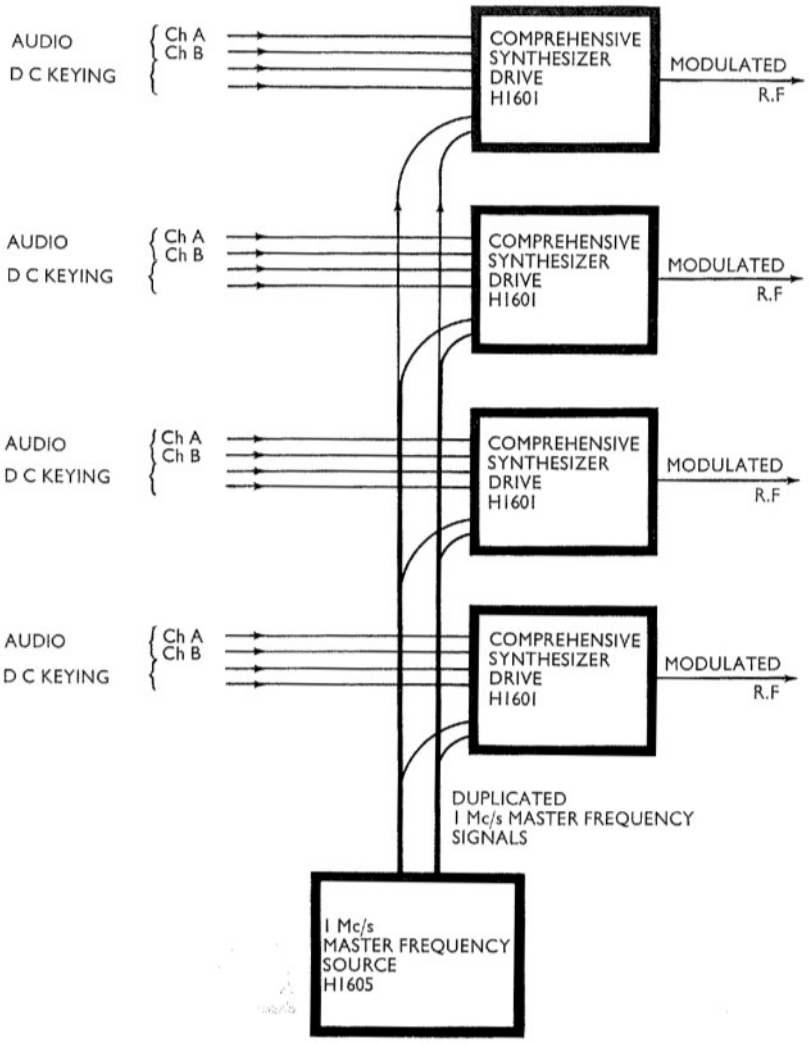
H.F COMMUNICATION SYSTEMS

MST Transmitting System

MST DRIVE SYSTEMS

THE MST drive system generates modulated radio-frequency signals for driving linear-amplifier transmitters. The system uses frequency synthesizers, with decade dial controls, to create, from a 1 Mc/s master frequency, any required radiated frequency in the h.f band. One master frequency source serves the whole station. A comprehensive modulator unit provides any type of modulation used in h.f communication systems.



The general arrangement is shown in the diagram. The 1 Mc/s master frequency source, Type H 1605, uses Type H 1501 master oscillators and provides a number of duplicated 1 Mc/s outputs. These feed the comprehensive synthesizer drive assemblies, Type H 1601, where they are combined in a hybrid transformer. The duplicated 1 Mc/s signals are derived from the same master oscillator, *via* different distribution amplifiers, and so are identical in frequency, but there is a phase difference between them which ensures that failure of either of the duplicated signals results in no change in the level of the output from the hybrid combining transformer.

Each H 1601 assembly consists of a cabinet which normally houses two independent modulator units (Type H 1503), synthesizers (Type H 1500) and wide-band amplifiers (Type H 1001), to raise the modulated r.f signal levels to about 1·5 watts p.e.p for driving two transmitters.

The modulator unit Type H 1503 generates a modulated signal at a sub-carrier frequency of 100 kc/s. In the H 1601 assembly, this sub-carrier is added to the synthesizer output within the synthesizer to produce a modulated r.f signal at the required frequency.

The only operational controls in the MST drive system are the decade frequency selecting switches on the synthesizers, and switches or push-buttons for selecting the required type of service on the modulator units.

For smaller stations containing few transmitters, a drive assembly Type H 1602 is available. This is similar to the H 1601 but incorporates its own master oscillator and distribution amplifier. It is, therefore, a completely self-contained drive for one or two transmitters.

The following pages describe some items in the range of MST drive equipment. However, the system is a flexible one which can be tailored to meet particular requirements and an extensive variety of arrangements is possible.