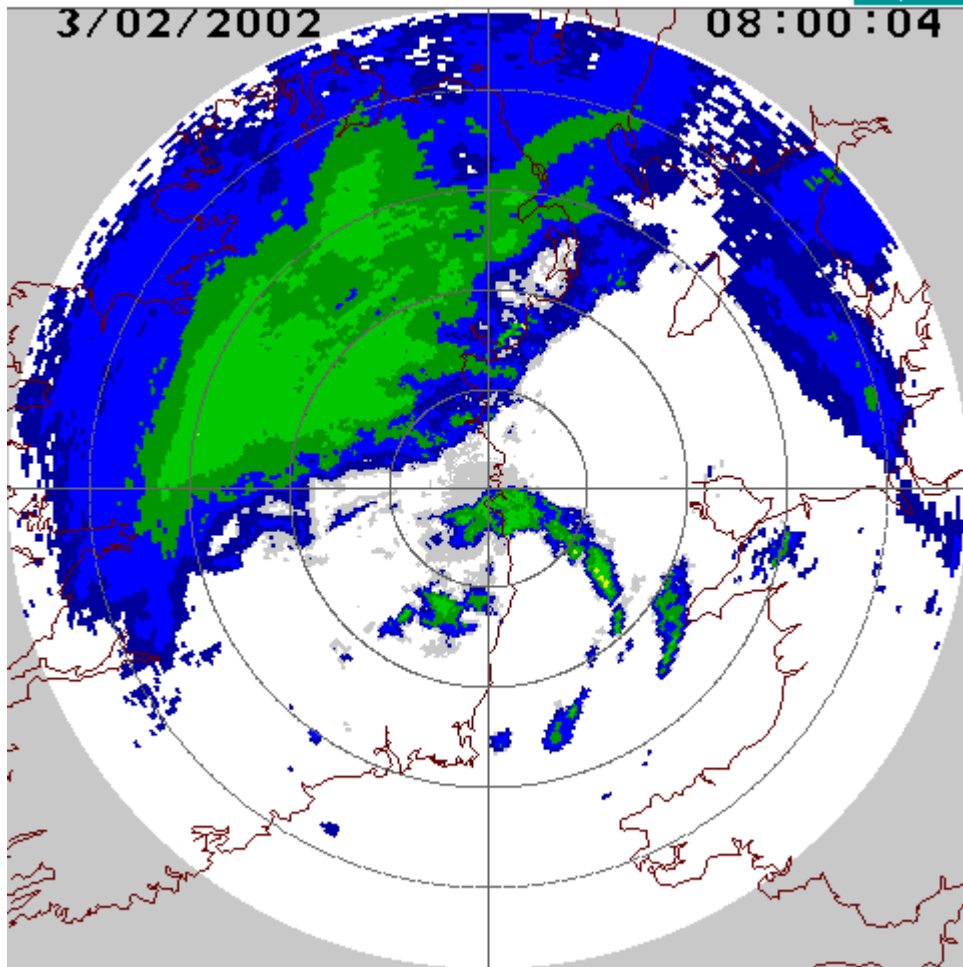


*FINAL REPORT*

**APPENDIX D(a)**

MET EIREANN RADAR PICTURE  
FILE : LKTEMP.PCZ  
DATE : 3/02/2002 08:00:04  
RANGE : 240 KM HEIGHT : 1.5 KM  
RADAR : DUBLIN AIRPORT  
TYPE : PSEUDO-CAPPI RAINFALL  
CLUTTER : NONE



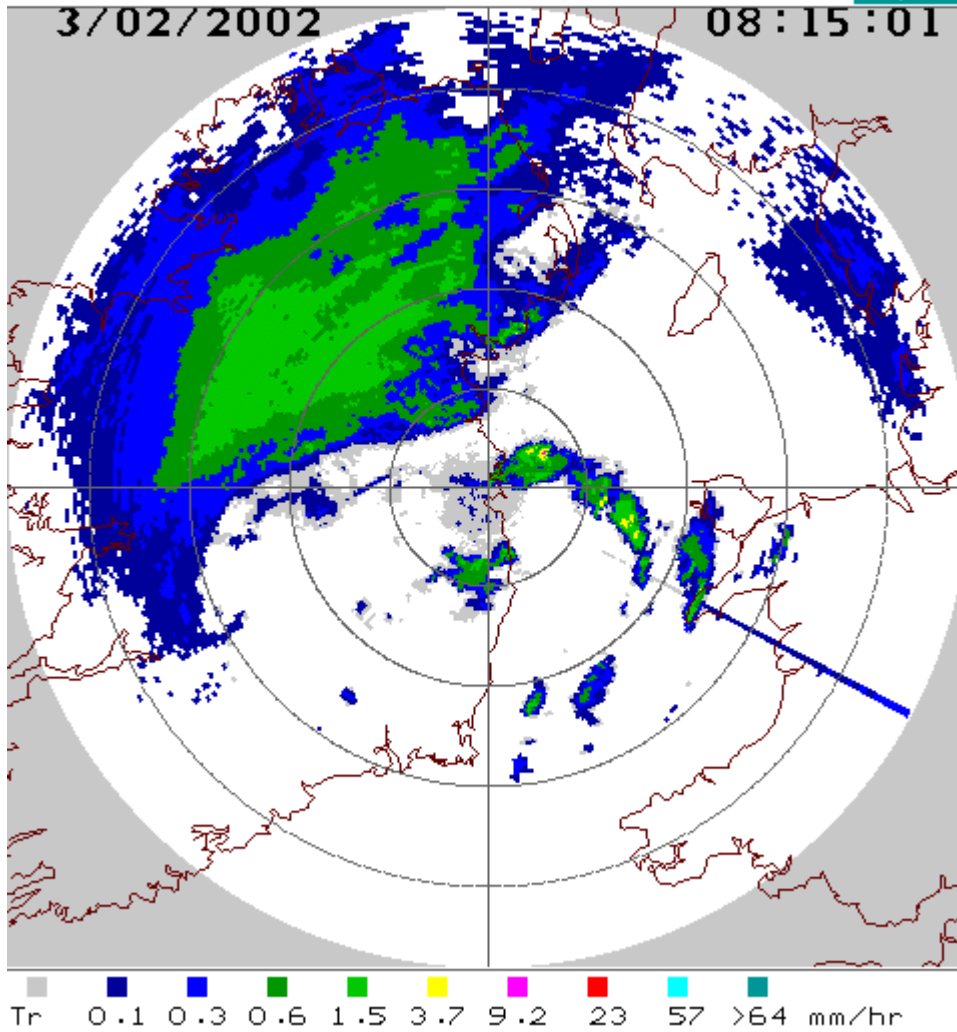
Tr 0.1 0.3 0.6 1.5 3.7 9.2 23 57 >64 mm/hr

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*FINAL REPORT*

**APPENDIX D(b)**

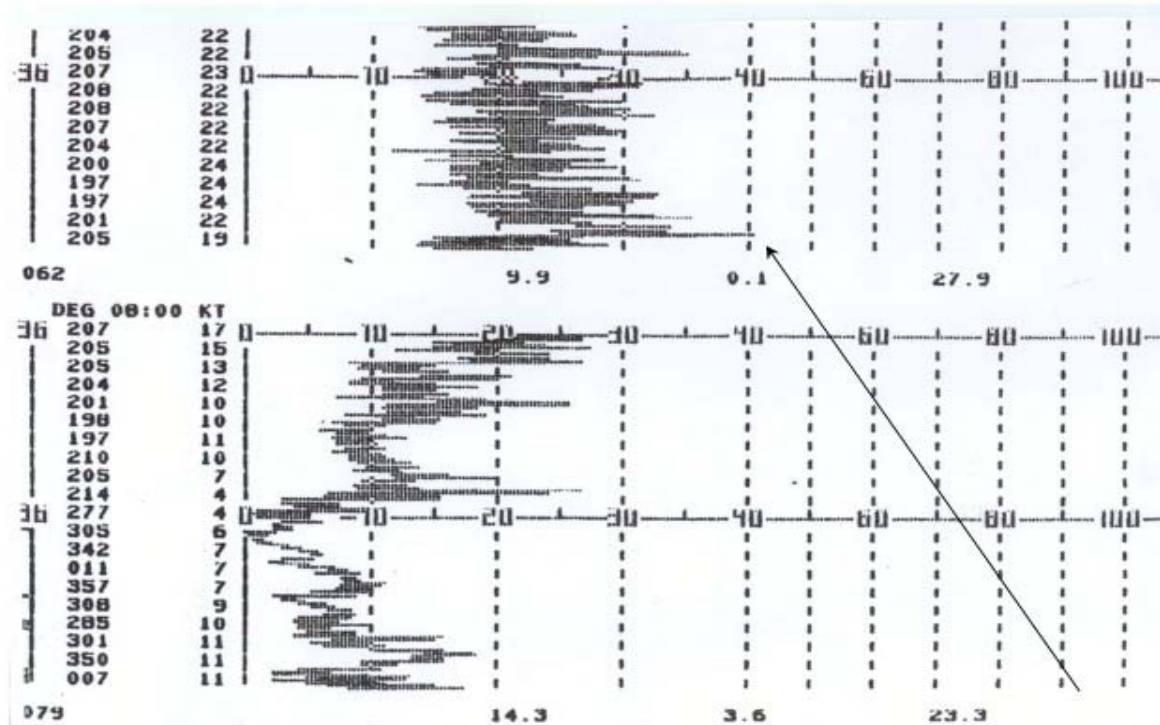
MET EIREANN RADAR PICTURE  
FILE: LKTEMP.PCZ  
DATE: 3/02/2002 08:15:01  
RANGE: 240 KM HEIGHT: 1.5 KM  
RADAR: DUBLIN AIRPORT  
TYPE: PSEUDO-CAPPI RAINFALL  
CLUTTER: NONE





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Appendix E



Gust 43 kts at about  
08.04:45-50 hours

Main Anemometer Trace  
Dublin Airport 3 February 2002

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### Appendix F

#### Defining Average-Wind and Gust<sup>19</sup>

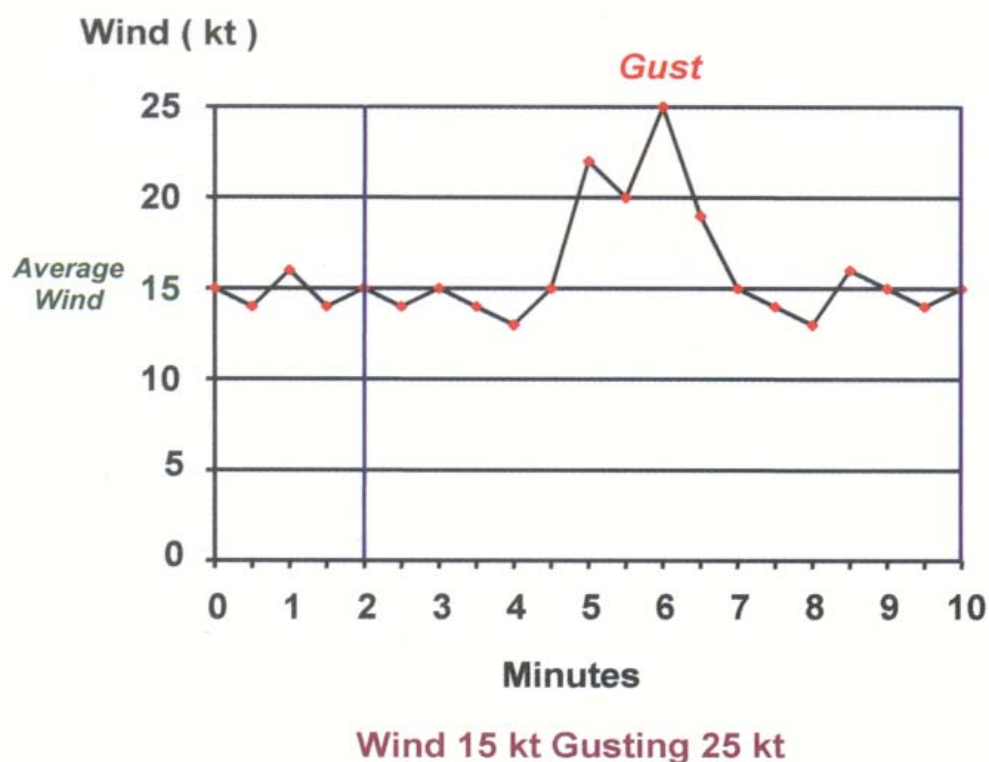
Wind direction and velocity are sampled every second.

The wind profile is averaged over the last 2-minute period to provide the ATIS or tower reported average-wind. The average wind is available to the controller on a display terminal. The wind profile is also observed over the last 10-minute period, the maximum (peak) wind value recorded during this period defines the gust value.

ICAO considers that wind is gusty only if the 10-minute peak value exceeds the 2-minute average-wind by 10 KT or more, however gust values lower than 10 KT are often provided by airport weather services.

**Figure 1** below shows a 10-minute wind profile featuring:

- A 2-minute average wind of 15 KT; and,
- A 10-minute gust of 10 KT (i.e., a 25 KT peak wind velocity during the 10-minute period).



**Figure 1**

<sup>19</sup> Material reproduced from publication “Getting to grips with Approach and Landing Accident Reduction”, with kind permission of Airbus Industrie and the Flight Safety Foundation.

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If the wind peak value is observed during the last 2-minute period, the gust becomes part of the average wind, as illustrated by Figure 2.

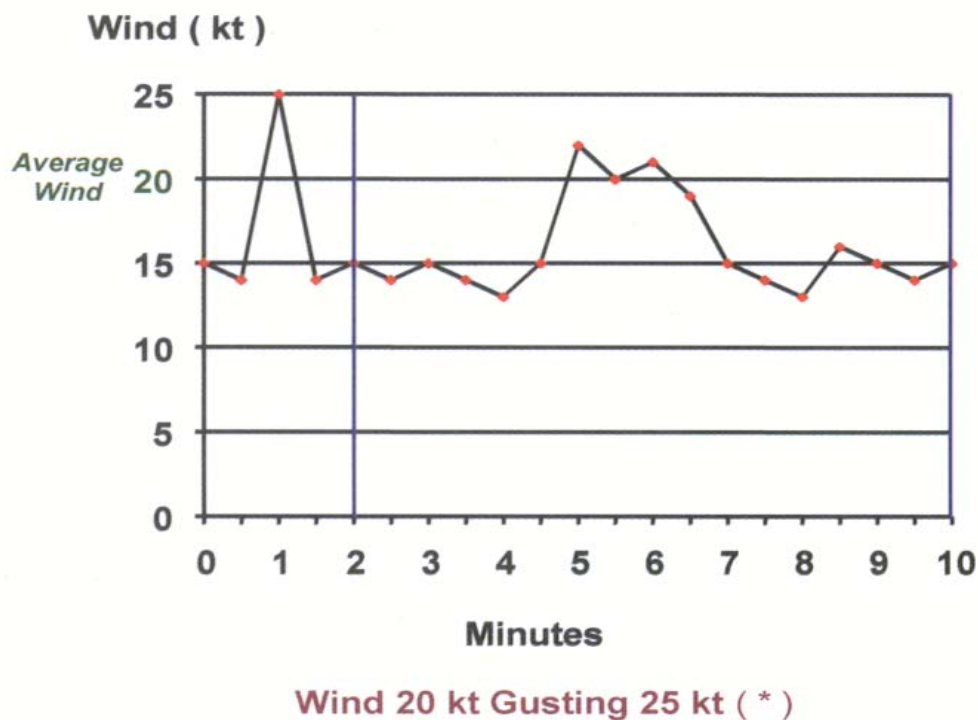


Figure 2

( \* ) : or no reference to gust if the 5-kt gust is not accounted for.

Average-wind and gust values displayed to the controller are refreshed every minute. The 2-minute average-wind and the 10-minute gust are used by ATC for:

- ATIS messages;
- Wind information on Ground, Tower, Approach and Information frequencies.

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METAR observation messages include a 10-minute average-wind and the 10-minute gust, as illustrated by Figure 3 (XXX is the wind direction, referenced to the true north).

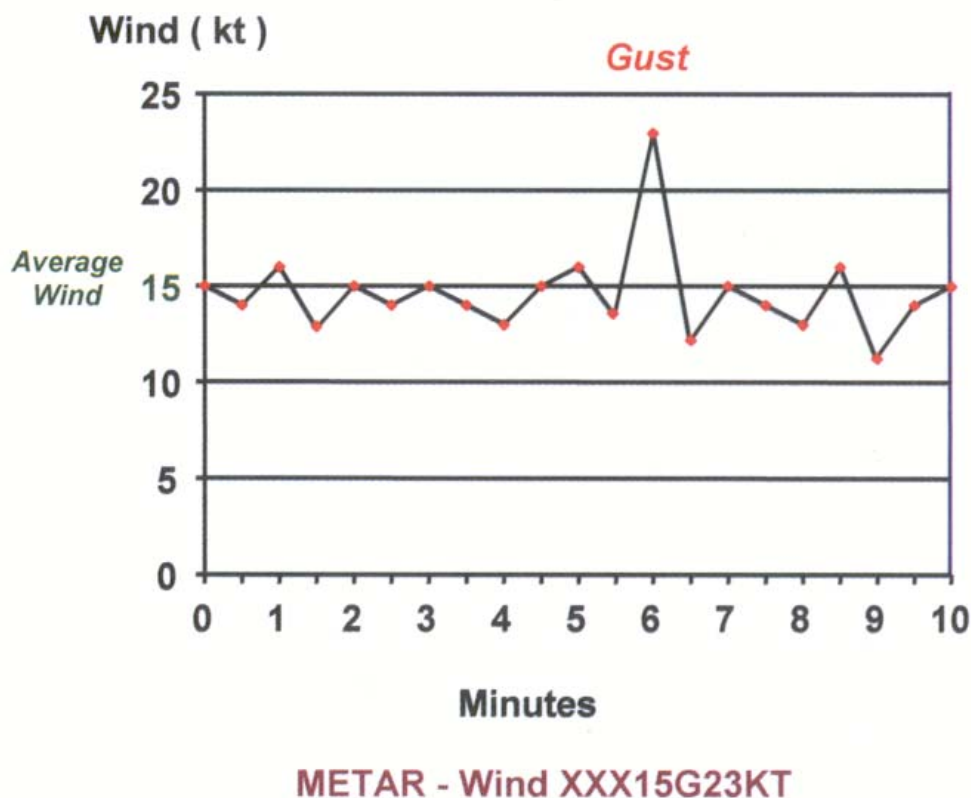


Figure 3

In summary

The METAR wind is a 10-minute-average wind.

The ATIS or tower average wind is a 2-minute-average wind.

The ATIS or tower gust is the peak value during the last 10-minute period.

The ATIS message is updated only if the wind direction changes by more than 30-degrees or if the wind velocity changes by more than 5-KT over a 5-minute time period.