

## INTRODUCTION

The Gonset model 910A Sidewinder is designed for SSB, AM, and CW transceiver operation on the 6 meter band. In the transceive mode, the Sidewinder features "Offset Tuning" -- the receiver may be tuned one and one-half kilocycles in either direction without disturbing the frequency of the transmitted signal. The exciter/transmitter, with an input of 20 watts PEP, can be either VFO or crystal controlled and is designed as an ideal companion piece to the Gonset 913A RF power amplifier. The Sidewinder employs solid-state circuitry in all but the transmit mixer, driver and final amplifier, and utilizes common oscillators, IF circuits, crystal lattice filter, and balanced modulator to reduce size and increase reliability.

The receiver has a sensitivity of  $1/2$  microvolt for  $10 \text{ dB } \frac{S+N}{N}$ , and image rejection of -50 db. A crystal controlled injection oscillator, double conversion in all modes and a crystal lattice filter ensure a highly selective receiver with excellent stability. Completely solid-state, the receiver is designed with separate detectors for AM service and SSB-CW service with the audio power derived from a class B amplifier delivering 2.5 watts to the speaker.

The transmitter may be either VFO or crystal controlled with sockets provided for four crystals -- one on the front panel for quick crystal changes and the other three inside of the Sidewinder. One of the four crystals may be trimmed closely to "net" or other critical frequencies. The basic carrier oscillator is crystal controlled and, in the SSB mode, feeds a balanced modulator to provide the carrier suppression required for SSB service. Filament power to the transmit tubes may be switched off by a front panel control -- thereby eliminating almost all of the power drain when the Sidewinder is operating in the receive mode. The high frequency oscillator, used in both transmit and receive, is crystal controlled by one of four crystals selected by the front panel Selector control; each crystal allowing coverage of a one-megacycle segment of the 6 meter band.

Two power supplies have been designed for the Sidewinder; the model 911A for operation from a 120 vac source and the model 912A for operation from a 12 vdc source. The 901A and 902A power supplies are electrically compatible, also. Both power supplies -- all solid state -- use silicon rectifiers for reduced heat dissipation and higher efficiency and contain the speakers and the high voltage relay. The model 911A, the ac power supply, has an ac receptacle on the rear which is controlled by the T/R relay to provide 120 vac to an external antenna relay when using an RF power amplifier.

## TABLE OF CONTENTS

|                                                                           |         |
|---------------------------------------------------------------------------|---------|
| INTRODUCTION .....                                                        | 2       |
| CONTROLS AND FUNCTIONS .....                                              | 3       |
| SPECIFICATIONS .....                                                      | 4       |
| MOBILE AND FIXED STATION INSTALLATION .....                               | 5       |
| POWER CONNECTIONS .....                                                   | 6       |
| MOBILE NOISE SUPPRESSION .....                                            | 6       |
| ANTENNAS .....                                                            | 7       |
| RECEIVE OPERATION .....                                                   | 7, 8, 9 |
| TRANSMIT OPERATION .....                                                  | 9, 10   |
| THEORY OF OPERATION, RECEIVE .....                                        | 10      |
| THEORY OF OPERATION, TRANSMIT .....                                       | 10      |
| ALIGNMENT INSTRUCTIONS, Introduction and VFO Tracking .....               | 11      |
| ALIGNMENT INSTRUCTIONS, 9 and 15 MC IF Alignment .....                    | 12      |
| DIAGRAM OF THE MAIN PRINTED CIRCUIT CARD .....                            | 13      |
| ALIGNMENT INSTRUCTIONS, HF Crystal Oscillator Adjustment .....            | 13      |
| ALIGNMENT INSTRUCTIONS, Front End and First Receive Mixer Alignment ..... | 13      |
| ALIGNMENT INSTRUCTIONS, Balanced Modulator Adjustment .....               | 14      |
| ALIGNMENT INSTRUCTIONS, 9 MC Oscillator Adjustment .....                  | 14      |
| ALIGNMENT INSTRUCTIONS, Transmit Driver Interstage Alignment .....        | 14      |
| ALIGNMENT INSTRUCTIONS, Transmit Mixer Grid Alignment .....               | 14      |
| ALIGNMENT INSTRUCTIONS, Transmit Center Frequency Adjust .....            | 14      |
| ALIGNMENT INSTRUCTIONS, "S" Meter Sensitivity and Performance Test .....  | 14      |
| SCHEMATIC, MODEL 910A SIDEWINDER .....                                    | 15, 16  |
| PARTS LIST, MODEL 910A SIDEWINDER .....                                   | 17, 18  |
| SCHEMATIC AND PARTS LIST, MODEL 911A Power Supply .....                   | 19      |
| SCHEMATIC AND PARTS LIST, MODEL 912A Power Supply .....                   | 20      |