AIR-MODEL MANUAL

glossary of R/C terms & symbols

BANDS MOST USED FOR R/C

26.960-27.230 mc. (Novices & Hams)
27.255 mc. ± .04% (anyone with proper station license and crystal-controlled trans.)*
50-54 mc. (licensed Hams only)
465 mc. (anyone with proper station license and *F.C.C. Approved* transmitter).*

* no test of any sort required

STANDARD DESIGNATIONS of our parts of the FREQUENCY SPECTRUM

3-30 mc.—high frequency (HF)
30-300 mc.—very-high frequency (VHF)
300-3,000 mc.—ultra-high frequency (UHF)
Frequency and wavelength both often used; megacycle—mc.—is 1,000 kilocycles (kc.).

OTHER COMMON TERMS

Ohm—unit of resistance (for resistors)	Ω
Megohm—1 million ohms	Meg
Volt—unit of potential	V (or E, in formulas only)
Ampere—unit of current	A (or I, in formulas only
Milliampere—one thousandth of ampere	ma
Radio frequency choke	RFC
Watt—unit of power	W
Microfarad—unit of capacity (for condensers)	mf (called "mike" for short)
Micro-microfarad—one millionth of a microfarad	mmf (called "micro-mike")
Thousand—as used in designating resistor	K
Inductances (coils, transformers, chokes) are indicated on diagrams by	L

In formulas, R represents resistance (ohms or megohms) and C represents capacity.

SIMPLE FORMULAS

Changing frequency to wavelength:
$$\lambda \text{ (wavelength in meters)} = \frac{300}{f \text{ (freq. in mc.)}}$$

Ohms law: Volts=Current (in amperes) times Resistance (in ohms)—or E=IR. Also may be written
$$R = \frac{E}{I} \text{ and } I = \frac{E}{R}$$

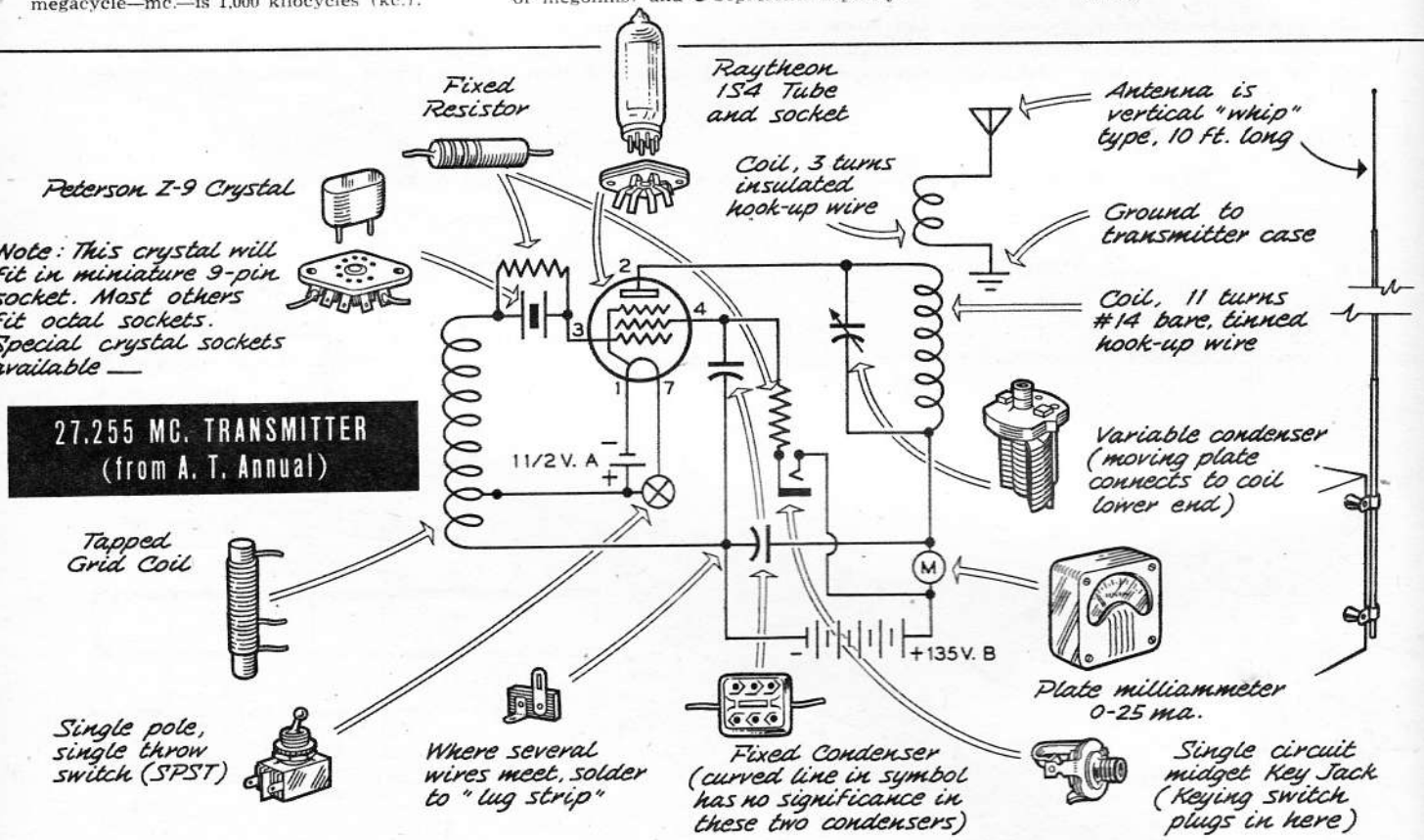
Watts: W=EI. (Always use volts, amperes, ohms in these 4 formulas.)

Resistors, connected in:

Series	Parallel
$R = R_1 + R_2$	$R = \frac{R_1 \times R_2}{R_1 + R_2}$

Condensers, connected in:

Series	Parallel
$C = \frac{C_1 \times C_2}{C_1 + C_2}$	$C = C_1 + C_2$



Radio control is becoming more popular every day, but many "recruits" are puzzled by the odd terms used, the circuit diagrams and symbols. We show here a collection of such data, facts and terms the uninitiated will encounter. Also included are wiring diagrams of typical transmitter and receiver, showing both the item used and the circuit symbol for it.

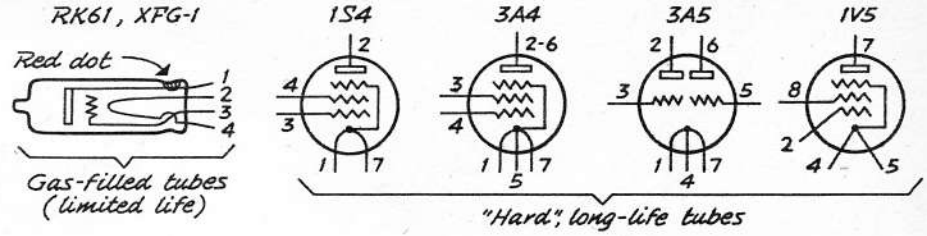
Many resistors and condensers are color-coded instead of having the actual value printed on them. The resistor code is quite simple and will be found in only two forms, of which the most widely used is shown. Condenser codes are trickier and it's wise to try to get these components with the value printed on them. We give the most common codes here; note that the same colors designate the same figures in both condensers and resistors.

The most common resistors are 20% tolerance, that is, the resistor you purchase may be as much as 20% different in value than you ask for. In most of our circuits this makes little difference. Resistors also come with a silver band (10% tolerance) and a gold band (5% tolerance) at somewhat higher cost. Most modern

The "Manual" brings you helpful information on all phases of aeromodeling and is dedicated to the beginning enthusiast. Tell us what subjects you'd like covered

MOST WIDELY USED R/C TUBES

Always read tube and socket leads clockwise looking at bottom —



STANDARD COLOR CODE FOR RESISTORS AND CONDENSERS

COLOR	FIGURE	MULTIPLIER
Black	0	1
Brown	1	10
Red	2	100
Orange	3	1000
Yellow	4	10000
Green	5	100000
Blue	6	1000000
Violet	7	10000000
Gray	8	100000000
White	9	1000000000

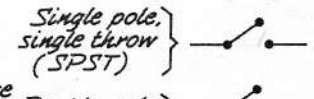
Examples:

- Brown, green, red rings or dots on cond., 1500 ohms
- Yellow, violet, orange - 47000
- Orange, orange, green - 3.3 megs.

- Most common resistor markings: 1st. fig., 2nd. fig. Read left to right in ohms. Multiplier. Silver or gold for tolerance (most resistors don't have this)
- Simplest mica condenser markings: 1st. fig., 2nd. fig. Read left to right in mmf. Multiplier
- Ceramic condenser markings: 1st. fig., 2nd. fig. Read left to right (wide band at left) in mmf. Multiplier

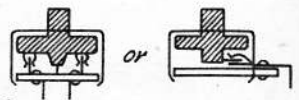
Extreme left & right bands show temperature coef. & tolerance — (of little interest to R/Cers) Bands, dots found on ceramics

SWITCHES



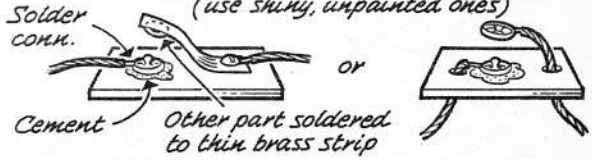
Dotted line denotes both parts move together, no electrical conn.

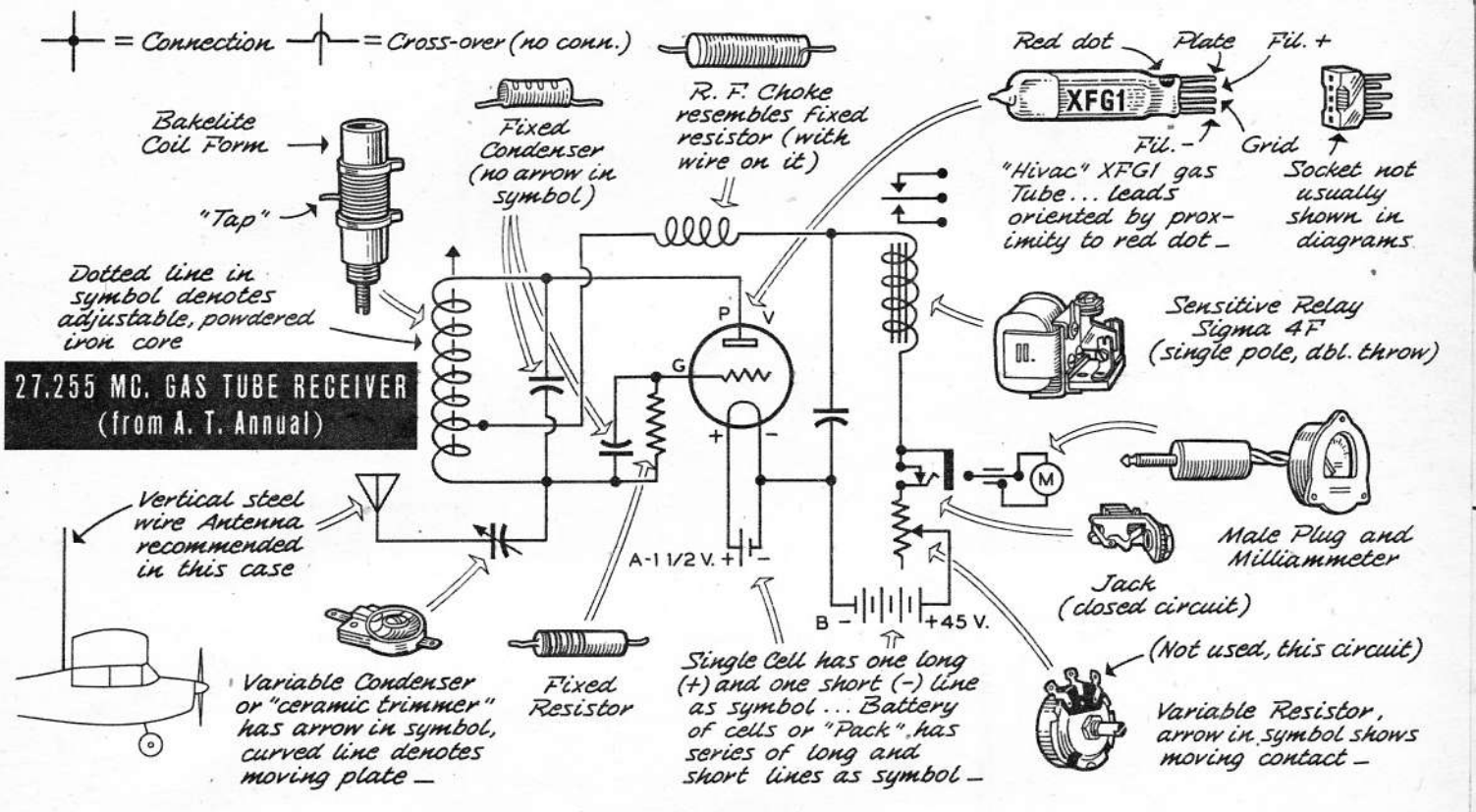
Preferred types of slide switches — as seen from end:



(Types with any sort of ball contact usually unreliable)

Simple switches from dress snaps: (use shiny, unpainted ones)





resistors have rather odd values—33,000, 470,000, 2.2 megs, etc. If you want to duplicate a circuit that has more even values, just pick the nearest ones from the standard RMA values that most radio stores now carry—you will probably be close enough.

Of thousands of tubes on the market, R/Cers use only two or three; these are shown pictorially. Get into the habit of numbering the leads of tubes when you draw diagrams—then you won't have to look them up every time you refer to the circuit.

Try to put down brief notes of results you get with various circuits; record plate current, plate voltage, current change you got with receivers, potentiometer settings, placement of antenna coupling coil in the transmitter. Note down the approximate range you can get with a new receiver or transmitter. Keep track of the number of turns you can put in the escapement rubber, the area and range of movement of the rudder. You'll find these records invaluable as you progress through R/C work.

Radio amateurs' handbooks, sold by most large radio stores and mail order houses, will furnish additional info.