

amplifiers are operating at full input during tune, the time should always be kept short. If longer time is required, switch to standby for a minute, and then back to TUNE for 30 seconds. With experience in tuning procedures, it will be found that 30 seconds is more than enough time.

5—After tuning all controls for maximum output indication as described, other meter readings may be observed. IG (grid current) should indicate .2 to .5 amperes in TUNE position, depending on the amount of driving power. Swan transceivers will generally supply more driving power than others presently on the market. However, most transceivers will provide enough to drive the Mark I to full legal power. IP (plate current) should indicate between .6 and .8 amperes (see paragraph 9). The exact values of grid and plate current are not critical providing they do not exceed .6 grid amperes, and .8 plate amperes, and this only during short duration tuning periods.

6—To operate with SSB voice modulation, switch the Mark I to "OPERATE" position, and apply excitation with the driver, using the MIC. GAIN control directly as a power control. **IMPORTANT:** Once tuning procedures have been completed, set the meter switch to IP, and using average plate current as an indication of proper power level, set the Mic. Gain control for an average reading of .35 amperes. Only occasional voice peaks should kick to .5 amperes. Peak envelope power input will be at the legal limit of 2000 watts under these tuning conditions. **CAUTION:** Exercise care in setting the Mic. Gain control. Too high a setting will produce higher meter readings, but flat-topping and spurious emissions will result, as well as the possibility of exceeding legal power limits.

WARRANTY POLICY
SWAN ELECTRONICS CORPORATION
WARRANTS THIS EQUIPMENT AGAINST DEFECTS IN MATERIAL OR WORKMANSHIP, EXCEPT FOR TUBES, TRANSISTORS, AND DIODES, UNDER NORMAL SERVICE FOR A PERIOD OF ONE YEAR FROM DATE OF ORIGINAL PURCHASE. THIS WARRANTY IS VALID ONLY IF THE ENCLOSED CARD IS PROPERLY FILLED IN AND MAILED TO THE FACTORY WITHIN TEN DAYS OF DATE OF PURCHASE. DO NOT SHIP TO THE FACTORY WITHOUT PRIOR AUTHORIZATION. THIS WARRANTY IS LIMITED TO REPAIRING OR REPLACING ONLY THE DEFECTIVE PARTS, AND IS NOT VALID IF THE EQUIPMENT HAS BEEN TAMPERED WITH, MISUSED OR DAMAGED.

7—When the Mark I Function Switch is in OPERATE position for SSB voice transmission, plate voltage is increased from the CW-TUNE value. In Standby or Receive condition, the 3-400Z tubes are biased to cut-off, so IP will be zero, and EP will indicate 2900 volts. In TRANSMIT position, without modulation, IP will show an idling current of .18 amperes, and EP will drop to 2850 volts. With voice modulation averaging .35 amperes, EP will drop to about 2500 volts. Occasional voice syllables may drop the plate voltage further, but with proper setting of the Mic. Gain control, dynamic regulation of the internal power supply is more than adequate. Use of computer grade electrolytics assures long capacitor life, and a net capacity of 40 mfd. across the plate supply. (Voltage readings are subject to line voltage variations).

8—To operate without the Mark I Linear Amplifier, simply switch it to "OFF". The antenna circuit is then by-passed around the amplifier by the internal relay and the transceiver-driver will operate "Barefoot".

9—To operate on CW—always keep the Function Switch in the TUNE-CW position in order to limit input power to 1000 watts. **CAUTION:** Because the Mark I uses a grounded grid amplifier circuit, input power measurements must include the driver stage input. Thus, if the driver is running 300 watts input, the linear amplifier input must be limited to 700 watts when in CW mode. Thus, you must first measure driver input, in order to determine how much input you may run to the Mark I. Use the EP meter position to measure plate voltage, and then calculate how much IP (plate current) you can run and stay within the legal limit. Then use the P.A. Load control to hold IP down to this level.

NOTE: It is quite possible to run well in excess of the legal power limit on CW as well as SSB with the Mark I. The design of an amplifier with linear characteristics up to the legal limit results in this capability. The burden of operating within legal limits falls on the operator and Swan Electronics Corporation is not responsible for improper or illegal operation. Every well informed operator should be familiar with measurement procedures, and with mathematical calculations of power level. Whenever possible, an oscilloscope should be used to monitor peak power levels, since ordinary meters are unable to do so.