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INSTRUCTION MANUAL

COURIER TRAVELLER II



**FOR USE IN CAR, HOME OR BOAT IN THE 27MC CLASS D CITIZENS BAND,
23 CRYSTAL CONTROLLED CHANNELS, ELECTRONIC SWITCHING, "S" METER
AND PUBLIC ADDRESS**

CONGRATULATIONS !

You are now the proud owner of a Courier TRAVELLER II with features never available before. Please read this manual carefully in order to derive the maximum efficiency and pleasure from the TRAVELLER II.

COURIER COMMUNICATIONS, INC.

100 HOFFMAN PLACE, HILLSIDE, N.J. 07205
a subsidiary of WHITTAKER CORPORATION

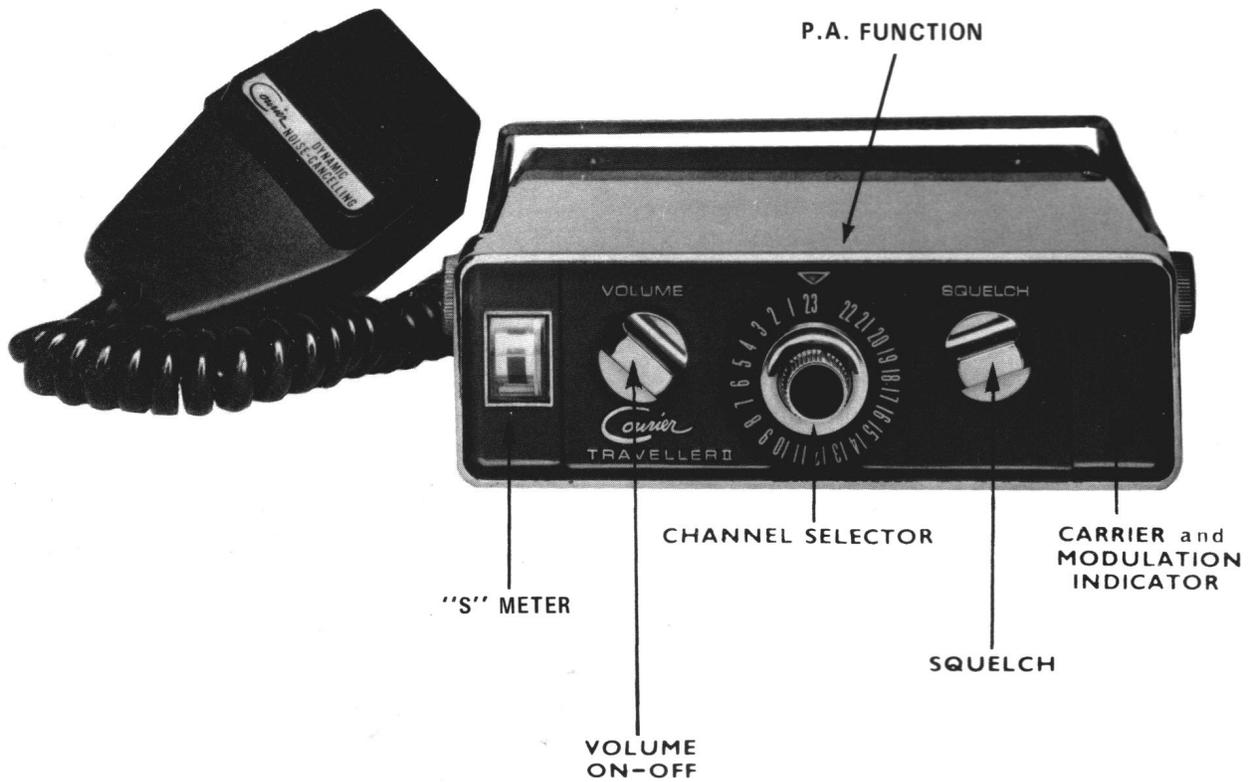
MANUAL No. LI-158 ISSUE A

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Function of Controls

COURIER TRAVELLER II



COURIER COMMUNICATIONS, INC.
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COURIER TRAVELLER WARRANTY

Courier Communications, Inc. warrants the equipment herein described to be free from defective material and workmanship; and agrees to remedy any such defect by repair or replacement, at the Company's option, which in the Company's judgment was a defect in material or workmanship at the time of manufacture, provided that the Owner Warranty Registration card is returned to the Company within 10 days after purchase, and provided that the equipment is returned to the Company or our authorized dealer for examination, with all transportation charges prepaid.

This warranty shall be invalid in the event of (a) unauthorized repair or alteration; (b) misuse, neglect or accident; (c) connection, installation or operation in a manner at variance with the instruction manual; (d) alteration, disfigurement or removal of the serial number; or, (e) resale of the equipment to a new owner.

The period of ninety (90) days from the date of original purchase there will be no charge for warranty repair or replacement. Thereafter, warranty repair or replacement will be made only if the equipment is accompanied by a money order in the amount of \$9.00 for repair or replacement of the equipment plus \$1.00 for return postage, insurance and handling.

All obligations of the Company under the warranty shall cease with regard to the microphone and crystals after the initial 90 days warranty period, and shall cease with regard to the remainder of the equipment after a period of one (1) year from date of purchase.

Courier Communications, Inc. reserves the right to make any change in design, or to make addition to, or improvement in, its products without assuming any obligation to install them in its equipment previously manufactured.

This warranty is in lieu of all other warranties expressed or implied, and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

IMPORTANT

A. THE COURIER TRAVELLER IS A TRANSCEIVER AND THEREFORE CONTAINS A TRANSMITTER WHICH MUST BE REGISTERED WITH THE FEDERAL COMMUNICATIONS COMMISSION PRIOR TO USE.

The registration of your Courier Traveller is not complicated and can be considered to be as routine as obtaining a registration for an automobile. Copies of form #505D can be obtained from the Federal Communications Commission, Washington, D.C. 20554 or from the nearest Field Office listed on page 7.

This Form must be filled out carefully and accurately in complete accordance with the instructions given in the Form. Using the Worksheet and having another person check your information will help prevent unnecessary delays incurred by having the application returned due to errors or omissions. A valid license must be in the licensee's possession before any transmitter can be operated.

If the applicant contemplates operating several transmitters such as a fleet of delivery trucks, or as a family communication system, only one application is required to be submitted. The applicant must then state the total number of transmitters in the system. It is legal and customary to state a higher number of transmitters and thus avoid license modification, changes, etc., at a later date if more transmitters are added to the system. It is legal to be licensed for 20 units and actually operate 10 or so, but it is definitely illegal to operate more units than are called for on the license.

B. ASSIGNMENT OF CALL LETTERS.

The call letters assigned to each station or system are assigned in geographical and numerical order and special numbering requests will not be honored.

It should be understood that the license granted by the Government is a STATION license and the call sign is the registration number of the station, which is analogous to the license plate on a car. It is incorrect to state that an individual is licensed when in reality, it is the equipment. The licensee is the registered owner of the station and is legally responsible for its use and the conduct of persons using the equipment.

FCC REGULATIONS AND REQUIREMENTS

Before placing any transmitter on the air, it is necessary that a valid Citizens Band Station license is obtained in accordance with FCC Rules Part 95. The following sections are reprinted solely as a guide and should not be construed as exact reproductions of pertinent sections of FCC Rules Part 95. The user is advised to review the rules and regulations frequently since changes and revisions occur periodically.

1. It is required that the licensee of each transmitting station attach to each mobile transmitter a properly filled out Identification card or FCC Form 452C.
2. The maximum allowable collector power input to the final transmitting transistor is 5 watts. The circuitry of the Courier Traveller is so arranged that at a rated input voltage of 12.0 VDC, this value is not exceeded.
3. The maximum allowable height measured from the highest point of the antenna to the nearest existing structure shall not exceed 20 feet.
4. The licensee must attest to the fact that he has in his possession, and has read, a copy of FCC Rules and Regulations, Part 95 prior to filling out Form 505D. Copies of this regulation can be obtained from the Federal Communications Commission, Washington, D.C., 20554; or from the nearest Field Office:

Mobile, Ala. 36602
Anchorage, Alaska 99501
Los Angeles, Cal. 90014
San Diego, Cal. 92101
San Francisco, Cal. 94126
San Pedro, Cal. 90731
Denver, Col. 80202
Miami, Fla. 33101
Tampa, Fla. 36606
Atlanta, Ga. 31402
Savannah, Ga. 31502
Honolulu, Hawaii 96808
Chicago, Ill. 60604
New Orleans, La. 70130
Baltimore, Md. 21202

Boston, Mass. 02109
Detroit, Mich. 48226
St. Paul, Minn. 55102
Kansas City, Mo. 64106
Buffalo, N.Y. 14203
New York, N.Y. 10014
Portland, Ore. 97205
Philadelphia, Pa. 19106
San Juan, P.R. 00903
Beaumont, Tex. 77704
Dallas, Tex. 75202
Houston, Tex. 77002
Norfolk, Va. 23510
Seattle, Wash. 98104

COURIER TRAVELLER SPECIFICATIONS

GENERAL

Dimensions - Width	6"
Depth	7"
Height	2"
Weight	3.5 lbs.
DC Power Consumption:	
Receive (standby)	280 ma
Transmit (100% modulation)	1 Ampere
Finish	Chrome and Black
Channels	23-All crystals supplied
Controls	Vol-On/Off; Squelch; Channel Selector
Microphone	Noise cancelling dynamic
Transistors	19
Diodes	12

RECEIVER

Frequency Range (MHz)	26.965 to 27.255
Sensitivity	.5 uv for 6 db at 1KHz at 30% modulation
Selectivity	BW 6 KHz minimum
Adj. Channel Rejection	50 db average
Audio Distortion at 1000 cps	Less than 15% at 2.5w
Spurious Response	Better than 50 db down
Intermodulation Rejection	Better than 50 db down
Crossmodulation Rejection	Better than 40 db down
Readability	.07 uv at 85% modulation
Squelch Sensitivity	.1 uv
Squelch Stop Sensitivity	20 - 2K uv
Noise Limiter	Series gate
Noise Blanker	True Automatic IF Noise Blanking
Audio Output	2.5W minimum

TRANSMITTER

Frequency Range (MHz)	26.965 to 27.255
Power Input at 12.0 V DC	5 W maximum
Power Output	3.0 W minimum
Modulation (10 mv at mic)	100% @ 1000 cps
Emission (Class D Operation)	8A3
Hum and Noise	40 db down from 100% modulation at 1000 cps
Frequency Tolerance	+ .005%
Antenna Match	50 ohms nominal
Switching	Electronic
Modulation Distortion	Less than 15% at 85% modulation at 1000 cps

PACKING LIST

Beside this instruction manual Part # LI-158, the shipping box should contain the following items:

- () Transceiver model Traveller II with microphone and fused line cord attached.
- () Warranty Card Part #LI-33.
- () Mounting Bracket Part #MS49 and 2 Knurled Screws parts HS-246.
- () Plastic Bag 2 x 4" containing:
(5) five screws, #6 x 1/2" hexhead, self-tapping. Part # HS-54.
- () Microphone mounting bracket, #MS-44.

- () Addendum sheet, as required.
- () 1 Schematic phantom, parts list, part # LI-159.

Antennas and accessories used in conjunction with this transceiver are supplied with instructions, packing lists and templates in their own respective cartons.

GENERAL DESCRIPTION

The Courier Traveller has been designed for continuous heavy duty in mobile, marine, portable or base station application. The Traveller can easily be adapted for use in positive ground application and can also be used in 14V aircraft with a total system flying weight of 3 1/2 lbs.

RECEIVER SECTION

The Courier Traveller receiver is designed to receive amplitude modulated signals in the 26.965 to 27.255 MHz (11 meter) citizens band. The unique combination of a mechanical filter, a ceramic filter and LC filter provide at least 50 db attenuation to the adjacent channels and well over 75 db attenuation to the alternate channels.

The RF stage transistor is protected from transient spikes or electrostatic discharge by 2 diodes.

The entire receiver operates from a zener regulated bus to insure maximum stability of volume, squelch, and frequency over wide variation in input voltage.

Your Courier Traveller contains, in addition to a floating series gate automatic noise limiter, an additional automatic noise blanker, which virtually turns off the last IF amplifier during the presence of ignition noise contained in a signal.

TRANSMITTER SECTION

Your Courier Traveller transmitter has been designed for continuous heavy duty transmission of amplitude modulated signals in the 26.965 to 27.255 MHz (11 meter) citizens band.

The Courier Traveller transmitter consists of 2 crystal controlled oscillators incorporating 10 crystals, the outputs of which are synthesized in a class B mixer followed by 2 class C buffer amplifiers and a highly efficient emitter output final. The output of the final is matched to the antenna by the use of a double π network which also serves to reduce TVI. The separate microphone pre-amplifier in conjunction with the noise cancelling ceramic microphone greatly reduces objectionable background noise normally encountered in mobile and marine operations.

CONSTRUCTION

The Courier Traveller is constructed in the form of a drawer that slides into the steel chrome plated case. All parts have been wave soldered to a single epoxy filled laminated printed circuit board. The legend printed on the parts side of the board depicts all parts, values, symbols, and Courier part numbers. Each part is independently accessible.

The universal mounting bracket permits the mounting of the unit from the top or bottom. The large holes in the mounting bracket facilitate installation in positive ground vehicles.

CONNECTIONS

Connections to the Traveller are made via the red fused 12 VDC line and the standard UHF female antenna receptacle. The insertion of a Switchcraft #750 male phone plug into the "EXT" jack permits the use of any 3 or 8 ohm external loudspeaker while silencing the internal speaker.

ALIGNMENT

The use of mechanical and ceramic filters in the construction of the Traveller has reduced the number of adjustments in the unit to 14. THE 14 ADJUSTMENTS HAVE BEEN CAREFULLY AND PRECISELY MADE TO EXACTING COURIER STANDARDS AND CHECKED VERY CAREFULLY BY COURIER'S QUALITY CONTROL DEPARTMENT PRIOR TO SHIPMENT. THE CIRCUITRY HAS BEEN SO ARRANGED THAT IT IS NOT NECESSARY TO MAKE ANY ADJUSTMENTS WHATSOEVER IN THE FIELD. Your Courier Traveller may be connected to any 12 volt source and any 27 MHz antenna without internal adjustments.

EXTERNAL SPEAKER

The jack marked "EXT", is for an external speaker. To use the external speaker facility plug, a 3.2 ohm or 8 ohm speaker line which terminates in a Herman H. Smith, Inc. Miniature Phone Plug, Pt. No. 480 or equivalent, into the external speaker position. When the external speaker is plugged in, it will automatically cut out the internal speaker and all incoming signals will be heard on the external speaker.

PUBLIC ADDRESS SPEAKER

To use the Public Address Facility, prepare a 3.2 or 8 ohm horn or speaker which terminates in a Herman H. Smith, Inc. Miniature Phone Plug, Pt. No. 480 or equivalent. To operate the PA speaker, plug it into the "PA" jack on the rear of the unit.* Turn the unit "ON". Turn the selector switch to the PA position. (Between channels 22 and 23.) When you talk into the microphone, your voice will be reproduced over the Public Address speaker. You can adjust the volume of the external speaker with the volume control on the front of the unit.

* NOTE: Be sure P.A. speaker wires do not touch ground.

INSTALLATION

A. INSTALLING IN A MOTOR VEHICLE OR CRAFT

When installing the Courier Traveller in a vehicle or craft the following items must be mounted:

- The Traveller transceiver
- Universal mounting bracket MS-49
- Antenna assembly and transmission line
- Gutter hook (optional)
- Microphone hang-up bracket
- Ignition suppressors, as required
- Generator filters, as required

Before installation is begun, the location for each part should be carefully selected since a thoroughly well planned installation contributes greatly to the performance of the Traveller. The installation kit contains all necessary parts for a complete installation with the exception of the antenna system and ignition suppression system.

Your Courier Traveller is designed and guaranteed to operate as specified in this manual. DO NOT SUBSTITUTE PARTS IN THE INSTALLATION OF THIS EQUIPMENT OR CONNECT ANY OTHER COMPONENTS OR EQUIPMENT PRODUCED BY OTHER MANUFACTURERS.

The components of the system should be located out of the way, yet convenient for operation and maintenance. Select a location that will keep the cables from being stepped on or catch in hand brake, or other operating controls.

1. MOUNTING THE UNIT IN A VEHICLE

The Courier Traveller has been designed so that it may be placed in operation with the loudspeaker facing up, such as when mounted on the hump on the floor; or facing down, such as when mounted beneath the dashboard. Select a location that will afford the best compromise between safety, ease of operation, appearance and serviceability. Leave enough room for detaching the antenna connection or for inserting an (EXT) speaker plug. The mounting bracket contains holes which sometimes may align with holes already existing in the bottom of the dashboard. While it is possible to secure the unit to the dashboard with two screws, three are recommended. While using the mounting bracket as a template, locate and centerpunch the intended screw hole location. Drill #30 pilot holes and secure the mounting bracket to the desired mounting surface with 3 HS-54 screws. (For positive ground installations, see pertinent paragraph found elsewhere in this manual.)

Be certain that your Traveller is turned off. Connect the end of the red fused line cord to the ACC terminal of the ignition switch. (Connecting the red fused line cord directly to the positive battery terminal would make it possible to forget to turn off the unit before leaving the vehicle, and could result in a run down battery.) Using the ignition switch to turn the unit off and on is highly recommended since the unit is automatically placed in service whenever the vehicle is operated and prevents unauthorized operation when the keys are in the owner's possession.

The Traveller is normally supplied for use with the speaker facing down.

It would be advantageous at this time to fill out form 452C, and attach to the underside of the case.

The Traveller may now be installed in its mounting bracket and secured with the two knurled screws (Part #HS246.)

2. MOUNTING THE UNIT IN A BOAT

When maximum range is desired, it will be found advantageous to secure a ground plate of at least two square feet to the bottom of the craft well below the water line. It is advisable to use brass screws or bolts and the brass bolt that passes through the bulkhead should be adequately caulked. In order to prevent deterioration, due to electrolysis, all screws and bolts should be silver soldered to the plate. It is recommended that a heavy braid be used to connect between the Courier Traveller and the ground bolt. This connection should also be silver soldered.

Even though the Courier Traveller will operate in any position. Locations where salt spray or rain is likely to reach the unit, should be avoided. The HS-54 self-tapping screws supplied are pointed and will thread into wood as well as metal. The mounting procedure is the same as that for a vehicle.

For maximum range a quarter wave marine or mobile antenna is recommended. This type of antenna should be mounted in a location where tin foil or aluminum foil or copper screening may be stapled to the underside of the deck beneath the antenna in order to act as the ground required for ground plane action. This foil or screening should be connected via heavy braid to the chassis of the Traveller along with the heavy braid from the ground plate.

There are many marine antennas available that eliminate the requirement of the ground plate or foil but unfortunately, do not yield as much range.

Most Courier dealers carry a large selection of base, mobile, and marine antennas and are qualified to assist in recommending the best antenna for each particular recommendation.

3. MICROPHONE

The package containing the five #6 self-tapping screws (HS-54) also contains a microphone hanging bracket (MS-44). It is recommended that a location for this hanger be chosen that will permit the microphone cable to be free from obstructing other controls. For convenience, it is desirable to locate the hanger somewhere on the dashboard within easy reach of the operator so that the microphone may be grasped without the operator having to take his eyes off the road. Frequently, the hanging bracket is fastened to an ashtray or some other replacable item which can be renewed prior to trading in the vehicle. When the approximate location has been chosen, use the hanger as a template and centerpunch the centers for two #30 (.120 DIA) holes. Try to avoid locations where the microphone cord is likely to catch on objects. The inner spring should be adjusted (or removed) with long-nose pliers for the desire microphone holding tension.

4. ANTENNA ASSEMBLY

Study the mounting details supplied with the particular type antenna to be installed. Choose a relatively flat area on the vehicle or craft body for installation. The normal location for the antenna in a typical sedan is the left rear corner of the body. In this position, the radiation pattern is somewhat more pronounced in the direction of the front right corner due to the mass of the vehicle. On boats, the 1/4 wave mobile antenna can be installed successfully in the center of the top of the cabin. Aluminum foil or copper plate should then be installed (can be stapled) on the underside base