

- 10) To cure "chirp" on CW transmissions you should ensure that:
- the key contacts are cleaned.
  - the aerial is well matched to the feeder cable.
  - an a.f. choke is placed in series with the key.
  - the oscillator circuit is adequately screened.

PAPER 2.

- The international Q-code to ask "Who is calling me?" is:
  - QSP.
  - QRM.
  - QSL.
  - QRZ.
- The signal report for an extremely strong CW signal modulated with a slight trace of whistle, but which is readable with practically no difficulty may be given as:
  - 496.
  - 946.
  - 446.
  - 469.
- If a transmitter's output power is increased from 10dBW to 20dBW the new output power will be:
  - 10 Watts.
  - 20 Watts.
  - 50 Watts.
  - 100 Watts.
- A particular radio frequency amplifier is quoted as having a power gain of 20dB. If the maximum output power is to be 200W, the maximum power which can be fed into the device is:
  - 100W.
  - 2W.
  - 10W.
  - 20W.

- It is inadvisable to attempt to design a transmitter for amateur use which broadcasts high quality speech (up to eg. 15kHz) because:
  - the components to construct such a device would be expensive.
  - the design is liable to cause TVI.
  - the bandwidth of the signal would mean that only frequency modulation could be used and this would cause excessive distortion.
  - the bandwidth of the signal would be excessive and cause interference to other band users.

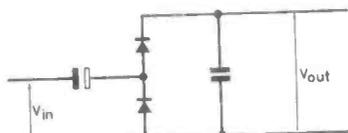


FIG. 5.

- The function of Fig. 5 is:
  - a frequency discriminator.
  - a voltage multiplier.
  - a product detector.
  - a voltage regulator.
- Vertical antennae offer the advantage of:
  - low angle, omnidirectional radiation.
  - low angle, directional radiation.
  - the antenna need not be matched to the transmitter.
  - reduced co-channel interference.
- The natural impedance of a folded dipole halfwave antenna at the centre point is approximately:
  - 75 ohm
  - 300 ohm
  - 70 ohm
  - 50 ohm

- In Fig. 2 the voltage across the capacitor will be about:
  - 3.5V
  - 5V
  - 7V
  - 14V

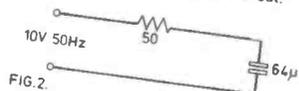


FIG. 2.

- In the design of a transistorised class B amplifier, as shown in Fig. 3, the cause of the distortion shown in the output diagram is:
  - I<sub>c</sub> being too high.
  - insufficient supply decoupling by the capacitor C.
  - incorrect bias of Tr<sub>2</sub>/Tr<sub>3</sub>.
  - omitting an emitter resistor for Tr<sub>3</sub>.

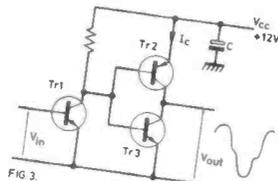


FIG. 3.

- Fig. 4 shows the main parts of a typical superheterodyne receiver. The main purpose of the box marked 'Y' is:
  - phase locked loop (PLL).
  - beat frequency oscillator (BFO).
  - automatic gain control (AGC).
  - voltage controlled oscillator (VCO).

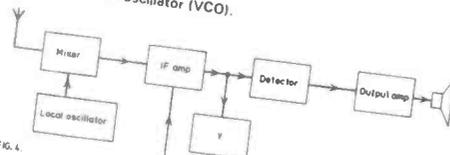
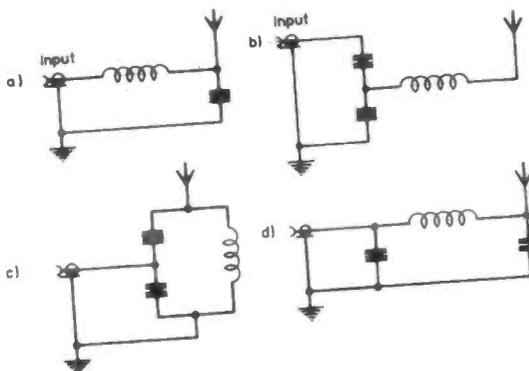


FIG. 4.

- In the design of a transmitter, the frequency determining oscillator is usually followed by a class A amplifier stage. The main reason for this is:
  - to reduce the loading on the oscillator by subsequent stages.
  - to ensure that the output is rich in harmonics for the multiplier stages.
  - to ensure that the output is a pure sine-wave.
  - to reduce drift due to temperature effects.

- Which of the following tuning networks would not match a halfwave antenna?



- Very long distance communication on the HF bands (eg. England to Australia) is achieved by:
  - E layer reflection.
  - ground wave propagation.
  - F2 layer reflection.
  - multiple F2 layer reflections.
- A standing-wave ratio meter is used to:
  - see if an aerial is radiating properly.
  - check the radiation efficiency of an aerial.
  - check the matching of a transmission line on a transmitter.
  - count standing waves in a transmitter.