

Radio Communication Operated by the JARE South Pole Traverse 1968-69

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1. Transmission

For a long distance radio communication, two sets of KWM-2A transceiver were used. Its capacity was 100 W in A_1 , 75 W in A_{3j} , and its source voltage was 28 V DC. The JARE South Pole Traverse 1968-69 operated at frequencies between 4 and 28 MHz for the radio communication with Syowa Station, Amundsen-Scott Station, Plateau Station, McMurdo Station, and Byrd Station, New Zealand Scott Base, British Hallet Bay Station, and a number of amateur radio stations.

The radio communication proved to be highly satisfactory during the whole trip to and from the South Pole, except the following troubles. A circuit

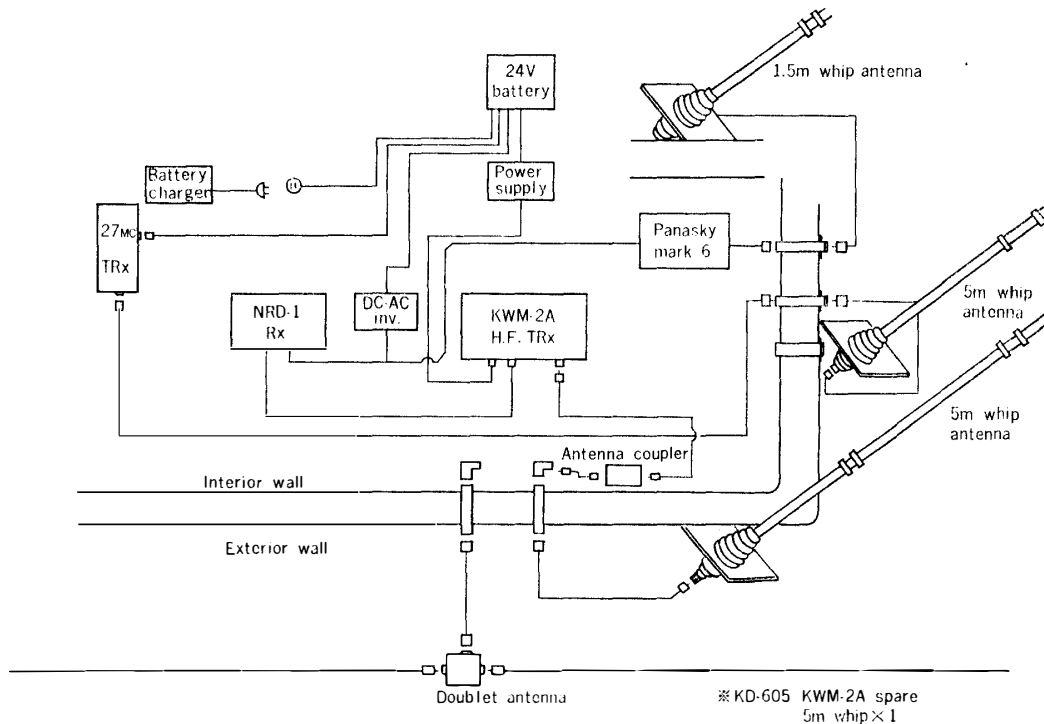


Fig. 1. Equipment chart of KD604 and KD605.

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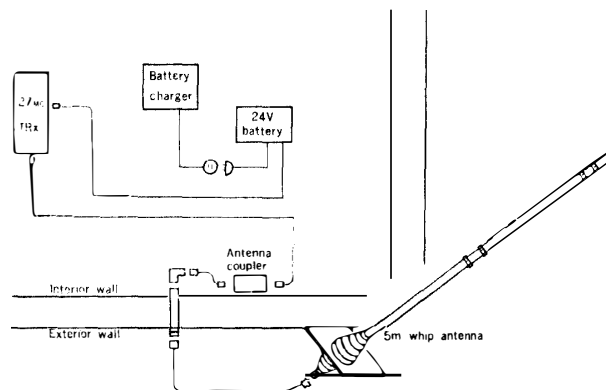


Fig. 2. Equipment chart of KD603 and KD606.

of power amplifier was damaged due to the vehicle's shock in the high sastrugi area and one of the sets became unreparable. Two sets of Panasky-Mark 6 (JRC) were installed aboard each leading vehicle of two groups, and were used for the inter-communication between these two groups. The power was 10 W, operating at the frequency 50.8 MHz, with source voltage of 100 V AC. The DC-AC inverter was often found unworkable because the ocmmutator was covered with frost by low temperature encountered in the period of pre-austral summer.

Besides the above-mentioned equipments, GRC-9 and 50W SSB HF transceivers were prepared as spare equipments.

2. Receiver

One set of NRD-1 all wave receiver was installed aboard the leading vehicle, KD604. Receiving frequencies were between 90 kHz and 30 MHz, and the source voltage was 100 V AC. It proved to be satisfactory during the whole trip, but sometimes troubles were experienced such as the poor connection at the base of vacuum tubes and malfunction in the break-in-relay when the vehicle was in operation on the very rough surface. The fall of the sensitivity was hardly noticeable, but all vacuum tubes were changed at the South Pole in advance so as to maintain favorable operation in the remaining trip to Syowa Station.

3. Antenna

One 5 m high whip, and one 1.5 m high whip antennas were used for HF and VHF respectively. When the air condition was bad, however, a doublet antenna was used.