

COMPARISON OF AEROLOGICAL DATA MEASURED
BY MEANS OF RS2-91 RAWINSONDE AND RS2-80
RAWINSONDE AT SYOWA STATION,
ANTARCTICA (ABSTRACT)

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The RS2-91 rawinsonde system replaced the RS2-80 rawinsonde system on January 1, 1995 for upper-air observations at Syowa Station, Antarctica. In order to determine the properties of RS2-91 and RS2-80, a total of 45 flights were carried out with the two types of link radiosondes at Syowa Station, from December 1994 to September 1995. The RS2-80 rawinsonde consists of a rod thermistor painted in white, a carbon hygistor and a baroswitch aneroid capsule for measuring temperature, humidity and pressure, respectively. The RS2-91 rawinsonde consists of a rod thermistor coated with vacuum-evaporated aluminum, a thin capacitor film and a capacitive aneroid capsule, respectively. The solar radiation correction is applied for air temperature measurements with both the RS2-91 and RS2-80.

The differences of temperatures measured at standard pressure levels were within approximately $\pm 0.5^{\circ}\text{C}$ in the troposphere, and within approximately $\pm 1.5^{\circ}\text{C}$ in the stratosphere during this period.

The characteristic tendencies are as follows. In the stratosphere in the daytime, the temperatures measured by RS2-91 were lower than those measured by RS2-80 in the winter, under low temperature conditions (below -80°C). In the fall (approximately -50°C), however, those measured by RS2-91 were higher than those measured by RS2-80.

(Received January 17, 1997; Revised manuscript accepted May 7, 1997)