RADIO AUSTRALIA . SHEPPARTON .

TRANSMITTERS .VLA .VLB .VLC .

RADIO AUSTRALIA.

Following discussions between the British and Australian Governments early in 1941, it was decided to establish in Australia a powerful radio station which would be capable of broadcasting to any country in the world and one which would play an important part in maintaining a world range broadcasting service in Asia and the Pacific.

Shepparton was finally selected as the location for this international high-frequency broadcasting station because of its geographical situation, the availability of electric power and water supplies, and its proximity to important centres of programme supply such as Canberra, Sydney and Melbourne.

The Postmaster-General's Department was entrusted with the responsibility of designing, constructing and operating the station, and in May, 1944, the first unit, a 50 kilowatts transmitter, came into operation. The station is now equipped with three transmitters, one of 50 kilowatts and two each of 140 kilowatts maximum power, and transmits on several channels in the frequency band 6-22 megacycles per second.

It is well-known throughout the world as Radio Australia. Programmes in many languages convey Australian news and information to most parts of the globe.

One factor which appeals to many overseas listeners is that because Australian E.S.T. is 10 hours ahead of Greenwich, 15 ahead of New York, 18 ahead of San Francisco and just over 22 hours ahead of Honolulu they hear tomorrows news today and one listener has described the broadcast as the "Voice from Tomorrow".

Occupying an area of nearly 600 acres Radio Australia represents an unusually large radio engineering work. The radio frequency equipment is in the main transmitter hall, and all heavy equipment, such as power transformers and modulation transformers, is in concrete cubicles opening on to the galleries on either side of the building. In the basement, water-cooling equipment, some transformers, and auxiliary equipment are housed. The mezzanine floor accommodates the programme control equipment for all transmitters, 2 emergency studios and a monitoring room in which observations on the audio input and the transmitter output may be made in quiet surroundings. In order to meet the requirements of adequate transmission to any part of the world at any time of the day, 19 directional arrays have been erected, the supporting structures being 14 guyed lattice steel masts, each 210' in height.

After proving its effectiveness in war, Radio Australia now plays an important role in the peaceful progress of the Australian people.

Some items of interest are included in the following pages.

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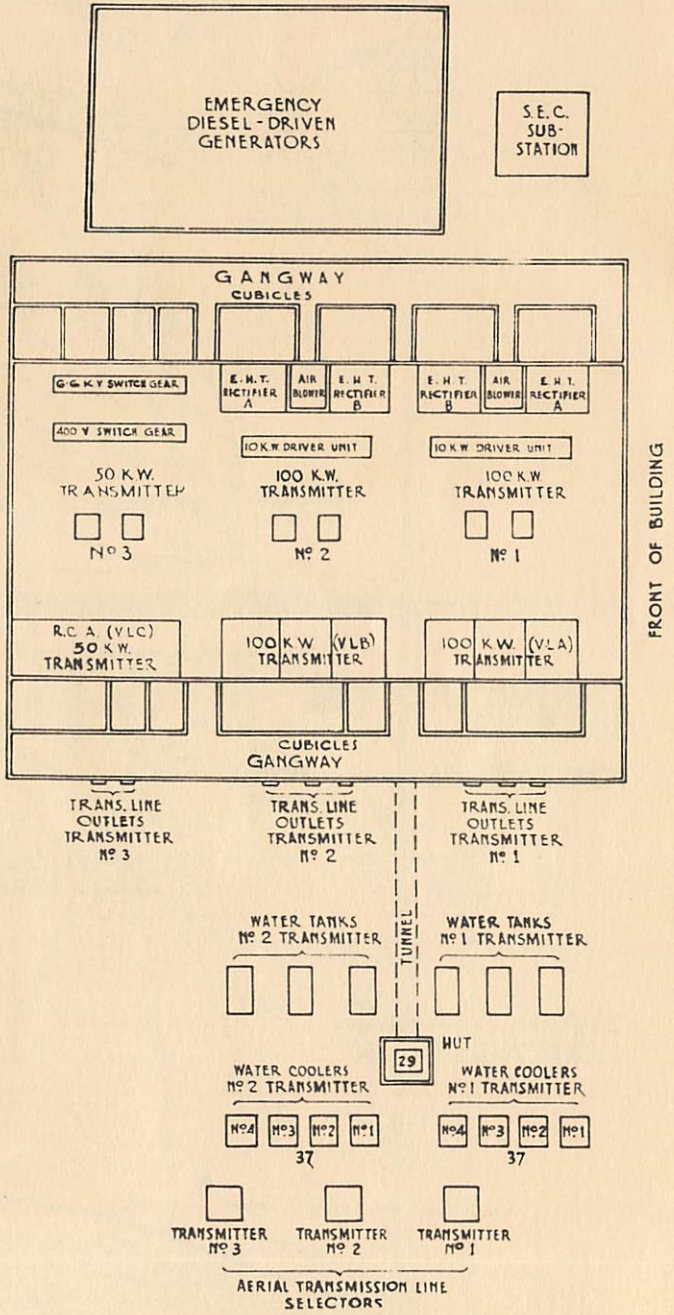
RADIO AUSTRALIA - AERIAL DETAILS.

Group	Aerial No.	Freq. Mc/s	Bearing	Type	Available Transmitters
Asia-Japan	1	9.6	342°	Array	VLA, VLB.
	2	11.8	342°	Array	VLA, VLB.
	3	15.2	342°	Array	VLA, VLB.
	4	7.2	342°	Array	VLA, VLB.
	5	6.22	354°	Re-entrant Rhombic	VLA, VLB, VLC.
North America S. Africa	6	21.8	63° and 239°	Array	VLA, VLB.
	7	17.6	63° and 239°	Array	VLA, VLB.
	8	15.2	63° and 239°	Array	VLA, VLB.
	9	11.8	63° and 239°	Array	VLA, VLB.
	10	9.6	63° and 239°	Array	VLB, VLC.
	11	6.22	63° and 239°	Reversible Rhombic	VLB, VLC.
Europe	13	6.1	109° and 294°	Array	VLA, VLB.
	14	9.6	99°, 125°, 279°, 305°	Array	VLA, VLB.
	15	11.8	99°, 125°, 279°, 305°	Array	VLA, VLB.
	16	7.2	109° and 294°	Array	VLA, VLC.
	17	15.2	99°, 125°, 279°, 305°	Array	VLA, VLC.
	18	17.8	99°, 125°, 279°, 305°	Array	VLA, VLC.
	19	21.6	99°, 125°, 279°, 305°	Array	VLA, VLC.
	20	6.22	131° and 311°	Reversible Rhombic	VLA, VLB, VLC.
Alternative Japan-N. Pacific	22	21.6	354°	Array	VLB, VLC.
	23	11.8	354°	Array	VLB, VLC.
	24	9.6	354°	Array	VLB, VLC.

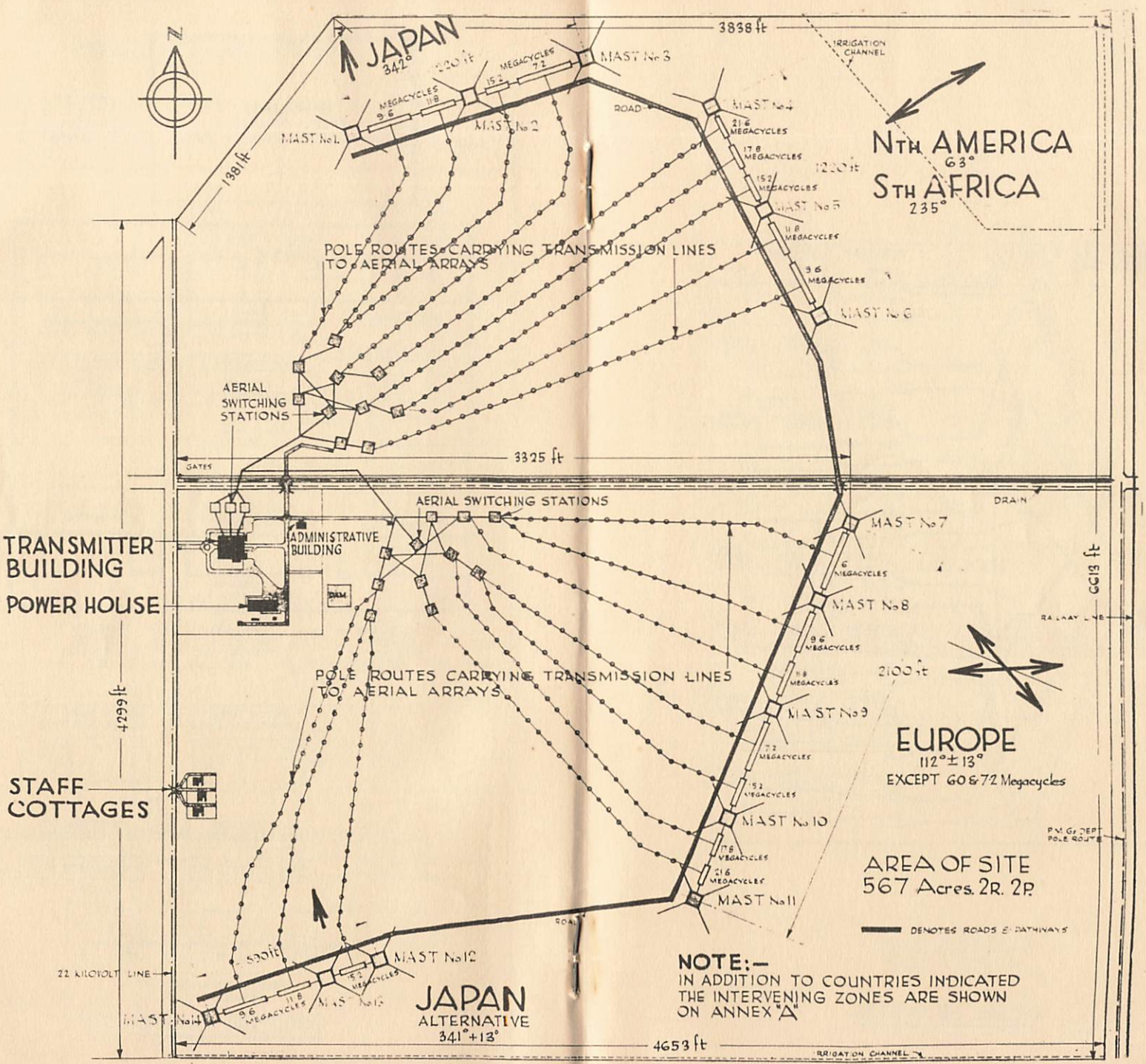
4-Element Co-Linear Array with Parasitic Reflector.

Horizontal Directivity - Major lobe is 18° wide for signal 6 db down.
Vertical Angle - 2 tiers (6.1, 7.2) 18° - lobe is 28° wide for signal 6 db down.
- 3 tiers (9.6) 12° - lobe is 18° wide for signal 6 db down.
- 4 tiers (15.2, 17.8, 21.6) 8° - lobe is 8° wide for signal 6 db down.

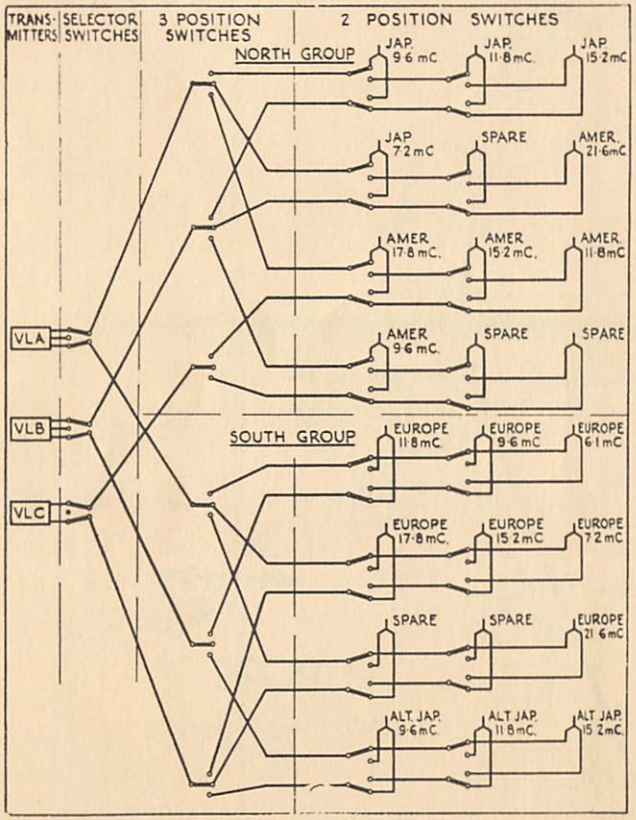
Gains - 2 tier 12 db.
- 3 tier 14 db.
- 4 tier 15 db.



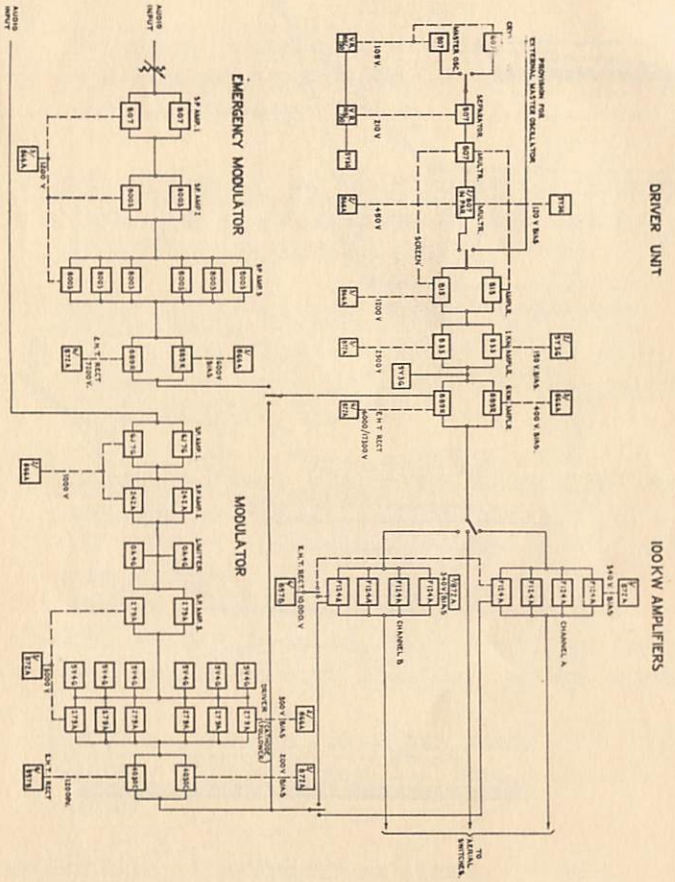
BUILDING LAYOUT.



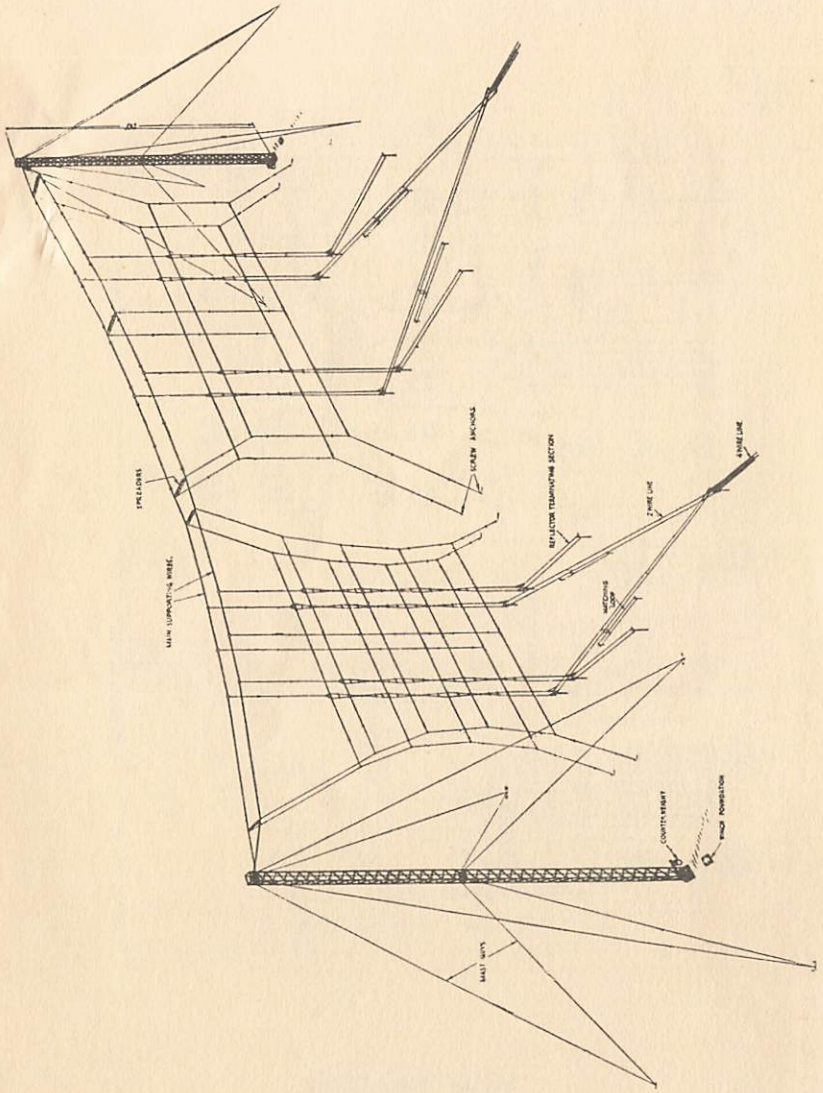
LAYOUT OF SITE I.H.F.T.S. SHEPPARTON, VICTORIA



AERIAL SWITCHING.



100 kW TRANSMITTER.
(BLOCK SCHEMATIC.)



TYPICAL AERIAL.

MAIN GROUPS OF WORK AND CONTRACTORS ASSOCIATED WITH THE INSTALLATION OF EQUIPMENT AND PLANT WERE AS FOLLOWS:

2 - Radio Transmitters 100-140 kilowatts - Jointly by -

Standard Telephones and Cables Pty. Ltd. and Amalgamated Wireless (A/asia.) Ltd. both of Sydney.

1 - Radio Transmitter 50 kilowatts - Purchased from Radio Corporation of America and installed by P.M.G. staff.

Power Supply 66,000 volts 3-phase 50 cycles per second with 2,000 kVA sub-station - State Electricity Commission of Victoria.

Emergency Power Plant - 2 Crossley diesel engines and Brush alternators 800 B.H.P., 400 kVA, 6,600 volts, 3-phase, 50 cycles per second; and 2 Crossley diesel engine alternators, 84 H.P., 50 kVA, 400 volts, 3-phase, 50 cycles per second William Adams and Co. Ltd. of Melbourne.

14 - Lattice Steel Guyed Masts each 210' high - Sidney Williams and Co. Pty. Ltd. of Sydney

19 - Aerials, Transmission Lines - P.M.G. staff.

151 - Aerial Switches - Design and installation by P.M.G. staff. Manufactured by Australian General Electric Co. Ltd. of Melbourne.

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