

Incident Details

Incident Reference: AO-2009-072
Time/date UTC 1026 18/11/2009 UTC
Location: YSNF
Aircraft details: VH-NGA
Weather Phenomena: Low Cloud
Incident Description: Ditching - VH-NGA - Westwind - Norfolk Island Aerodrome - 18-Nov-09

Weather Conditions

Synoptic Situation

Mean sea level pressure (MSL) charts on 18 November 2009, (Appendix 1) show a weak front moved across Norfolk Island between 0000 and 1200 UTC¹. Low cloud and showers associated with the front affected Norfolk Island at and around the time of the reported incident. A broad eastward moving trough was also evident in Upper-Level charts at 500hPa (approximately 18,500 feet above mean sea level (AMSL)) near Norfolk Island (Appendix 2).

Cloud, precipitation and visibility

A satellite image (Appendix 4 - Figure 5) shows a cloud band associated with the front to the south of Norfolk Island at 0430 on 18 November 2009. The cloud band moved over the Island by 0830 and remained almost stationary for a few hours, including the time of the reported incident (Figures 6 to 9).

Radar images (Appendix 5) show a band of precipitation moving from the southwest and over the Norfolk Island aerodrome (Figures 10 & 11) between 0830 and 0930. This precipitation was in the vicinity of the aerodrome about the time of the incident.

Surface weather observations and reports from Norfolk Island are attached in Appendix 6. The aerodrome weather reports (Table 3) and the ceilometer reading (Figure 12) during the 24-hour period prior to the incident (period starting from 1030 on 17 November) show that the moist northwest air stream produced a broken to overcast layer of low-level cloud with bases between 400 to 600 feet above ground level (AGL)². The cloud amount decreased to few (1 to 2 oktas) with a base of approximately 700 to 1,000 feet by about 0230 on 18 November, as the dew point depression³ increased due to daytime heating. The low-level cloud once again became broken to overcast with the base at approximately 1,300 ft by 0730 as the front moved closer. By 0830 the cloud base lowered to 300 feet, which coincides with the approximate time the front traversed Norfolk Island. A few automatic weather station (AWS) observations recorded between 0830 and 0902 show scattered low-level cloud with a base of 500 feet and overcast conditions at approximately 1,500 feet. The cloud conditions deteriorated further after 0902, with observations indicating mostly broken to overcast low-level cloud with the cloud base lowered to 200 feet for a period from 0930 to 1053.

It is important to note that the cloud bases recorded around the time of the incident were based on ceilometer output and not provided by a manual observer. The ceilometer will function normally in light precipitation, shallow fog and blowing dust or snow. However as these weather phenomena increase in intensity, a point will be reached where the ceilometer can no longer unambiguously identify the cloud base. In these instances the ceilometer will report the vertical visibility as an effective cloud base. There may be other limitations as to the accuracy of the ceilometer output associated with the instrument and the sampling method used⁴.

The AWS reports and the visibility meter reading (Figure 13) indicate that, along with the broken to overcast layer of low-level cloud, precipitation of 3.0 mm and associated reduced visibility (6,000m or less) affected the aerodrome in the period of approximately 3 hours prior to 1128. This was consistent with the band of precipitation detected by radar.

¹ All times shown in this report refer to Universal Time, Coordinated (UTC) unless specifically stated otherwise.

² All cloud base heights are given in feet above ground level unless specifically stated otherwise.

³ Dew point depression is the difference between temperature and dew point temperature at a certain height in the atmosphere. The larger the difference, the less moisture there is, and the lower the relative humidity.

⁴ Refer to http://reg.bom.gov.au/general/reg/aviation_ehelp/cv.shtml for the explanation and notes on Ceilometer and Visibility meter display.