IMAGINATIVE
DESIGN CONCEPT

in the new Mosley CM-1

First low priced receiver to provide selectivity, sensitivity and stability that equals receivers selling for several times the price

Now, Mosley Electronics, Inc., the leading manufacturer of quality amateur radio antennas, offers you a new communications receiver with tried and proved components in a truly imaginative design concept. This unique new design gives you outstanding performance formerly available only in much higher priced receivers.

FIRST LOW PRICED RECEIVER WITH CRYSTAL CONTROLLED FIRST OSCILLATOR:

The new Mosley CM-1 communications receiver is the result of two years of continuous engineering development. Whether you prefer to work SSB, AM or CW, this compact, new double conversion receiver with crystal controlled first oscillator will give you performance in selectivity, stability, and freedom from images formerly available only in much higher priced receivers.

The truly imaginative design of the CM-1 employs a recently developed dual-purpose tube which makes it possible to use only five identical tubes plus four semi-conductor diodes to perform all functions usually requiring more complicated and expensive 12 tube sections.

EXCELLENT SIGNAL TO NOISE RATIO:

SIGNAL TO NOISE RATIO is the best index of a receiver's ability to receive weak signals. Most receivers perform satisfactorily on 80 or 40 meters but show a loss in sensitivity on 20, 15 and 10 meters. The CM-1 will give a 10 db. signal to noise output from a ½ microvolt signal in the 10 meter band.

OFFERS HIGHEST STABILITY RATING:

In stability the CM-1 compares favorably with the most expensive sets. This high stability is primarily due to the use of a crystal controlled high frequency oscillator on the higher frequency bands. The tunable oscillator operates at a low frequency, near 4 Mc., where greatest stability is most easily attained. The tunable oscillator uses a ceramic coil form and has no bandswitch since bandswitching is done by changing crystals and circuits in the first mixer stage - - an additional reason for excellent oscillator stability and accurate calibration.

USE OF TRIODE IN FIRST MIXER STAGE ASSURES LOWER NOISE LEVEL:

One of the most noticeable aspects of the block diagram is the absence of an RF amplifier stage on any band. The pentode RF amplifier stage normally found on the better amateur receivers serves three functions: amplification, image rejection and signal to noise ratio improvement. In the CM-1 all of these requirements are met through the use of a multiple tuned triode mixer with better over-all performance.

Amplification may be provided at any point between the antenna and the detector with equivalent results. Since there are already two high gain mixers and two IF amplifiers in the receiver, no further amplification is necessary. Image rejection is a function of the selectivity of the tuned circuits. The CM-1 has, in all cases, at least two tuned circuits between the antenna and the input grid, and is therefore getting the same image rejection as would be produced by the conventional tuned RF amplifier.

Signal to noise ratio is directly related to the equivalent noise resistance of the first tube in the receiver. It is more difficult to reduce tube noise problems on high frequencies than at 80 meters, where almost any tube gives acceptable performance. On 10 meters, the noisiness of a tube must be carefully considered.

By calculation, it can be shown that a triode mixer, such as the first mixer in the CM-1, has lower noise level than a pentode RF amplifier. This advantage has been verified by exhaustive tests of many mixer circuits.

Throughout the receiver a consistent design technique has been followed which places the selectivity producing filters as close as possible to the antenna before the high amplification occurs. Thus, the first mixer input circuit has two tuned circuits, the second mixer input has two tuned circuits, and the second IF (455 kc.) input circuit has four tuned circuits. More conventional design practice is to distribute the selectivity uniformly between amplifier stages. Concentrating the selectivity close to the antenna allows the CM-1 to give best performance under the most severe test any communications receiver may encounter, that is, reception of a weak signal with a much stronger signal only a a few kilocycles away.

The receiver is equipped with an automatic noise limiter which is very effective against impulse noises. Standby terminals on the rear of the receiver are in parallel with the switch contacts so that a separate relay may be used to control the receiver. In addition, a separate set of contacts on the standby switch are brought out to the relay terminals on the rear of the set so that if desired the standby switch may be used to control the antenna or transmitter relay. An accessory power socket, also on the rear of the chassis, may be used to furnish power for a crystal frequency standard or other accessory requiring not more than 6.3 volts at .3 amp. and 125 volts at 5 Ma.

Your Mosley dealer will be glad to demonstrate this advanced new receiver. Ask him today.

BLOCK DIAGRAM

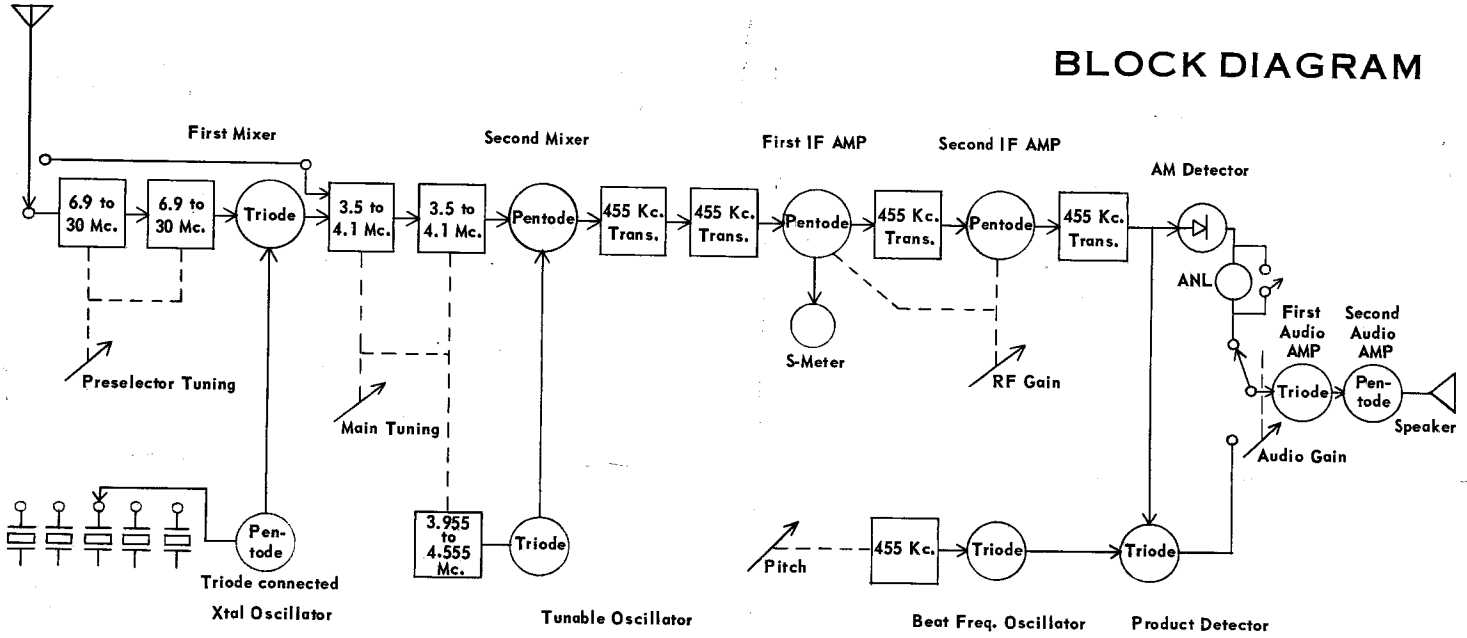

Image and IF Rejection of the Receiver

Band	Image Rejection	First IF Rejection
10 meters	35 db.	52 db.
15 meters	52 db.	47 db.
20 meters	68 db.	44 db.
40 meters	64 db.	37 db.
80 meters	67 db.	–

MOSLEY

CM-1 Receiver

Amateur Net, $169.95

CMS-1 Matching Speaker

Amateur Net, $16.95

(Slightly higher west of the Rockies and outside the U.S.A.)

FEATURES and PERFORMANCE DATA

- Double conversion with crystal controlled first oscillator, 5 crystals included.
- Diode detector for AM and product detector for SSB and CW.
- Covers complete range of all amateur bands – 80 meters through 10 meters. Ten meter band segmented in three overlapping increments of 650 kc. each. Each band and each segment covers full 12" dial scale.
- Calibration every 5 kc. WWV reception at 15 Mc.
- The series shunt automatic noise limiter employs two IN54A diodes.
- S-meter functions on AM, CW or SSB, with or without BFO.
- Five dual-purpose tubes plus four semi-conductor diodes provide functions of twelve tube sections. TUBE and DIODE LINEUP: One 6AW8A, triode mixer and crystal oscillator; one 6AW8A, 2nd mixer and tunable oscillator; one 6AW8A, 1st IF and 1st Audio; one 6AW8A, 2nd IF and product detector; one 6AW8A, 2nd Audio and BFO; one IN34, AM detector; one 2F4, power rectifier; two IN54A's, noise limiter.
- SELECTIVITY: 2.5 kc. at - 6 db.
- SENSITIVITY: ½ microvolt for 10 db. signal-to-noise ratio on ten meters.
- STABILITY: Less than 500 cycles drift after one-minute warm-up. Less than 200 cycles change for 10% line voltage change. Temperature compensated and voltage regulated.
- IMAGE and IF REJECTION: 35 db. minimum.
- AUDIO OUTPUT: ½ watt at 6% distortion.
- CONTROLS: Tuning knob and frequency dial, bandswitch, preselector tuning, RF gain control, AF gain control, beat frequency pitch control, detector switch, automatic noise limiter switch and standby switch.
- REAR CHASSIS ACCESSORY FACILITIES: Transmitter Relay Terminals, Accessory Power Socket, External Speaker / VOX Terminals.
- POWER CONSUMPTION: 33 Watts. (115 volts AC, 50 to 60 cps.)

(Export Model: 230 volts AC, 50 to 60 cps.)

Clean, functional panel layout and compact cabinet of receiver and speaker will compliment the finest Amateur Station. Baked on dukane gray and black enamel over heavy gauge steel. Receiver: 10½" x 7½" x 8" deep. Speaker: 7½" x 7½" x 8" deep. Receiver shipping weight, 14 lbs., speaker shipping weight, 4 lbs.

Mosley *Electronics, Inc.* – 4610 North Lindbergh Boulevard – Bridgeton, Missouri

WEST COAST BRANCH
1406-08 South Grand Avenue
Los Angeles 15, California

INTERNATIONAL DIVISION
15 Moore Street
New York 4, New York

MOSLEY ELECTRONICS, LTD.
15 Reepham Road.
Norwich, Norfolk, England

DISTRIBUTED BY:

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FORM NO. CM-1/F

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