


SYSTEM RESET
 PUT UNIT INTO "SET"
 PUSH MEM BUTTON
 PUSH LEFT ARROW
 TURN 1 NOTCH  INC/DEC.
 PUSH RIGHT ARROW
 POWER DOWN
 POWER UP & RE-INITIALIZE

GEORGE 413 460 6647

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used, the Receiver should be installed so that the Control Head cable will reach it.

Another consideration in the location of the Receiver Unit is the ability of the user to hear the alarm. If however, it is necessary to mount the Receiver in a place where the user will not hear the alarm, it is highly recommended that an optional auxiliary external alarm be installed.

Electrical Wiring

To wire a typical system, refer to the wiring diagrams (Figures 2, 2A & 2B) located on the following pages.

All wires connecting to the Receiver Unit Terminal Block should be stripped

approximately 3/16 inch (5mm) from the end and tinned with Rosin Core solder. Under no conditions should Acid Core solder be used.

Wiring from the Control Head(s), AP output and external alarm device should be done first, followed by the power leads. The unit should be then turned on to assure it functions and then the power removed and finally, the ground lead should be connected.

Power

12 volts DC should be run from the battery to the receiver through a switch (to remove power from the Loran) and a 2 ampere fuse or circuit breaker. This is very important!

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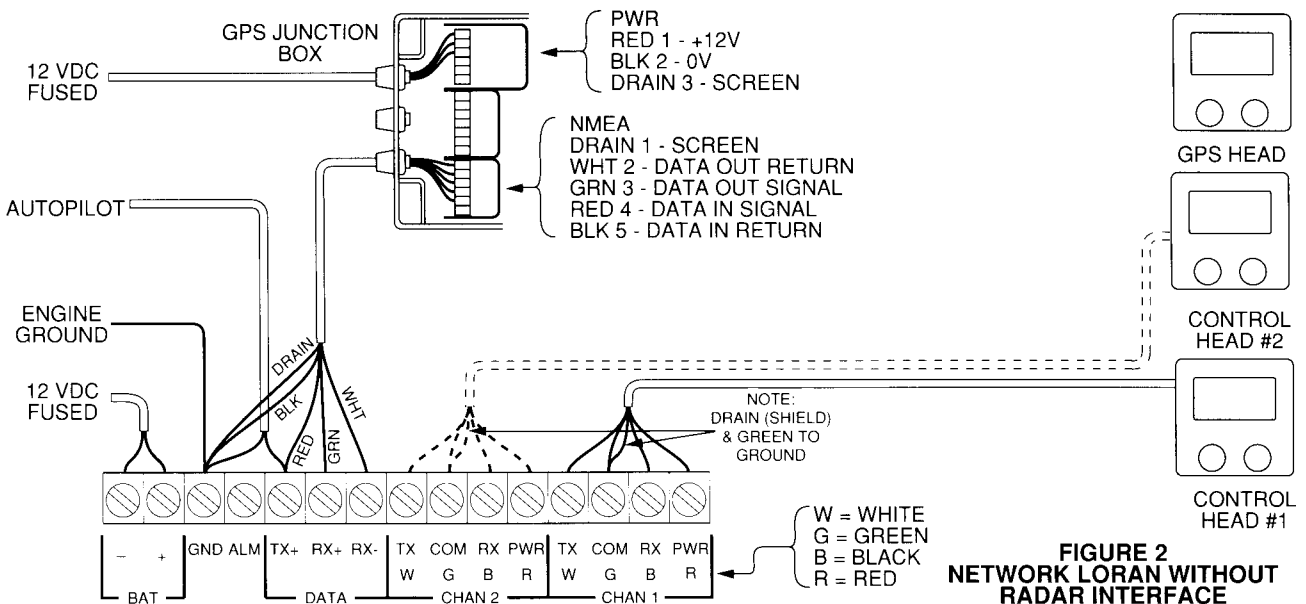


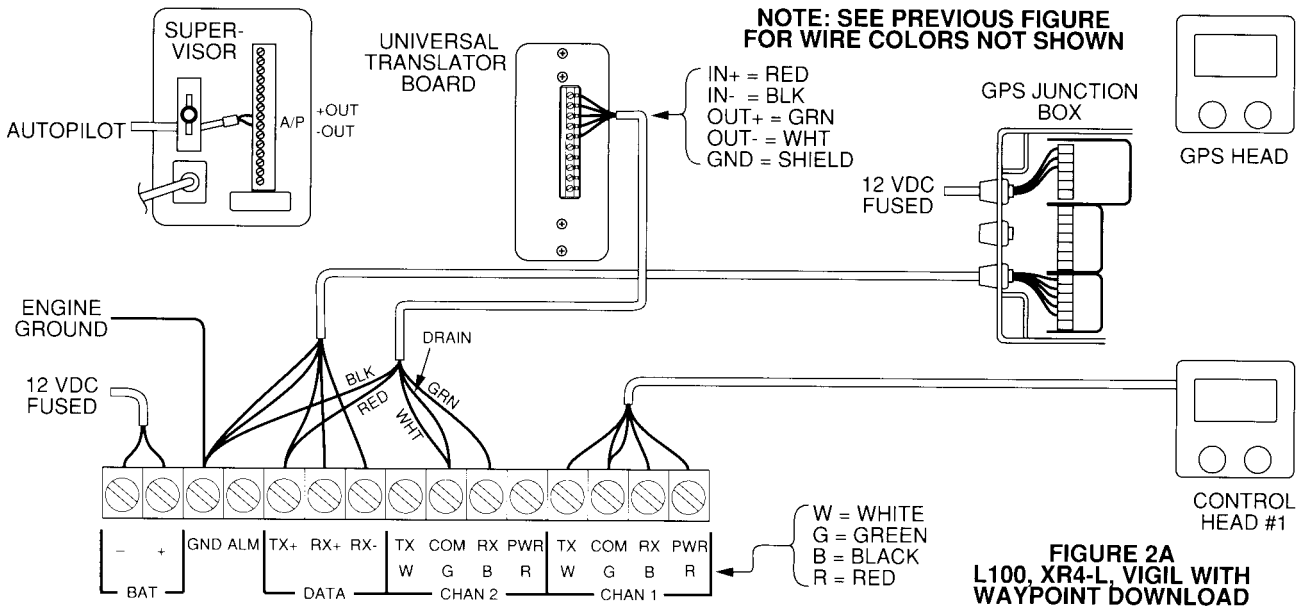
FIGURE 2
NETWORK LORAN WITHOUT
RADAR INTERFACE

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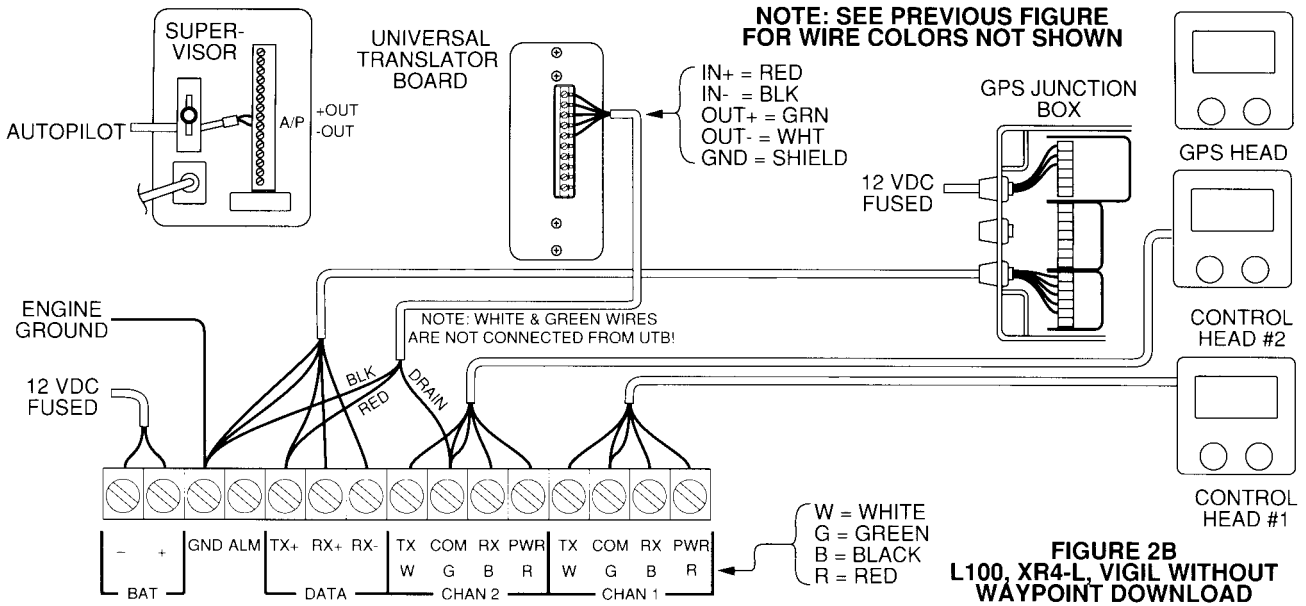
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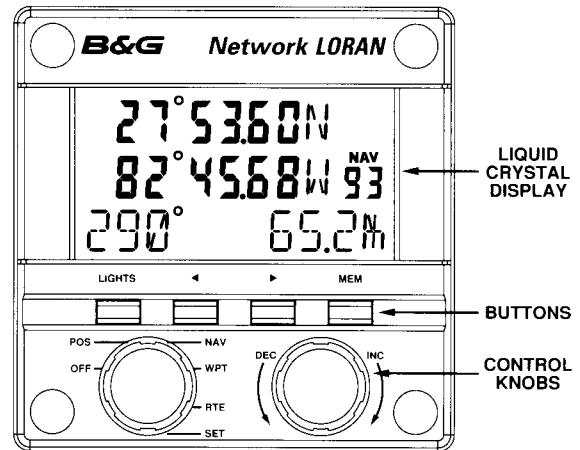
B&G Network LORAN

OPERATION

General Operation

The VIGIL Network Loran is an easy to operate, full function Loran you will master without difficulty. After learning the purpose of each of the Control Head's 4 buttons and 2 knobs you will find the Network Loran operation truly functional and straightforward (See Figure 4).

In the following paragraphs, we will describe the most important basic functions of the Network Loran. Try each of these and be sure that you understand what the unit is telling you. After you have mastered these functions, read the specific sections for full detailed information of all the functions of the Network Loran.



Front View
Figure 4

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Power On (First Time)

After installing the unit as previously described, turn the Function Knob to the SET Position. The first thing you will see is a display of all the Liquid Crystal graphics. This will assure you that the display is fully functional. This display lasts only a few seconds. The Annunciator in the upper right hand corner or the display will indicate "SET".

GRI Selection

In the SET position, you will now see the word POS followed by either "Loran" or "GPS" flashing. This page allows you to select which navigation system will provide the Position Data for the Navigation Computer. Select

Loran (GPS will be covered later) and press the right scroll button (>)

You will now see the word GRI followed by 4 flashing digits. These digits represent the actual Loran chain that you desire to use. Turning the Cursor Knob in either direction will allow you to select the proper chain (GRI) for your operating area. A list of the operating chains and their area coverage is included in the Specifications section. The Network Loran will not allow you to select a chain that does not exist.

To the right of the GRI is the letter "A" or "M". If "A" is selected, the Network Loran will automatically choose the correct GRI based on your present position. If "M" is selected, the Loran will use the GRI you entered

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manually. Press the Right Scroll Button (>) to make it flash, then turn the Cursor Knob until the desired mode (A or M) is indicated.

When you have selected the proper chain and mode, you will then press the Right Scroll Button (>) once. You will now see the first two digits of a Latitude Display flashing. This is asking for your present, known latitude.

Since you are initializing the Loran, it is only necessary to enter your known position within $\pm 1^\circ$ of Latitude or Longitude.

Turn the Cursor Knob in either direction until the correct number of degrees ($\pm 1^\circ$) of your present position is indicated.

Press the Right Scroll Button again. The display is now asking for the correct number of minutes of latitude of your present position. Turn the Cursor Knob until the correct number is indicated and then press the Right Scroll Button again. You may enter zeros here if you so desire.

The flashing display will then ask for the hundredths of minutes of your present position. This can be entered by again turning Cursor Knob to obtain the proper numbers. Note that you may enter zeros here.

By now you must realize that by turning the Cursor Knob you will change whatever is flashing on the Liquid Crystal Display. Pressing the Right Scroll Button will advance

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the display one page at a time, and pressing the Left Scroll Button will go back one page at a time.

Let's Continue!

Pressing the Right Scroll Button will then ask for the Longitude (degrees $\pm 1^\circ$) of your present position. Adjust as necessary using the Cursor Knob. Continue pressing the Right Scroll Button through minutes and hundredths of minutes, adjusting as necessary with the Cursor Knob. Note again that zeros may be entered for the minutes and hundredths of a minute.

The next display will ask you if you want to read any distance information in NM

(Nautical Miles). Turning the Cursor Knob will allow you to read in either Nautical Miles (N) as indicated, or in Statute Miles (S).

The next three presses of the Right Scroll Button will ask you to set the alarm points of the Arrival, OffCourse and Anchor Alarms. By using the Cursor Knob, the Arrival and Off-Course alarms may be set over a range of 0.0 to 9.9 miles. If the Off-Course Alarm is set to 0.0 miles the alarm is disabled. Note that the Arrival Alarm cannot be disabled.

One important fact to note is that the Arrival Alarm is set to go off at a point before actual arrival at the waypoint (unless it is set to 0.0). It is simply a warning that you are close to the actual waypoint.

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The Anchor Watch Alarm may be set by the Cursor Knob over a range of .01 to .99 miles from the point at which you dropped your anchor.

Pressing the Right Scroll Button again will ask for the format of the Output Digital Data and the Cursor Knob will give you a choice of 0180, 0183, VIGIL 1 or VIGIL 2. This function is to tell the Loran that you wish to use an Autopilot, VIGIL Radar with Supervisor, Plotter, Computer, etc. and will be fully explained later on in this manual. For now, either 0180 or 0183 output is acceptable.

Another press of the Right Scroll Button will bring up the Year. Turning the Cursor Knob will change the year and thus change the Automatic Magnetic Variation. Simply pick

the current year and all courses indicated will have the correct Magnetic Variation applied.

Pressing the Right Scroll Button again will bring up "AUTO ADV". This is Auto Advance for a series of waypoints set in the RTE mode and will be explained later. For now, accept the default "Y".

The next press of the right Scroll button will bring up HEMI with options of AUTO and USER. Most users will select AUTO, the exception being if you are located in the Eastern Hemisphere. If you are in the East, see the additional information elsewhere in this manual.

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Pressing the Right Scroll Button will then bring up CAL L/L, Y or N. Most of us will accept N unless we are in an area where it is necessary to correct for Additional Secondary Factor (ASF) errors. These errors occur on rivers and lakes that are far inland and in certain areas of the world where the Loran distortions have not been corrected on the charts (such as the Mediterranean Sea). See details later in this manual.

The next press of the Right Scroll button will indicate SPEED with options of SLOW, MED and FAST.

SLOW should be selected by sail boats and slow moving vessels in general. FAST will give the best data input to the computer if it can be used. Weak signal areas or areas where

the user is very close to a slave transmitter make the use of FAST unpredictable. In these cases, select MED, otherwise select FAST. If in doubt, try FAST first and if while using the Loran, Speed Over Ground or Course Over Ground is excessively jumpy, switch the setting to MED.

Press the Right Scroll Button again and you will see ".01 TD". This will display the highest resolution of the Loran Time Differences (TD's) available. In addition, it will set the Speed Over Ground to read in tenths of a knot at speeds below 10 knots.

Accept the default "N" for now.

Press the Right Scroll Button and "TD SEL A" will be displayed. Accepting the "A" default

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will tell the Loran to use all available TD pairs and blend the information "Automatically" based on distance to the station, SNR and crossing angles. Turning the Cursor Knob will allow manual selection of all combinations of TD pairs. Accept the "A" default for now.

The next press of the Right Scroll Button will bring up "CONVERT". For now, accept the "N". The purpose of this mode is to allow the user to convert TD's to L/L or L/L to TD's and will be discussed fully later in the manual.

Pressing the Right Scroll Button again will bring you back to GRI (where you started).

It will not be necessary to go to SET the next time the Loran is turned on unless you desire to change one or more of the above

parameters. Exit SET by turning the Function Knob.

Position Mode (POS)

Turn the Function Knob to the POS position. The Annunciator will now indicate "WAIT". This is telling you that the microprocessor within the Loran is now performing the operations and calculations necessary to establish your position correctly.

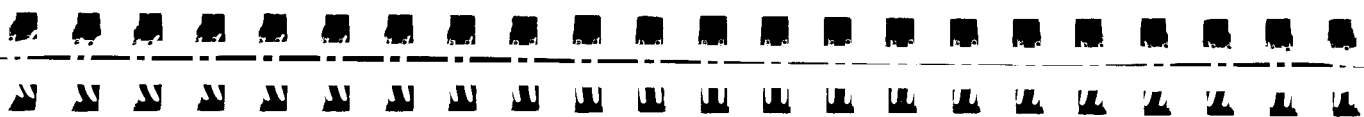
Pressing of either the Left or Right Scroll Buttons will bring up various combinations of TD's or the Latitude/Longitude. If a pair of TD's is selected, each TD is followed by a letter (A-F) which indicates to you the quality

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of the signal being received, "A" being the best while "F" is Failing.

These signal quality indicators will change as the Loran is computing the position. Never use a TD if its indicator is less than "C".

If Latitude/Longitude is selected then hemisphere indicators will be present. North or South for Latitude and East or West for Longitude.

When the "WAIT" annunciator turns off, then the Loran is ready to use. The position indicated, either in TD's or Lat/Lon is accurate, and may be used with confidence.

The displayed position will change as the actual position of your vessel changes. The Hemisphere indicators (N,S,E,W) in Lat/Lon mode are fully automatic and need no input by the user.

The bottom line will indicate the GRI for a few seconds, and then indicate Course and Speed Over Ground.

Waypoint Mode (WPT)

The next step in Loran operation is to enter waypoints. A waypoint is simply a place to which you desire to go. This may be a harbor entrance, a fishing or dive location, a buoy, a lighthouse, etc. The WPT mode is where these spots are entered and stored in the Loran memory for later retrieval.

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Later in the NAV mode, these waypoints will be recalled and navigation data will be provided to the Loran user.

Turn the Function Knob to WPT.

The display will show "WPT" and three flashing digits 001 thru 199. Turning the Cursor Knob will, as you probably have guessed, change these numbers. The number that you select will be the number of the waypoint that you are about to enter into the Loran memory.

Let's select the number 10 by turning the Cursor Knob until "010" appears flashing.

Press the Right Scroll Button. Two things will happen on the display screen. The number "10" will appear on the right side of the

second display line indicating the number of the waypoint you are entering and the Message Line will read "L/L Y TD N" with the "Y" Flashing.

If you wish to enter the waypoint in Lat/Lon then leave it alone. If however, you wish to enter the waypoint in TD's then use the Cursor Knob to select "N". The display will then read "L/L N TD Y".

Lets select Lat/Lon by selecting "Y".

Press the Right Scroll Button.

Find the waypoint you wish to enter on a chart, and establish it's Latitude and Longitude in degrees, minutes and hundredths of a minute. Please note some

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charts read in degrees, minutes and seconds. If this is the case, you must convert the seconds to hundredths of a minute.

The Message Line is now indicating a flashing 0°. Turn the Cursor Knob until the Latitude in degrees is indicated in place of the "0°". Accept this figure by pressing the Right Scroll Button.

Now, using the Cursor Knob, enter the Latitude minutes into the flashing display. Then press the Right Scroll Knob again and enter the Latitude hundredths of a minute. Pressing the Right Scroll Knob again will bring us to Longitude. Repeat fully as you did with the Latitude.

That's all there is to it.

Enter several more waypoints keeping track of each in the Waypoint Log that is included in the back of this manual. You might try entering some using TD's instead of Lat/Lon. The procedure is virtually the same as for Lat/Lon. TD's are entered two digits at a time.

Your present position may be entered as a waypoint by simply pressing the MEM Button. Waypoint Number 199 will be displayed flashing, indicating that you may select the waypoint into which you desire to enter your present position. Turn the Cursor Knob until the Waypoint Number desired is selected. The Network Loran will do the entering for you.

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If you are interfacing the Network Loran with a VIGIL Radar with the Supervisor option, waypoints may be entered into the Loran from the Radar screen. This will be explained in more detail later on in this manual.

Navigate Mode (NAV)

Now that you have several waypoints entered, it's time to use the power of the Network Loran to get all the navigation data you will need in your cruising.

Turn the Function Knob to NAV. The Message Line of the display will read "NAV TO" and three flashing digits. The waypoint is selected by, as you guessed, turning the Cursor Knob

to one of those waypoints previously entered. Accept the number by pressing Right Scroll Button.

The Message Line will flash "COMPUTING" for a second or so and then change over to the first Nav Data page called the Composite "CDI" Page (described below).

The Annunciator will also show "NAV" to indicate you are in the NAV mode, and the destination Waypoint Number will appear below the NAV annunciator.

If for some reason, you picked a waypoint that you did not define, the words "EMPTY WPT" will flash on the Message Line. Turn the Cursor Knob until you get a defined waypoint and repeat the steps above.

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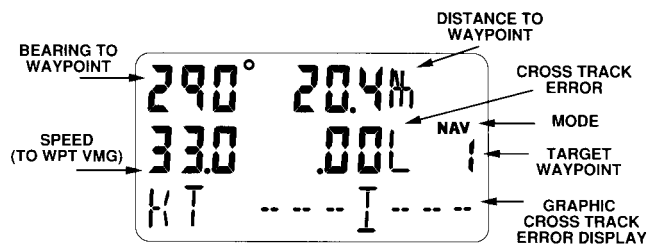
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Turn the vessel toward the waypoint and steer the Compass Course indicated.

Composite "CDI" Page

The first page of the Navigation data is presented on the Composite CDI page. This page of data displays the magnetic bearing and distance from the present position to the active Waypoint, speed made good toward the waypoint, cross track error distance, direction to steer to return to course, and the CDI graphic display.

The CDI display is a series of double dashes appearing in the lower line of the display which presents a graphic representation of your vessel's position relative to the course to the waypoint. The vertical bar in the display



NAVIGATION DATA
COMPOSITE CDI PAGE

represents your vessel and center pair of dashes, with over and under dashes, represents the course line. Each pair of dashes on either side of the center is one division off course. The sensitivity of the CDI display may be set to 1/16, 1/8, 1/4, or 1/2 mi. or km per division. The set up function is used to set the CDI sensitivity.

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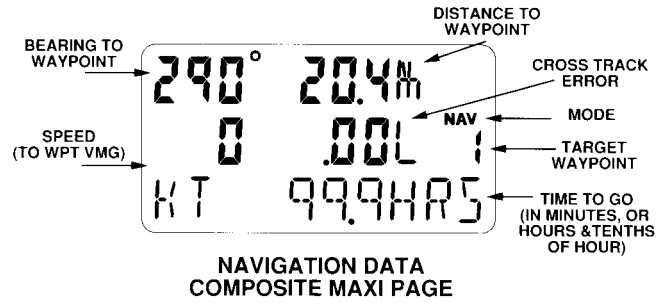
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Composite Maxi Page

Press the Right Scroll Button once to scroll to the next navigation data page.

This is the Composite Maxi Page. This page of data shows all of the most used navigational data on one page. On the upper line of the display bearing and distance to the waypoint is shown. The center line of data shows the speed made good toward the waypoint, cross track error, distance and direction to steer, plus active waypoint number and NAV indicator. The speed unit of measure and time to go appear on the lower line.

Another press of the Right Scroll Button brings up the Time to Go page of data. This page



shows the selected waypoint and time required to reach that position from the present location.

The next press of the Right Scroll Button, will indicate COG (Course over Ground) and SOG (speed over Ground).

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The next two presses will display the position of the waypoint as stored in the Loran memory.

The last press of the Right Scroll Button will bring you back to the starting point. Please note that you may use the Left Scroll Button at any time to go back to a desirable display.

Additionally, you may navigate to a route (rather than a waypoint), in both a forward or backward directions, to a PLN line or to your Anchor Position. These options will be discussed later in this manual.

RTE MODE

A route is a cruise that takes you through a series of waypoints to a final destination. The Network Loran is capable of storing in its memory 10 separate and distinct routes of up to 50 waypoints each. The waypoints may be entered at random; routes may be edited; that is, waypoints either inserted, removed or changed.

Turn the Function Knob to RTE.

The Message Line of the Display will read "ROUTE" with a single flashing digit, from 0 to 9. The Cursor Knob will select which number is flashing. This enters the selected route into the Loran memory. Pick ROUTE 1.

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Press the Right Scroll Button and the words "START" and "END" will appear.

You will now pick a starting point for the beginning of your cruise. Select one of the waypoints that you have previously entered into memory and by using the Cursor Knob, dial that number of that waypoint into the flashing digits. Note that the word "END" will change to flashing digits.

Press the Right Scroll Button to accept this number. Note that the flashing word "END" is back.

Select another of the waypoints previously entered. This will be the second point of your cruise. Use the Cursor Knob to dial this information into the display. Accept this

value by pressing the Right Scroll Button. Select and enter a third waypoint as your third point in the cruise. Again press the Right Scroll Button.

You may continue entering waypoints until up to 50 of them have been entered. After your final destination is selected you may choose to end the route by selecting "END" instead of entering an additional waypoint .

You may review your route simply by pressing the Right Scroll Button several times until the "END" is shown. An additional press will take you back to the ROUTE Number Select Page. Note that the Annunciator in the upper right hand corner of the display will show RTE to confirm that you are in the RTE Mode.

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Editing a Route

The route you have just entered may be modified either by deleting one or more of the points or by adding one or more additional points to it.

Lets add a new point to the route.

Make sure that the "ROUTE 1" is on the message line. Press the Right Scroll Button Twice. One of the waypoints is flashing.

Turn the Cursor Knob Counter Clockwise until "INS" (for insert) is flashing. Press the Right Scroll Button. You will then see flashing digits. By using the Cursor Knob you can dial in the number of the waypoint that you wish to install.

Pressing the Right Scroll Button will accept this number and insert the new waypoint into the route.

The new route may be verified by repeatedly pressing the Right Scroll Button through the route.

Now we will Delete a Waypoint from the Route.

First, make sure "ROUTE 1" is on the message line. Press the Right Scroll Button until the waypoint you wish to delete is flashing.

Turn the Cursor Knob Counter Clockwise until the "DEL" (for delete) is flashing. Then press the Right Scroll Button. The waypoint that you wanted to delete is gone.

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Verify the route again by repeatedly pressing the Right Scroll Button.

That's all there is to It!

Navigating a Route

Turn the Function Knob to NAV. The Message Line will indicate "NAV TO" plus 3 flashing digits. Turn the Cursor Knob (usually Counter Clockwise) until an "R" with a flashing digit (0-9) and a right arrow (>) is displayed.

This flashing digit is the Route Number that you wish to select for navigation. Please note that this route must have been previously defined.

The right arrow (>) indicates that you will be going forward on the route, or progressing from Waypoint to Waypoint in the order in which they were entered.

Accept the entry by pressing the Right Scroll Button. The Message Line will then indicate "PP TO" plus 3 flashing digits. This represents your present position to the first waypoint in that route.

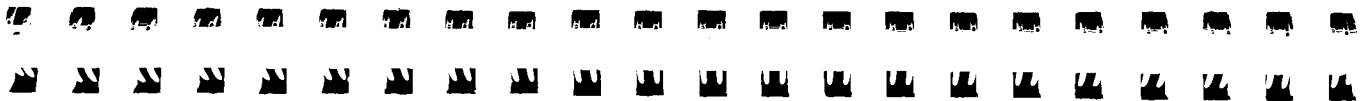
You may choose to go to this or any other waypoint in that chosen route by turning the Cursor Knob. The Cursor Knob will only allow you to select a waypoint stored in that route.

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Steering a Reciprocal Route

After you arrive at your final waypoint and plan to return home, you might want to use the same route, but use your present position as the starting point and your home harbor as the end point.

This also is easily done!

Turn the Function Knob to NAV. The Message Line will indicate "NAV TO" plus 3 flashing digits. Turn the Cursor Knob Counter Clockwise until an "R" with a flashing digit (0-9) and a left arrow (<) is displayed.

This left arrow (<) indicates that you wish to progress along the route in the reverse order from which the Waypoints were entered.

Auto Advance

When you first turned the Network Loran on and you went to the SET position, one of the selected items was "AUTO ADV Y".

What this selection did was to tell the Loran that when you decided to navigate a Route that the Loran would automatically switch to the next waypoint upon arrival at the current waypoint or by crossing a line perpendicular to that waypoint.

Please note that this is not when the Arrival Alarm sounds unless you have the Arrival Alarm set at 0.0. The alarm will sound at some point before you actually arrive at the waypoint, depending on the setting made in the SET mode.

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You may defeat this Auto Advance by going to the SET mode, pressing the Right Scroll Button repeatedly until "AUTO ADV" with a flashing "Y" is indicated, and change it to "N" by using the Cursor Knob.

Additional Operations

What we have discussed so far is the basic operation of the Network Loran. We want you to get the "feel" of getting information into and out of the Loran. For a full, detailed rundown of all the operations please refer to the Reference Section of this manual.

Several other items should be covered here in the basic operations section.

Night Operation

The Network Loran has a soft, even, red electroluminescent back light that has three levels of brightness. To turn the light on simply press the "DIM" Button. Each additional press of this button will decrease the brightness of illumination until the minimum level is reached.

The next press of the button will turn the light OFF.

Instant Waypoint Entry

There are many times when you might want to enter your exact present position as a waypoint. This might be to return to a harbor

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entrance, save a good fishing or dive spot, or even find a "man overboard".

This operation Could not be simpler!

To perform this task just press the MEM Button. The message line will ask "MEM IN 199"? If you take no additional action, your position will be automatically entered into Waypoint 199 in a few seconds.

If however, you wish to have your present position entered into a waypoint other than 199 turn the cursor knob until that number is indicated in the flashing display. You may then accept this number either by pressing the Right Scroll Button or if you can wait a few seconds, by doing nothing.

The Network Loran will automatically, in a few seconds, enter your present position into the waypoint you have selected.

Copying Waypoint Information

Information stored in any waypoint may be copied to a different waypoint number. If, for instance, you stored your present position into Waypoint 199 as described above, and desire to copy it to Waypoint 50 for permanent storage, you would proceed as follows:

First, turn the Function Knob to the WPT position then press the Left Scroll Button. The Message Line will ask "COPY FR" and 3 flashing digits. Move the Cursor Knob as

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usual, to indicate "199" and press the Right Scroll Button.

The Message Line will then ask "COPY TO" and the flashing digits. Dial in "50" using the Cursor Knob and accept this number by pressing the Right Scroll Button again.

The information stored in 199 will then be copied into Waypoint 50. Please note that the original information still remains in Waypoint 199, and will until you write new information over the old.

Digital Data Output

If you want the Network Loran to provide Data Output to interface with your autopilot, plotter, Radar, or the like, you have the option to select this output in one of four formats; NMEA 0180, NMEA 0183, VIGIL 1 or VIGIL 2.

You must read the manual that came with your instrument to determine which of these outputs is required by that equipment. An B&G Autopilot for instance, requires that either NMEA 0180 or 0183 be selected. Certain Plotters, Radars and Computers require that 0183 be selected.

If you have a VIGIL Radar with the Supervisor option installed you would select either VIGIL

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1 or VIGIL 2 depending on how you wish the units to interface.

VIGIL 1 will allow the user to download waypoints from the Radar screen to the Loran and display Loran data on the right side of the screen.

VIGIL 2 will display the Loran information only and not allow the downloading of waypoints.

To select the correct format proceed as follows:

Turn the Function Knob to the SET position. Then press the Right Scroll Button repeatedly (11 times actually) until the Message Line asks "DATA 018" and one flashing digit. Turn the

Cursor Knob until the desired data type is indicated. Press the Right Scroll Button to accept this format.

Please note that if you choose VIGIL 1, a Radar MUST be wired to the Loran. If it is not, the Loran will "lock up" and will not function.

This data is now available in the correct format for use by your other equipment at the "AP" terminals of the Receiver Unit. Consult the installation section of this manual for full details.

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Conversion of L/L to TD's or Vice Versa

If you have position or waypoint information in Latitude/Longitude or in TD's and wish to convert this information to the other format, proceed as follows:

Turn the Function Knob to SET position. Press the Right Scroll Button repeatedly (15 times actually) until the Message Line indicates "CONVERT" and the flashing letter "N" or "Y".

At this time, you might note that 15 presses of the Right Scroll Button can be eliminated if you press the Left Scroll Button just once. The information is stored by the Loran in such a way that it may be accessed by pressing either of the Page Scroll Buttons. Since the

CONVERT function is the last in the SET mode, it is easier backwards.

Use the Cursor Knob to indicate "Y" for Yes and press the Right Scroll Button again. The Message Line will then flash "L/L to TD". Turn the Cursor Knob to change this display to one of the following:

L/L TO TD (Converts L/L to TD's)

TD TO L/L (Converts TD's to L/L)

VIEW (Views position in L/L or various TD's)

EXIT CNV (Exits the Convert Mode)

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Lat/Lon to TD Conversion

If you desire to convert a L/L position to TD's select the "L/L to TD" by using the Cursor Knob and Press the Right Scroll Button. The display will then ask for the Latitude in three steps; degrees, minutes and hundredths of a minute.

First, using the Cursor Knob indicate the correct number of degrees and accept this number by pressing the Right Scroll Button.

Then input the minutes and hundredths of a minute by repeating the above steps.

The display will then ask for the Longitude position Enter it by repeating as for the Latitude above.

After both Latitude and Longitude have been entered, pressing the Right Scroll Button will bring "VIEW" flashing to the screen.

After a few seconds, your present position on the screen will be replaced by the Latitude and Longitude that you have just entered. Pressing the Right Scroll Button again will then bring up a converted pair of TD's for that particular Lat/Lon.

Repeated pressing of the Right Scroll Button will give all the various combinations of Converted TD pairs that are available, ending with the originally entered Lat/Lon.

Now for an interesting feature of the Network Loran!

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When you get the particular pair of TD's that you desire, you may store them in Waypoint memory by simply pressing the MEM Button. The Message Line will read "MEM IN 199". If you wish the converted TD's to be stored in Waypoint 199 you can either press the Right Scroll Button or just do nothing at all, and in several seconds those TD's will be stored into Waypoint 199 automatically.

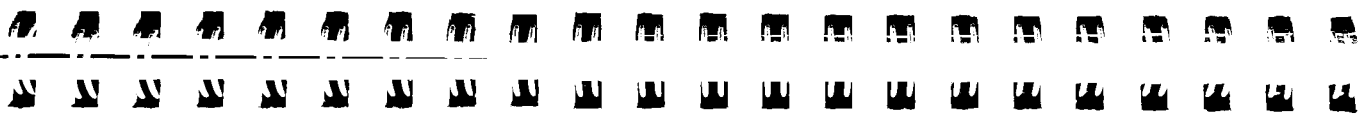
If you wish to have those TD's stored in a Waypoint other than 199, then turn the Cursor Knob until the desired waypoint number is indicated. Then either press the Right Scroll Button, or do nothing but wait for several seconds for the Loran to store the TD's automatically.

TD's to Lat/Lon Conversion

Select the "TD TO L/L" by turning the Cursor Knob and press the Right Scroll Button. The Message Line will then ask for the first 2 digits of the first TD (indicated by the prefix "A"). This is entered by turning the Cursor Knob to the desired number.

Press the Right Scroll Button and it will then ask for the next 2 TD digits. Again enter with the Cursor Knob. Additional presses of the Right Scroll Button will bring up the third 2 digits, and finally the last digit.

Enter the desired number in each case by turning the Cursor Knob.



Continued pressing of the Right Scroll Button will bring up the second TD (B). Enter as previously described.

After the second TD is entered, pressing the Right Scroll Button will bring up "VIEW" flashing. The entered TD's will be displayed for you to verify the data.

Repeated pressing of the Right Scroll Button then brings up the conversion to other pairs of TD's for the same position and eventually the Latitude/Longitude for that position.

Either the Lat/Lon or another pair of TD's may be entered into a Waypoint memory as previously described.

Exiting the Convert Mode

To exit the Convert Mode, turn the Cursor Knob until "EXIT CNV" is displayed on the Message Line and then press the Right Scroll Button.

Plan Mode

The Plan Mode allows you to look ahead and determine the range and bearing between any two different waypoints.

Turn the Function Knob to NAV and then turn the Cursor Knob counter clockwise until the Message Line indicates "NAV TO PLN". Press the Right Scroll Button.

OPERATION

The Message Line will then read "PP TO and three flashing digits".

The flashing digits on the right side represent the "TO" waypoint, and the PP (Present Position) on the left side represents the "FROM" waypoint. To see the range and bearing from your present position to any other waypoint, dial in the desired waypoint number by using the Cursor Knob, and then press the Right Scroll Button. The range and bearing will be computed and displayed.

If you want to see the range and bearing between two waypoints (FROM -TO) neither of which is your present position, proceed as follows:

When "PP TO ###" is on the Message Line, press the Left Scroll Button. This will cause the "PP" (on the left side) to flash indicating that it may be changed by use of the Cursor Knob. Enter the "FROM" waypoint and press the Right Scroll Button. You will now see the three digits flashing (on the right side). This is the "TO" waypoint. Enter the desired waypoint number by using the Cursor Knob and press the Right Scroll Button.

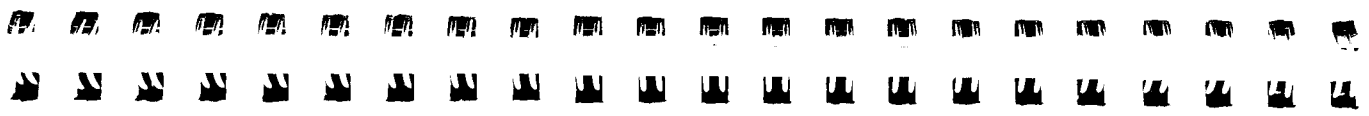
The range and bearing between those two waypoints will then be displayed on the Message Line.

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ALARMS

Alarms

There are three alarm functions in the Network Loran. They are:

1. Waypoint arrival (0-9.9 miles)
2. Off Course (0-9.9 miles)
3. Anchor Watch (.01-.99)

To set any of these alarms, turn the Function Knob to SET position. Press the Left or Right Scroll Button until the desired function is displayed on the Message Line (Anchor, Course or Arrive) and set the desired alarm range to the desired number by using the Cursor Knob.

Accept the displayed number by pressing the Right Scroll Button.

The alarm value(s) are now set.

Arrival Alarm

The Waypoint Arrival Alarm is always active, that is may not be shut off. This alarm is triggered in two ways. First, if the vessel arrives at the waypoint within the range specified by the user in SET mode the alarm will sound and the word "ARRIVED" will flash on the display.

The second is by passing the waypoint. The alarm will go off when the vessel cuts an imaginary line drawn through the waypoint and perpendicular to the course line of the vessel. In this case, the word "CROSSING" will flash on the display.

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