnesses, there were only small safety margins during at least a couple of these landings.

The pilot is Australian and has little experience of flying in precipitation. He has stated that he has never flown in precipitation lower than 1,000 ft above the ground. He wrote the following about the conditions during the last part of the flight and his own considerations:

> *"I had flown to a point where I thought I could safely land if a thermal was not found and was searching for lift under clouds. The last 360 degree turn was not only unproductive; it cost a lot of height. In hindsight the last turn was a bad mistake. I did not allow for the possibility of losing height to such a degree which left me with insufficient height to allow a reasonable safety margin.*
>
> *Looking at the datalogger trace the last 1 km glide was only at about 14 to 1. The glider at best would get 36 to 1 and even a poor glide should be in the mid 20s to 1. I did not allow sufficient height for the possibility of persistent heavy sink and rain".*

Closing his report, the pilot had the following comments about the event:

> *"This was a world standard competition, and competition pressures meant that almost all the competitors flew into very marginal conditions. Of course any one of us could elect not to go or give up early and land, but that is not generally the nature of competition pilots at that level. It may mean that if competitions are to be held in areas where landing options are few that tasking should be done so as to maximise options for those times when things don't go to plan. This comment in no way diminishes the responsibility I feel for my actions, but is more intended as a way to prevent similar accidents".*

The championship was organised by the Glider section of Norwegian Air Sports Federation (S/NLF), who informed us that they held a weather briefing on the morning of the accident, which included:

1. *The synoptic situation (analysis)*
2. *Analysis of the air composition – Ascent curve (simulated humidity, temperature and wind)*
3. *Expected cloud and wind conditions for the day*
4. *Thermal forecasts*
5. *Forecasts for the next day*

The event organisers have also stated in their report that during their presentation of the weather they gave clear indications of the high probability for over-development in cloud conditions, with resulting showers, but that the development was both heavier and quicker than expected. The forecasts were also based on recent weather conditions and experience from periods with the same weather forecast.

According to the organisers, the pilot briefing made it clear that the plateau that they were to fly over was not suitable for landing, and this was also evident on the general description of the competition area with suitable landing areas.

COMMENTS FROM THE ACCIDENT BOARD

The impression of the AIBN is that there were two significant factors that contributed to this accident. The first is that the pilot comes from a country with completely different weather conditions and better access to areas suitable for landing. The second is that the element of competition seems to have greatly affected the pilot's decisions. In his desire to find lift, and win points in the competition, he stretched safety margins beyond the defensible. With the benefit of hindsight, it is clear that he should have landed when he passed the area suitable for landing for the first time. This would have allowed him to complete a normal landing pattern and given him full

control. The decision to continue, and especially to carry out the final 360 degree turn, placed the pilot of LN-GLO in an impossible situation when it began to rain.

The pilot was fortunate that he escaped from this accident without serious injury.