in D1 which in turn change the frequency of the oscillator. The oscillator is said to be *modulated* and this results in a change of frequency it is *frequency* modulated.

The oscillator consists of Q1, C4, R8, L1 and C5. Oscillation begins with a slight flow of current from the ground up through the bottom of L1. That current flows out the coil's tap, through Q1 via its *source* and *drain* leads and R9 to the regulated +10 volts produced by D2. This current induces a voltage across L1 which is seen, through C4, by the *gate* of Q1. Amplification by Q1 of this minute voltage increases the current through L1. This continues until a current limit is reached at which time the process reverses itself. Current decreases through the coil producing a revers voltage at the gate of Q1 which further decreases the current.

L1 and C5 form a *tank circuit*. This is an electrical circuit which behaves much like a mechanical device such as a guitar string. Pluck the guitar string and it vibrates at a fixed frequency. Put a pulse of current into a tank circuit and it electrically vibrates at a fixed frequency. If you change the length of the guitar string you also change its frequency. If you change the inductance of capacitance of a tank circuit you change its frequency. The frequency of this oscillator and the pulses it produces are therefor determined by the inductance of L1 and the capacity of C5.

The capacity of D1 is in series with C3 and that combination is parallel with C5. C5 is the main tuning component. The change in DC voltage to D1 form R4 is used for *fine tuning*. The audio signal applied to D1 probides the changing voltage required for *modulation*.

The radio frequency signal present at the source of Q1 is fed through C8 to the base of Q2. The operating bias for Q2 are established by R10 and R11. The amplified signal appears at the collector and across L2. C9 and L2 form another *tank circuit* which is tuned to the same frequency as the oscillator. A low impedance point is tapped-off from L2 and the signal is fed through a series-tuned circuit of C10 and L3. This signal arrives at the base of Q3 the power output transistor.

Q3 is operated without forward bias (class-c). Its base resistor, R13, is simply connected to ground. This *zero bias*, as used in power output stages, allows the transistor to pass high-current pulses with a *resting state* between pulses. These current pulses develop a corresponding voltage across L4. L5, C11, and C12 form another tank circuit. Almost all of the power output produced by Q3 id developed in this final tank circuit. The proper adjustment of C11 and C12 couple this power to the antenna.