

# EDITORIAL

## Melbourne Forecasts — GOOD OR BAD?

For as long as the Editors can remember, the Bureau has been the butt of innumerable jokes, and even serious attacks by the general public, on the accuracy of its forecasts.

Melbourne weather predictions have always been singled out more so than those for the other State capitals for this sort of treatment. For example, recently a phone call was received in the Victorian Regional Forecasting Centre, the entire purpose of which was to comment that Melbourne forecasts were, in the opinion of the caller, 'the worst in the world'. Melbourne weather forecasters are used to receiving criticism from the public. However, there have been a disturbing trend recently among meteorologists outside the Victorian Centre to single out Melbourne forecasts as being the worst in the country. To illustrate — at a conference of some of the nation's top meteorologists late in 1981, data was presented which depicted the performance of the Victorian Office in a poor light. Numbers of maximum temperature forecast errors in excess of 5°C, made at each capital city over recent years, were given. The information showed that the Melbourne Centre is responsible for more major forecasting errors than any other capital. The Editors do not wish to argue with the validity of this information, for Melbourne maximum temperature predictions are less accurate than those for the other State capitals (see Table 1). What should be pointed out, however, is that it has long been recognized that the value of a set of forecasts of a particular weather element is related to:

1. the variability of that element, and
2. geographical influences on difficulty in forecasting that element.

**Table 1** RMS error (°C) of maximum temperature predictions for the six Australian State capitals (1969 - 1981)

Capital	RMS error (°C)
Melbourne	2.94
Hobart	2.77
Perth	2.58
Sydney	2.31
Adelaide	2.21
Brisbane	2.03

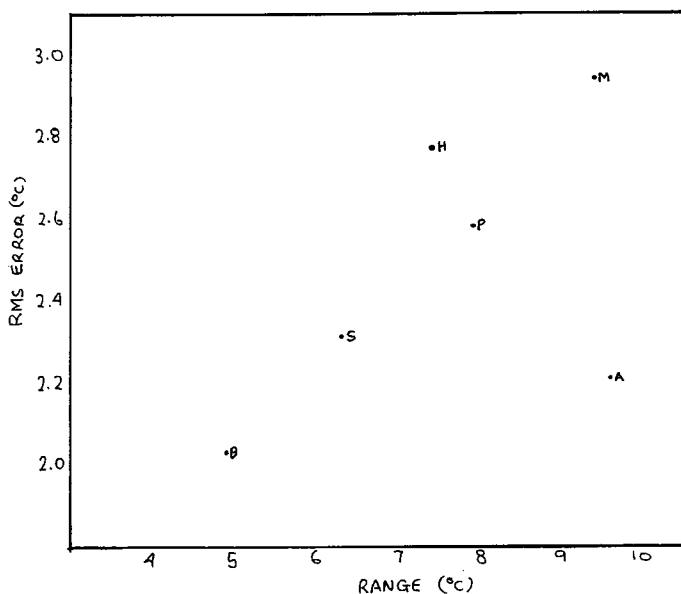


Fig. 1. The relationship between mean weekly temperature range and forecast accuracy at each of the six State capitals (A = Adelaide, B = Brisbane, H = Hobart, M = Melbourne, P = Perth, S = Sydney)

A parameter which may be used to represent temperature variability at a location is the annual average weekly temperature range. This is approximately equal to the mean of the twelve monthly values of the term '86 percentile value' minus '14 percentile value'. Fig. 1 presents plots of this term versus RMS error for each of the capitals. It suggests that, with the exception of the data for Adelaide, a strong relationship exists between temperature range at the State capitals and the RMS error of the forecasts. It may be that geographical differences in difficulty account for the apparent departure from the relationship in the case of Adelaide.

Evidence that geographical differences in difficulty may have an impact on forecast accuracy is presented in Fig. 2. Every fire weather season (early summer to early autumn approximately) Victorian fire control authorities are provided with forecasts of various weather elements for about twenty locations around the State. Fig. 2 depicts the relationship between mean weekly temperature range (calculated over the months December - March) and forecast accuracy. With the exception of the data for the Mt. Buffalo/Mt. Hotham combination, only locations for which information exists about forecast accuracy for at least ten seasons (between 1964 - 5 and 1980 - 1) are considered. The plots show that strong, but different, relationships exist between temperature range and forecast accuracy for the west/central areas of Victoria and for eastern Victoria and that neither of these relationships is satisfied for the alpine combination. The differences may be explained in terms of geographical influences on difficulty in forecasting maximum temperature. In conclusion, the Editors believe that comparative rating of forecasts is a task fraught with difficulty, and that it is a folly to rate forecast skill on the basis of accuracy alone.

J. de la Lande  
R. J. Hagger  
H. Stern

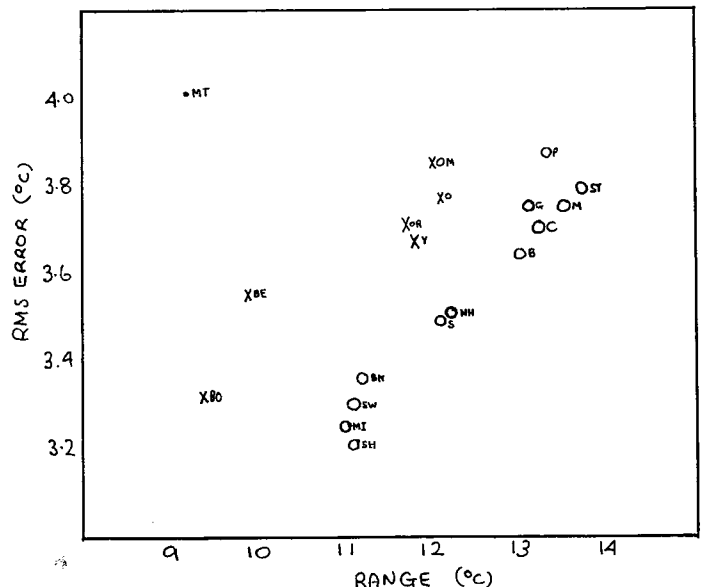


Fig. 2. The relationship between mean weekly temperature range and forecast accuracy during the fire weather season at various Victorian locations. Note: plots for the locations in the west/central areas of the State are depicted by a circle; plots for the locations in eastern Victoria are depicted by a cross, with the exception of the plot for the alpine region which is depicted by a dot (B = Ballarat, BE = Beechworth, BN = Bendigo, BO = Bonegilla, C = Casterton, G = Gellibrand, M = Melbourne, MI = Mildura, MT = Mt. Buffalo / Mt. Hotham combine, N = Nhill, O = Olsens Bridge, OM = Omeo, OR = Orbost, P = Powelltown, S = Seymour, SH = Shepparton, ST = Stawell, SW = Swan Hill, Y = Yallourn).