



**Australian Meteorological
& Oceanographic Society**

**Submission to the 2009 Victorian Bushfires Royal Commission
from the Australian Meteorological & Oceanographic Society (AMOS)
13 May 2009**

Scope of this Submission.

This submission addresses *Term of Reference (2): The preparation and planning by governments, emergency services, other entities, the community and households for bushfires in Victoria, including current laws, policies, practices, resources and strategies for the prevention, identification, evaluation, management and communication of bushfire threats and risks, specifically the accuracy of weather forecasts for Saturday 7 February, as issued by the Bureau of Meteorology.*

Background: What is AMOS?

AMOS is an independent Australian professional society that supports and fosters interest in meteorology, oceanography and other related sciences. The Society helps all those with an interest in the environment including research workers and professionals, and those whose work is affected by, and affects, the atmosphere and oceans. It provides support and fosters interest in meteorology and oceanography through its publications, meetings, courses, grants and prizes, and represents the views of its members to Government, institutes and the public. The Society's 500+ members include weather observers and forecasters, weather and climate researchers in universities and government research bodies, consultants, and teachers. More details about the Society and its publications are available at www.amos.org.au.

Weather forecasts for Melbourne, for 7 February 2009.

The maximum temperature forecasts for Melbourne, for Saturday 7 February, as issued by the Bureau of Meteorology around 4-5pm on the three days leading up to Black Saturday, were:

Wednesday 4 February: 43°C
Thursday 5 February: 43°C
Friday 6 February: 44°C

The actual maximum temperature observed on 7 February was an unprecedented 46.4°C. Prior to 7 February, the record February maximum temperature was 43.2°C, so the forecasts from Wednesday and Thursday were of near-record temperatures and the forecast of 44°C issued on Friday 6 February was the hottest temperature ever forecast by the Bureau of Meteorology for Melbourne. The weather forecasts enabled the issue of early warnings that the fire situation on Saturday 7 February would be extreme. The confidence with which the Bureau could issue these forecasts of near-record and record temperatures, days in advance, allowed an improved community, political, and emergency management response that undoubtedly saved lives. Other detail

in the forecasts issued in the week leading up to 7 February indicating that Saturday would be windy with a late cool change would also have helped emergency response planning. The excellent accuracy of the forecast timing of the strong wind change in late afternoon especially would have been very helpful. The accuracy of the forecasts for 7 February 2009 reflects substantial, gradual improvements in the skill of Bureau of Meteorology weather forecasts over several decades (Stern, 2008) – the accuracy of the forecasts on Black Saturday were no fluke. Forecasts of maximum temperature *four days ahead* are nowadays more accurate than were forecasts *one day ahead* in the early 1980s, *i.e.* at the time of the Ash Wednesday fires. This improved forecasting skill has been achieved through improved monitoring of the atmosphere by remote sensing techniques, improved computer weather forecast models, and improved management of the forecast process.

Concluding remarks

The improvements in the skill of weather forecasts over the past several decades have been achieved through the dedication of forecasters, managers, weather observers, and researchers, within Australia and internationally. The substantial improvements in the skill of these forecasts now enable a much more effective and timely emergency management response than was possible in the past, although even further improvements can be made to the forecasts and their communication to emergency management and the public.

Reference

Stern, H., 2008. The accuracy of weather forecasts for Melbourne, Australia. *Meteorological Applications*, **15**, 65-71.