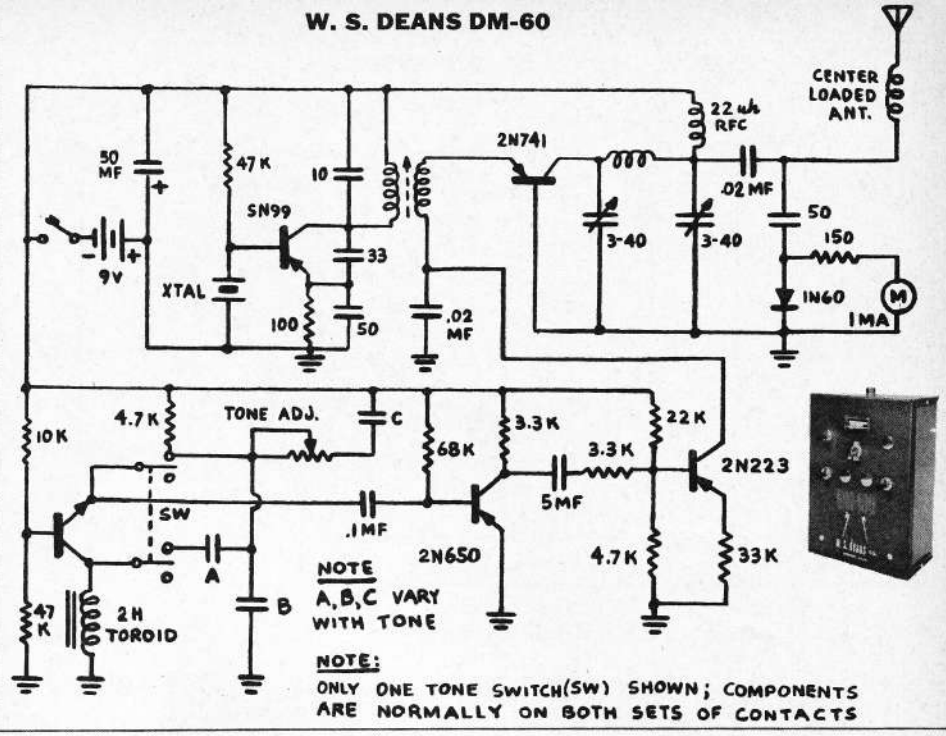
Miniaturized Transistor Transmitters

Seven more small size, low drain transistorized xmtrs to continue our study of those powerful little jobs that have revolutionized radio control equipment. See previous issue for earlier collection.

PART TWO

W. S. DEANS DM-60



Here's another batch of all-transistor transmitters to help round out coverage started last issue. More are coming out all the time; these were on market in early winter. As before, we will provide most specs in table form and a paragraph or so on each unit to cover special features. In alphabetical order we have:

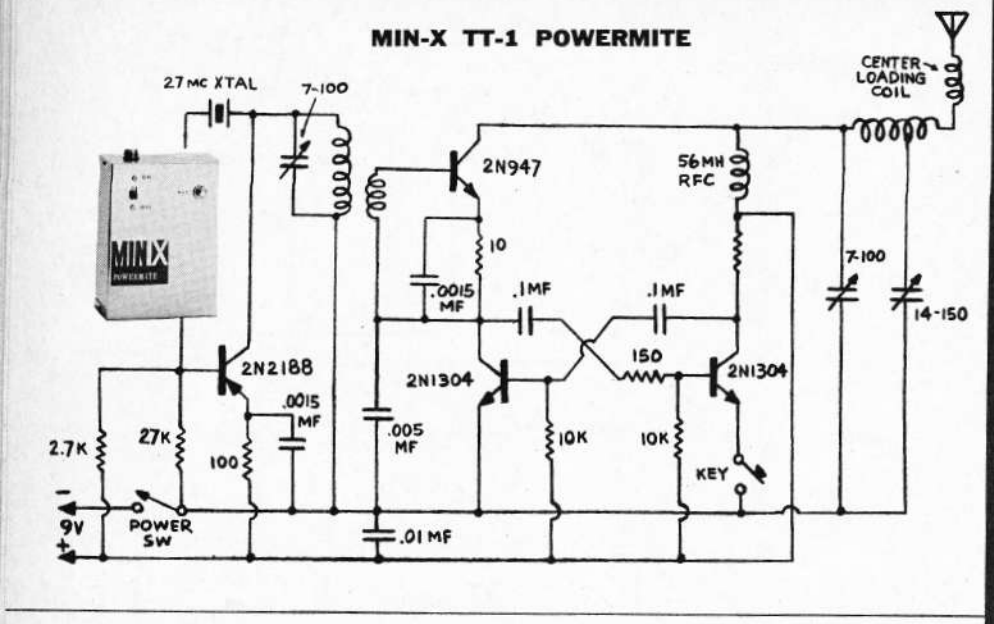
C & S Hawk, Model CS-512. First multi transmitter marketed by this maker, the 6 channel Hawk is in a green-anodized case with yellow lettering. Intended for use with C & S Oriole and Wren receivers which employ the new high-frequency reed banks. First units are on the 27-mc spots only, but all C & S transmitters are to be available on 50-mc as well. Toroid inductor and mylar capacitors employed for top stability of AF tones. Sine wave AF output reduces possibility of interaction between adjacent reeds. Rudder lever is at right side; elevator lever at lower left, motor at upper left. Instruction folder packed with each transmitter includes all info a user would normally need. Separate 4 page service manual available direct from factory for $2 includes schematic, info on crystal matching, tuning procedures, audio padding. RF and modulator circuits of Hawk are almost identical with those in the C & S Falcon II which it preceeded, except latter has multivibrator AF tone generator. Both utilize a silicon transistor in RF amplifier stage for maximum output and efficiency.

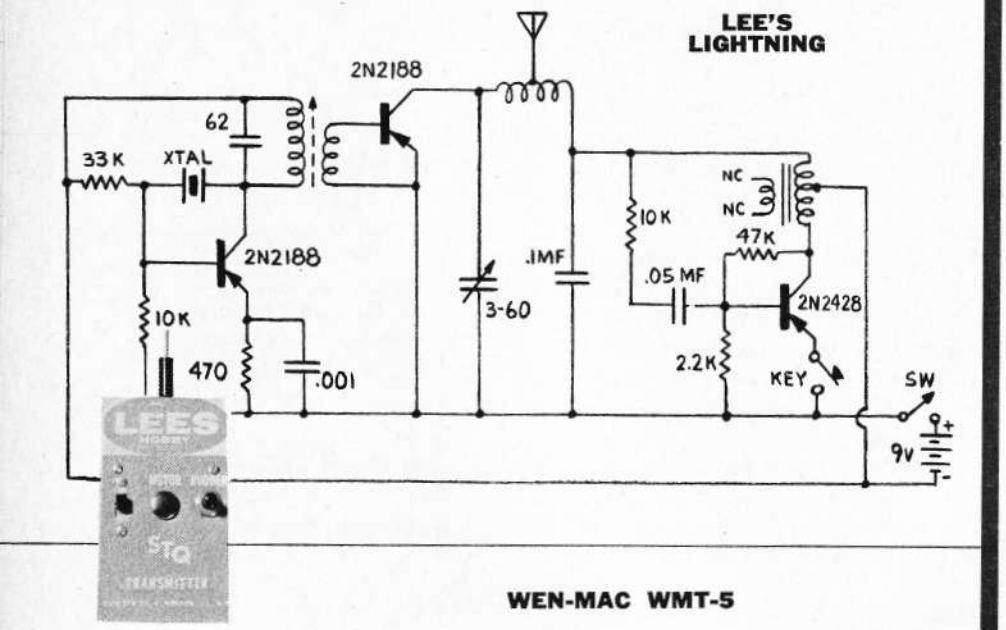
Citizen-Ship Model SPX. First C-S all-transistor transmitter was the little TTX, still a popular member of the line, and the second all-

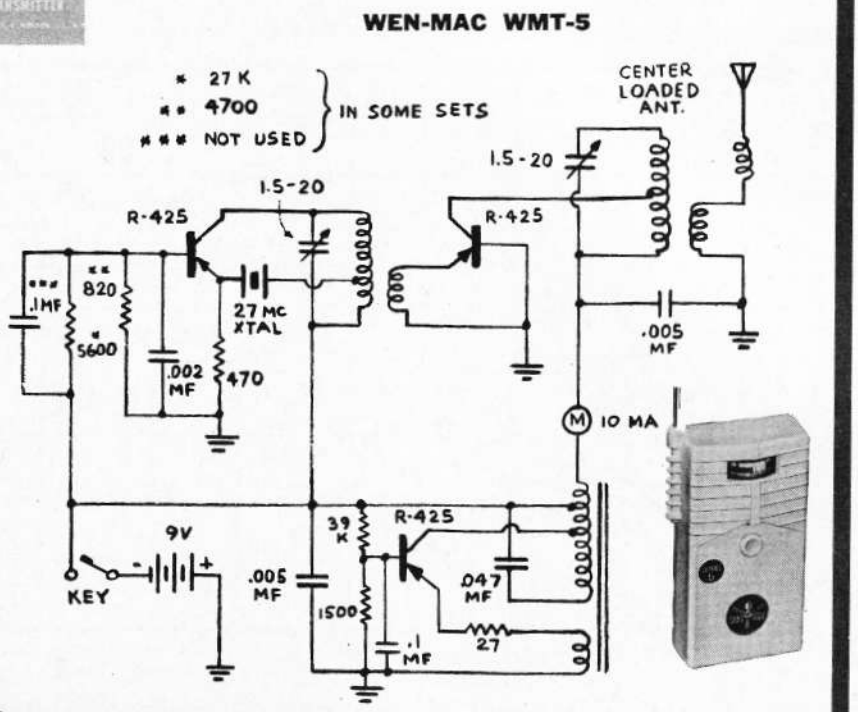
TRANSMITTER SPECIFICATIONS

Transmitter Make, Type	Case Depth, Width & Height (inches)	Weight with batts & ant.	Current Drain CW only	Current Drain CW and tone	Approx. P.A. input, or RF output (mw)	Batt. type (Eveready)	Batt. volts	Ant. type No. of sections	Ant. Up & Down (in.)	AF Tone or Tone range (cycles)
C & S Hawk	2⅞ x 5 x 7	2½ lb.	70	70	250 out	276	9	Center loaded 5	U-55 D-15¼	350-600
Citizen-Ship SPX	2¾ x 3-9/16 x 6⅜	1 lb. 14 oz.	45	60	250 in	276	9	Bottom loaded 5	U-43½ D-17*	675
W. S. Deans DM-60	3 x 5⅞ x 8⅝	3 lb.	50	45	200 in	276	9	Center loaded —	U-56 D-15	350-670
Lee's Lightning	2¼ x 3 x 5	8 oz.	13	18.5	95 in	E146	9	Top loaded —	U-11 —	650
Min-X TT-1 Powermite	2-9/16 x 4-7/16 x 6-1/16	1 lb. 12 oz.	60	40	450 in	276	9	Center loaded 6	U-24 D-12	700
Polk's Pixie	1¼ x 2½ x 3⅝	8 oz.	23	38	95 in	216	9	Center loaded 6	U-37 D-13	700
Wen-Mac WMT-5	2 x 3⅝ x 6⅝	1 lb.	**	25	60 in	246	9	Center loaded 2	U-45 D-22	1000

* Upper 9½" is removable to reduce down length to 7¾"—or remove entire antenna
** Key turns on both CW and tone







Transistor transmitter to reach the R/C market, over two years ago. Our description here covers the more recent and much higher powered SPX. The AF circuits of the two are quite similar, but there the similarity ceases. SPX utilizes a 3-transistor RF setup, ending with a silicon RF amplifier. "Carrier" switch alters mode of operation; when down, you get pulses of both tone and CW when key switch is triggered (no constant CW output) which is useful in areas with little CB interference, for saving battery and for close-up use with a receiver that swamps. When up, you have continuous CW output, key controls tone only. Antenna loading coil is about 7″ above top of case, not in antenna center.

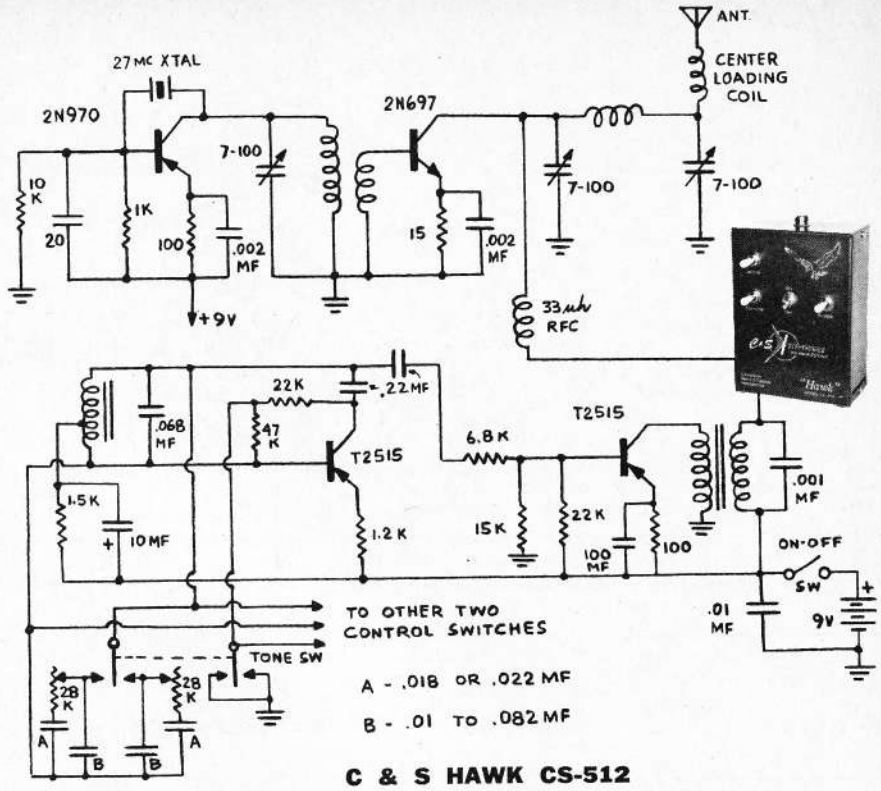
W. S. Deans Model DM-60. Six channel non-simul transmitter is called the DM-60 which may be converted at factory to 10 channel (or to 12) simul operation. You can also have 6 channel simul if desired. Unused holes where lever switches go are plugged in units with lower number of channels. This is, therefore, a highly "convertible" outfit. Panel meter monitors actual RF output, also useful for tune-up and for rough battery check. AF tones are in the presently popular higher range, to match those in Deans receivers—also usable with other receivers that utilize the thicker "high frequency" reeds.

Lee's Lightning. A compact outfit with three-transistor RF circuit, and collector modulation. Interesting accessory is a quick-blip timer which can be built in (at moderate extra cost) and which will send out properly-timed pulse for engine control, regardless of how you push the blip button. For most economical battery life, the makers recommend a mercury unit such as Eveready E146; the lower cost zinc-carbon Eveready type 216 will work, of course, but will have considerably shorter life. Antenna is very short and top loaded; it is a one-piece affair which may be removed from case if desired. No license is required for this transmitter.

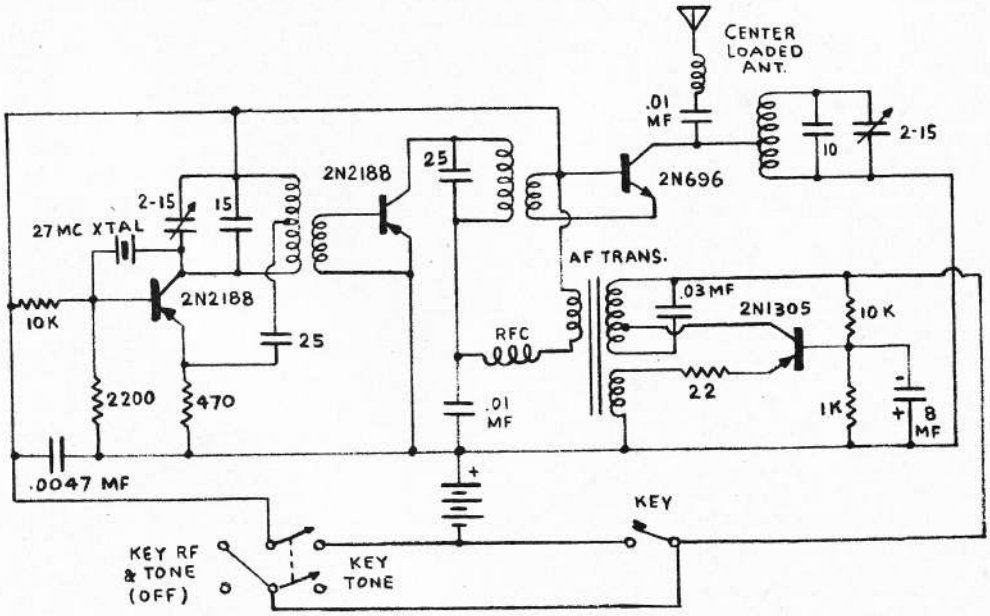
Min-X Model TT-1 Powermite. Relatively simple circuitry but high power output are featured in this unit. Latest antenna for the TT-1

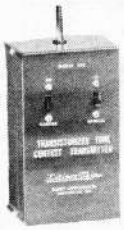
is a rather short one, very handy in use. Earlier Min-X transistor transmitters were supplied with a much longer center-loaded antenna. The two antenna lengths are not interchangeable, without minor changes in the output circuits. Modulation is 100% square wave. Shop testing or short range operation may be accomplished with the antenna collapsed or completely removed, without circuit damage. Oscillator tuning capacitor is sealed at factory, but user may touch up output tuning circuits if necessary for peak output. Operating life with recommended battery is 50 to 70 hours. Silicon output transistor.

Polk's Pixie. Two RF and two AF transistors comprise the circuitry of this tiny transmitter. 6-section center-loaded antenna disassembles into three parts, with loading coil a separate unit. Antenna should always be in (*Continued on page 68*)

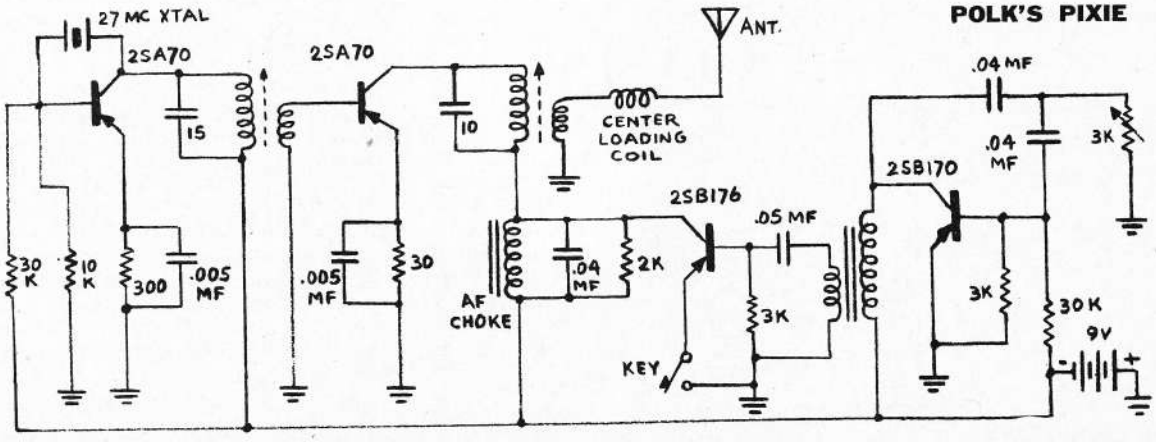


C & S HAWK CS-512

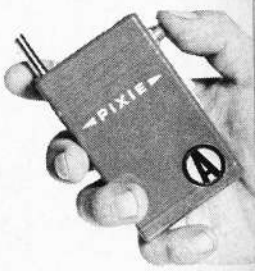




CITIZEN-SHIP SPX



POLK'S PIXIE



Transmitters

(Continued from page 39)

place when unit is turned on, or component damage may result. Case is of molded blue plastic. Loading coil is completely encased in plastic. This is an imported (Japan) transmitter.

Wen-Mac Model WMT-5. This pioneer unit was fully described in Nov. '61 A.M. Briefly it is a plastic-encased unit with no on-off switch—pressing panel button sends both tone and CW. Circuitry may be modified to send continuous CW, with keyed tone, but would need addition of power switch. Edge-mounted meter reads collector current of RF amplifier, acts as tuning meter, and also shows when batteries are dropping. Due to power input to P.A. of less than 100 mw, no license is required. Modulation percentage is 100%, but tone is a little high for many receivers (ideal for the matching Wen-Mac Model WMR-5 super-het receiver, of course).