WORLD METEOROLOGICAL ORGANIZATION

COMMISSION FOR INSTRUMENT AND METHODS OF OBSERVATION

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CIMO EXPERT TEAM ON UPGRADING THE GLOBAL RADIOSONDE NETWORK
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CURRENT NATIONAL UPPER AIR ACTIVITIES - AUSTRALIA

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Summary and purpose of document

This document summarises the status of upper air activities in Australia.

Action proposed

The meeting is invited to take into account information presented in this document when discussing high priority issues.

Current National Upper Air Activities - AUSTRALIA

1. Australia's Commonwealth Bureau of Meteorology currently operates a network of 50 upper air stations. Of these, 22 are radiosonde stations employing Vaisala PC-Cora with RWIND software, 12 others are equipped with Vaisala Autosonde (Digicora II) units and use GPS sondes, 4 are Antarctic stations employing Vaisala Digicora I units and GPS sondes, and 12 perform upper wind-only observations using wind find radar. The radiosonde currently employed throughout the network is the 400MHz Vaisala RS80. Most of the radiosonde stations perform twice daily (00 and 12UTC) soundings, the remainder once daily (00Z only), and most stations perform wind-only flights at 06 and 18UTC.

2. In addition to its network of upper air stations, Australia is also an active participant in the WMO AMDAR programme, having commenced its own programme in 1986, and currently receives AMDAR data from a fleet of 35 commercial aircraft (31 flying international routes, 4 domestic).

3. A number of activities is underway regarding the future of Australia's upper air programme, each being aimed at increasing either the effectiveness or the economy of the programme, primarily by the selective use of new technology.

4. The Bureau of Meteorology has recently commenced replacement of all of its existing radiosonde ground receiving units with the Vaisala Digicora III unit, a process which will continue over the next few years. With the likely cessation of manufacture of the Vaisala RS80 sonde in the medium term future, planning is now also in hand for a trial evaluation of the RS92 radiosonde, to be held in Australia during 2004. Further planned refinements of the Australian upper air network during the next few years include replacement of radar balloon tracking at two upper wind only stations with boundary layer profilers, and one more radiosonde station will be converted to Autosonde operation.

5. A number of developmental projects is also underway. One of these is concerned with developing an alternative balloon tracking instrument, based on the radio theodolite, to overcome the need to maintain expensive wind finding radars. A separate collaborative project underway with the University of Adelaide is examining the feasibility of employing a tropospheric profiling lidar to obtain water vapour soundings.