

Radio in the N.S.W. Alps

(Reprinted from the Proceedings of the Institution of Radio Engineers, Australia.)

EQUIPMENTS were originally installed at the Hotel Kosciusko, which is about fifty miles from the rail-head at Cooma; at the chalet, which is eleven miles from the Hotel along the Summit Road; at the Seaman Memorial Hut, a futher four miles along the Summit Road, and two miles from the summit of Mount Kosciusko—the highest peak in Australia (7308 feet); at the Alpine Hut, near the Brassy Peak, and about nine miles due north of the Hotel; and at White's River Hut, on the river after which it is named, and about seven miles north-west of the Hotel.

The equipments used were Army Type 109 Sets, the transmitter being of the master-oscillator power-amplifier type, capable of from five to ten watts output. Common-frequency working on 2720 kilocycles is used. Primary power at Alpine and White's River Huts is supplied by 5-volt 525-ampere-hour Edison cells, charged by petrol-driven generators. The Edison cells have proved immune to the severe climatic conditions attaching to this type of service, and have given no trouble. At the Seaman Memorial Hut, the electrolyte in the 6-volt 150-ampere-hour lead-acid battery would freeze at sub-zero temperatures, and burst the battery. This difficulty has since been overcome by burying the battery underground.

The aerials used are of the half-wave voltage-fed Wyndham-type, and are supported on 40-foot stem-pipe masts, four inches in

diameter at the base, stepping down to one and a half inches at the top. Each mast has sixteen uninsulated stays of 7-16g. steel wire, in four sets of four at right angles. The stay-blocks are set in the ground to a depth of three feet. With one exception—in which a stay-block pulled out—the masts have withstood two winters without trouble. Copper wire aerials were used at first, but after some breakages they were replaced with 7-16g. galvanised steel wire, which has given satisfactory service. Vacuum-type lightning-arrestors are used on all aerials.

The sets in the huts are mounted on small tables made from the packing cases used to transport them to their locations. The units at the Hotel and at the Chalet are rack-mounted.

The sets are capable of use for telegraphy, but because of the nature of the service, telephony is used exclusively, each set being equipped with a microphone and headphones. As those fitted in the huts may be used by inexperienced operators, suitable instructions for use are displayed on the wall near the sets.

The locations at Alpine and White's River Huts are inaccessible to the ordinary means of road transport. In March, 1946, the gear was taken in by two Park Rangers, using a pack horse and slide. Each of these two installations took about five days to complete.

Operation was at first unsatisfactory. An appreciation of the need for systematic main-

tenance led to one of the Park Rangers—Mr. John Abbottsmith, who has since joined the Antarctic Expedition—being assigned to these duties, after a suitable training course. In winter, the maintenance programme necessitated a weekly patrol of eighty miles on skis.

The sets at the Hotel and Chalet have since been modified for crystal-control, an increased power of 25 watts in the aerial, hand-set operation, and bell-calling. At the same time, another similar set was installed at Cooma, by arrangement with Station 2XL, for communication with the Hotel when the telephone line is out of service, as often happens in bad weather.

The receivers at the Hotel and Chalet operate continuously, the set at Cooma also being kept on the air when necessary. When any hand-set is lifted, the transmitter is switched on, and the carrier operates the bell-call at the Hotel and Chalet, and also

at Cooma when the set is in operation there. The bells are relay-operated, and continue to ring until the call is answered. In operation, press-to-talk buttons are used on the handsets. Replacement of the handset restores the equipment to the stand-by condition.

The call-signs of the stations are as set out below:—

Hotel Kosciusko	VL2HA
The Chalet	VL2HB
Seaman Hut	VL2HC
Alpine Hut	VL2HD
White's River Hut	VL2HE
Cooma	VL2HF

The system has been used for handling telegrams between Cooma and the Hotel and Chalet when the lines are out of order, for general communication between stations, and by the Park Rangers for reporting purposes.