



Chief Ambulance Services Commissioners Report

Emergency Medical and Retrieval Service - Service Review

Supporting Document 6 Weather Data



**GIG
CYMRU
NHS
WALES**

Pwyllgor Gwasanaethau
Ambiwlans Brys

Emergency Ambulance
Services Committee

Requirement

Aeroptimo has been tasked with providing an analysis of weather conditions likely to impact on the delivery of a HEMS mission from the current and potential bases for use by the Wales Air Ambulance.

Methodology

The Met Office was contacted in order to select sites for which reliable and validated data was available from places as close as possible to the current and potential Air Ambulance base locations.

In order to compare like with like, a threshold cloudbase of 600 ft and visibility of 3000m was chosen, not to constitute an absolute go/no go metric for HEMS, but to represent the sort of conditions at which a HEMS commander would be likely to think twice about commencing a HEMS task. The elevation of the weather stations usually differed from that of the base for which they were being interrogated – the cloudbase at the weather station was therefore adjusted to best represent that of the base. For example, St Athan has an elevation approximately 100ft higher than the heliport at Cardiff Docks – the threshold cloudbase for St Athan was therefore adjusted to 500ft to represent 600ft at the heliport.

Selected Locations

The weather stations selected to represent the base locations are as follows:

Base	Elev.	Relative Weather Position Station	Elev.	Elev. Δ	Threshold Cloudbase
Rhuddlan	16 ft	2nm SSW Rhyl No 2	210 ft	+190 ft	500ft
Caernarfon	14 ft	Co located Caernarfon 20nm	14 ft	0 ft	600ft
Welshpool	233 ft	NW Shawbury	240 ft	+7 ft	600ft
Dafen	128 ft	6nm W Pembrey Sands 11nm	7 ft	-120 ft	700ft
Heliport	40 ft	WSW St Athan	164 ft	+124 ft	500ft

Validity of the Results

Validated data were not available for the actual base locations - the weather stations selected were not collocated: Pembrey is coastal, and further west than Dafen, and therefore potentially very slightly wetter, and thus more prone to poor visibility and low cloud; Cardiff Heliport is coastal, but SE facing and therefore potentially more sheltered from the prevailing SWly flow to which St Athan is exposed. Nevertheless, in view of the proximity of the sites selected and taking into account the elevation differences, it is likely that Pembrey and St Athan weather give a reasonable approximation of that encountered in the vicinity of Dafen and the Heliport, and both sites will represent the best available Met Office validated data.

Considering the other locations, Rhyl is very close to Rhuddlan and is likely to be a very accurate predictor and the Caernarfon station is the most accurate of all. The Welshpool/Shawbury combination is likely to have the lowest correlation simply because of the distance between the sites, nevertheless, informal inquiries of local pilots indicate that Shawbury does give a reasonable prediction of Welshpool weather, and indeed, it is the Shawbury data that are displayed on the Welshpool airport public website.

Results

The data for Caernarfon, Rhuddlan and Welshpool have already been provided to Wales Air Ambulance, but for ease of comparison, and with the Charity's agreement, the headline values are reproduced here.

From extrapolation of the data provided by the Met Office, the percentage of occasions when the weather was below the thresholds of 600ft cloudbase or visibility below 3000m during the period Sep 17 to Apr 22 were as follows:

Location	Represented by	% of Observations
Dafen	Pembrey Sands	11.5
Cardiff Heliport	St Athan	7.4
Rhuddlan	Rhyl	3.2
Welshpool	Shawbury	5.2
Caernarfon	Caernarfon	7.7

The full dataset as provided by the Met Office is attached, it also includes figures likely to represent better the limits to night flying (1200ft cloudbase) and a night time/daytime analysis, which shows as expected, little diurnal variation.



J D A Burgess

17 Aug 23



Emergency Ambulance Services Committee
Unit 1, Charnwood Court,
Billingsley Road
Nantgarw Park
Cardiff
CT15 7QZ

www.easc.nhs.wales



GIG
CYMRU
NHS
WALES

Pwyllgor Gwasanaethau
Ambiwlans Brys
Emergency Ambulance
Services Committee



Uned Gomisiynu Gydweithredol Genedlaethol
GWASANAETHAU DIGIDOL
DIGITAL SERVICES
National Collaborative Commissioning Unit