

SECTION 9

Pilot's Operating Handbook Supplement AS-15

NAV/COM Transceiver GARMIN SL30



This supplement is applicable and must be inserted into Section 9 of the POH when the GARMIN SL30 NAV/COM Transceiver is installed in the AQUILA AT01-100. The information in this supplement adds to or replaces information in the basic POH.

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0.1 RECORD OF REVISIONS

Issue	Reason for Change	Effected Pages	Date of Issue
A.01	Initial Issue	All	28.05.2013
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0.2 LIST OF CURRENT PAGES

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1 - 13	A.01	28.05.2013
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1. GENERAL

This supplement provides a general description of the NAV/COM Transceiver GARMIN SL30 and its basic operation and integration into the AQUILA AT01-100. For a more detailed description of the GARMIN SL30 and full operating instructions, refer to the current issue of the SL30 Pilot's Guide, P/N 560-0403-01.

The information contained within this supplement must be used in conjunction with the complete POH. Furthermore, the "Quick-Reference-Card" of the SL30 furnished by the manufacturer, which contains a summary of the basic operating functions, must always be carried on board the aircraft. It is also recommended to carry the SL30 Pilot's Guide on board the aircraft during flight.

2. OPERATING LIMITATIONS

The GARMIN SL30 COM/NAV Transceiver is optional equipment and failure is not critical in any phase of flight.

The operating limitations of the basic POH apply without any changes or restrictions.

3. EMERGENCY PROCEDURES

This section defines standard procedures which must be observed in the event of a failure of the NAV/COM transceiver as well as for the transmission of radio messages on the international emergency frequency. All emergency procedures in the basic POH remain valid and are only supplemented by the following procedures. Particularly in the case of an electrical fire or burning cables, the emergency procedures listed in the basic POH must be observed.

FAILURE OF THE COM TRANSCEIVER UNIT

In the event of a COM transceiver unit failure of the SL30, proceed in accordance with the standard emergency procedure defined in the basic POH.

FAILURE OF THE NAV RECEIVER UNIT

In the event of a failure of the SL30 NAV receiver unit, the remaining operative NAV equipment should be used as required.

TRANSMITTING ON THE INTERNATIONAL EMERGENCY FREQUENCY 121.5 MHZ

In the case of an emergency during flight, a radio message may be transmitted on the international emergency frequency 121.5 MHz. This standard emergency channel is stored in the COM memory of the SL30 and may be selected in different ways:

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MANUAL SELECTION (121.5 MHZ):

- Switch over to the COM operating mode, if you are not already in this mode.
- Manually tune in the emergency frequency using the frequency selector knobs.
- Press the **frequency flip/flop** button to activate the emergency frequency.
- Transmit radio messages as required/desired.

SELECTION FROM COM FREQUENCY MEMORY:

- Switch over to the COM operating mode, if you are not already in this mode.
- Press **SEL** button.
- Turn the large frequency selector knob to select the menu item *EMERG. CHANNEL*
- Press the **frequency flip/flop** button to directly activate the emergency frequency.
- Transmit radio messages as required/desired.

MALFUNCTIONS OF THE SL30 NAV/COM TRANSCEIVER

In the event of malfunctions of the SL30 NAV/COM transceiver, refer to the SL30 Pilot's Guide, P/N 560-0403-01, for trouble-shooting and corrective actions. Any necessary maintenance or repair work must be conducted and certified by an authorized maintenance/repair organization or the manufacturer of the equipment.

4. NORMAL PROCEDURES

No change to the basic POH. A short description of the operation of the SL30 NAV/COM transceiver is contained in section 7 of this supplement.

5. PERFORMANCE

No change to the basic POH.

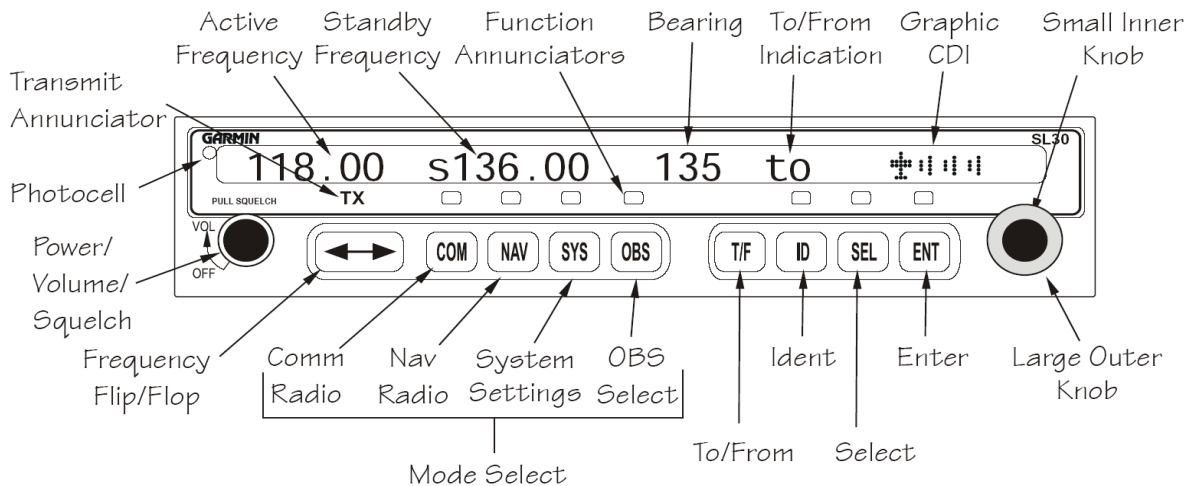
6. WEIGHT AND BALANCE

The change in empty weight and the corresponding center of gravity after the installation or removal of the GARMIN SL30 must be determined and recorded in accordance with section 6 of the basic POH.

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7. SYSTEMS DESCRIPTION

GARMIN SL 30 FRONT VIEW



GENERAL DESCRIPTION

The GARMIN SL30 NAV/COM transceiver combines a powerful 760 channel VHF communications transceiver with a 200 channel VOR, localizer and glideslope receiver. Besides traditional NAV/COM features, the SL30 also incorporates workload-reducing functions such as automatic decoding of the Morse code station identifier for VOR and LOC ground stations, storage of often-used frequencies in frequency memory lists, an integrated course deviation indicator integrated in the display of the SL30, and more. In addition to the communications transceiver and navigation receiver units, the GARMIN SL30 also includes an independent voice-activated INTERCOM system.

Together with the active frequency, the tuned-in STANDBY frequency is also displayed on the alphanumeric display on the front of the SL30. Furthermore, the SL30 offers the opportunity to monitor the tuned-in STANDBY frequency in the background. To activate the tuned-in STANDBY frequency, the frequency flip/flop button is pressed. When pressing the NAV button on the key panel, the pilot switches over to the NAV mode and the tuned-in active as well as the STANDBY frequency of the NAV mode appears on the display. When the NAV mode is activated, the annunciator (LED) above the button will light. By pressing the COM button, the SL30 switches back to the COM mode and the LED annunciator above the button will light. A photocell is located in the top left corner of the front panel display which automatically adapts the light intensity of the display LEDs to the current light conditions.

The transmission and reception range of the SL30 VHF COM transceiver unit extends to the frequency band between 118 and 136.975 MHz with 760 channels, i.e. the COM frequencies can be selected in 25 kHz increments. The SL30 VHF NAV receiver unit operates on the

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frequency range between 108 and 117.95 MHz with 200 channels (50 kHz between adjacent channels) decoding both the VOR and localizer navigation signals. The built-in glideslope receiver will automatically tune the corresponding glideslope paired frequencies (328.6 to 335.4 MHz) when the associated localizer frequency is tuned in and received.

OPERATING MODES

COM MODE

The COM mode is selected by pressing the **COM** button which activates the operating functions of the SL30 VHF COM transceiver unit. In the COM mode, the VHF communication channels can be selected, monitored or the memory functions of the communications unit may be used. If the COM mode is selected, the LED annunciator located on the display directly above the **COM** button will light.

When the **COM** button is pressed a second time, the FREQUENCY MONITORING function is activated which allows the STANDBY frequency to be monitored while listening to the active frequency. A small “m” (“monitoring”) appears on the display in front of the STANDBY frequency in place of the small “s” (“stand-by”) after activating the FREQUENCY MONITORING function. The small “m” indicates that the FREQUENCY MONITORING function is active. During normal operation when the FREQUENCY MONITORING function is inactive, the small “s” identifies the STANDBY frequency.

The FREQUENCY MONITORING function is immediately deactivated and the unit switches automatically to the active frequency as soon as a signal is received on the active frequency. To manually deactivate the FREQUENCY MONITORING function, the **COM** button must be pressed again or the **frequency flip/flop** button has to be selected. After deactivation of the FREQUENCY MONITORING function, the small “s” appears in front of the STANDBY frequency again.

NAV MODE

The NAV mode is selected by pressing the NAV button which activates the operating functions of the SL30 VHF NAV receiver unit. In the NAV mode, the VHF navigation channels can be selected, monitored, or the memory functions of the navigation unit may be used. If the NAV mode is selected, the LED annunciator located on the display directly above the NAV button will light.

The NAV mode provides a MONITORING function for the STANDBY frequency similar to that of the COM mode. When the NAV button is pressed a second time, the FREQUENCY MONITORING function is activated. A small “m” (monitoring) appears on the display in front of the STANDBY frequency in place of the small “s” (stand-by). Instead of the main station identifier being displayed, the OBS course or the CDI indicator of the FROM radial of the standby frequency is displayed in brackets. Displaying the FROM radial in STANDBY mode

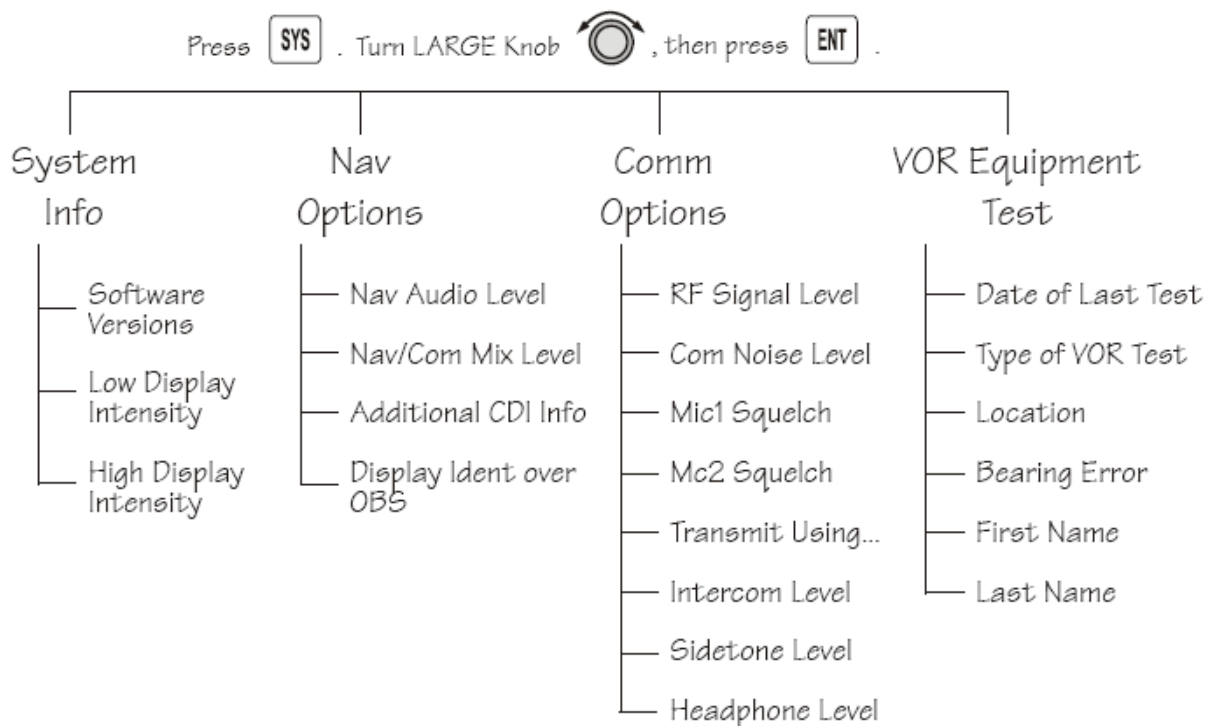
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along with the FROM radial of the active frequency allows a cross bearing to be taken with out requiring a second NAV receiver.

The FREQUENCY MONITORING function is deactivated when the **NAV** button is pressed again, a frequency is recalled from the internal memory, or the **Frequency Flip/Flop** button is pressed.

SYSTEM MODE

In order to make configuration changes to the SL30, the pilot switches to the SYSTEM mode by pressing the SYS button. After pressing the SYS button, the LED annunciator directly above the SYS button will illuminate. In the SYSTEM mode, general configuration or system information may be recalled, NAV/COM options changed, or information regarding the last equipment test retrieved. The following illustration shows the general structure of the available menus. For more information on the menu and possible configuration options, refer to the current issue of the SL30 Pilot's Guide, P/N 560-0403-01.



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OBS MODE

The OBS mode of the SL30 is selected by pressing the OBS button which activates the CDI display in the form of a course deviation scale. The desired OBS course, to which the deviation of the current track is to be indicated, can be selected using the large and small frequency selector knobs. The large frequency selector knob adjusts the course in 10° steps (00 to 35), the small frequency selector knob adjusts by 1°. When the OBS mode is active, the LED annunciator directly above the OBS button will illuminate.

The CDI graphic is shown in the right side of the SL30 display consisting of an aircraft symbol which points upwards or downwards, depending on the TO or FROM selection. Up to five pairs of short and long bars on the right or left side of the aircraft symbol, depending on the aircraft position with regard to the selected OBS course, show the deviation from the selected radial. Each short and tall bar pair indicates two degrees of deviation. When no VOR signal is received, the CDI graphic on the display is dashed and marked "flagged". The CDI function is not available for LOCALIZER ground stations.

The OBS mode also provides a direct to VOR function. This function is activated by pressing the OBS button a second time. The CDI centers immediately in the TO mode.

An external CDI, such as the GARMIN GI 106A, may also be installed in the instrument panel of the aircraft as an option.

OPERATION OF THE SL30

In order to activate the SL30 NAV/COM transceiver, both the **ALT1/BAT** switch and the Avionics Master switch must be in the "ON"-Position.

TURNING OFF AND ON

The SL30 NAV/COM transceiver is turned on by rotating the power/volume knob clockwise past the notch. Further rotation of the knob clockwise increases the volume. Rotate the knob to the left to reduce the volume. After activation, the SL30 will go through a short initialization routine and then display the last selected frequency.

The SL30 is turned off by rotating the power/volume knob counter-clockwise until the knob notches in the end position.

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FREQUENCY SELECTION (COM AND NAV MODES)

New frequencies are first selected as a STANDBY frequency and then set to the active frequency by pressing the **Frequency Flip/Flop** button when desired. The STANDBY frequency can be selected using the large and small frequency selector knobs located near the right edge of the SL30 front panel. The large frequency selector knob is used to change the frequency in 1 MHz increments. The small frequency selector knob is used to change the frequency in 25 kHz increments in the COM mode and in 50 kHz increments in the NAV mode. Only the STANDBY frequency can be changed using the frequency selector knobs, not the active frequencies.

RECALLING STORED FREQUENCIES

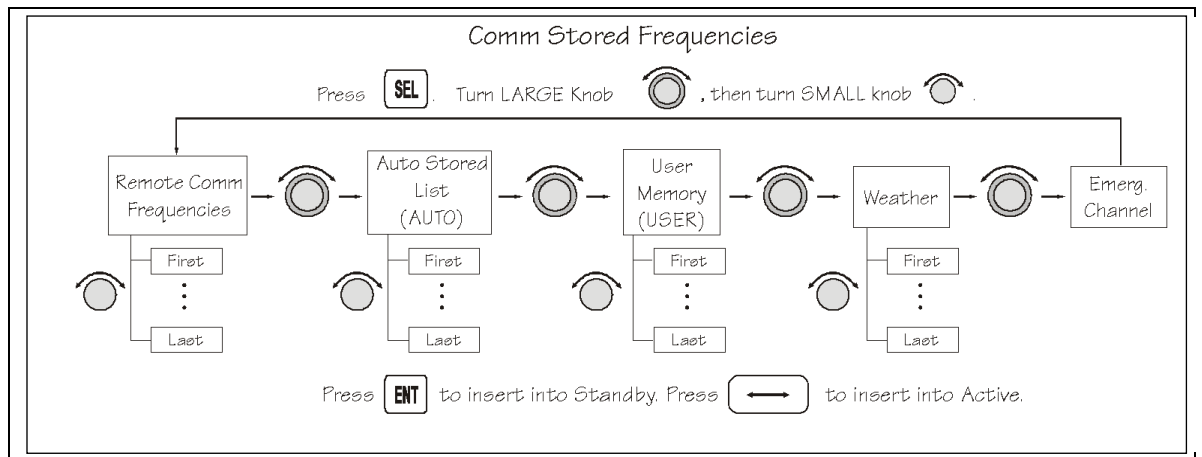
The following description is valid for both the COM and NAV modes.

In order to recall and select stored frequencies from the internal memory, proceed as follows:

- Select the desired operating mode (COM or NAV)
- Press the **SEL** button to switch to the frequency lists
- The frequency lists can be selected by scrolling with the large frequency selector knob (refer to the illustration on the following page). To recall a manually saved frequency, select the frequency memory list (menu item) *USER MEMORY* with the large frequency selector knob.
- Use the small frequency selector knob to scroll through the frequencies stored in a list.
- Press the **ENT** button to set the chosen frequency as STANDBY. Use the **Frequency Flip/Flop** button to activate the frequency.
- Press the **SEL** button to leave the frequency lists.

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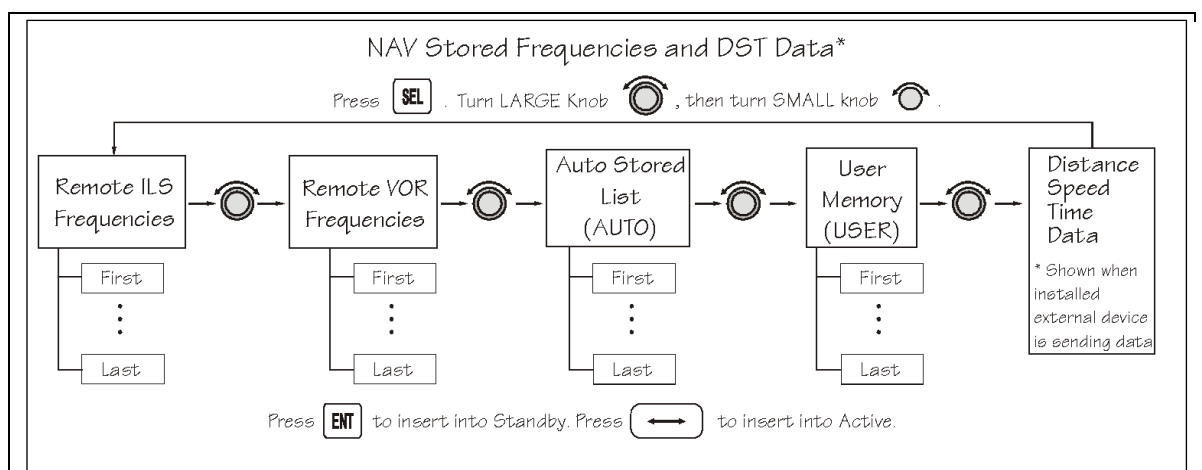
The following illustration shows the menu structure of the available frequency memory lists in the COM mode.



Menu Structure of the Frequency Memory Lists (COM Mode)

The frequency memory list *AUTO STORED LIST* contains the last ten active frequencies used in chronological order. Each individual frequency may be selected by rotating the small frequency selector knob. All manually saved channels are stored in the *USER MEMORY* list (up to 250 COM and NAV frequency channels). The international emergency frequency (121.5 MHz) is stored in the menu item *EMERG. CHANNEL*. The emergency frequency is set as the *STANDBY* frequency position by pressing the **ENT** button. Pressing the **frequency flip/flop** button activates the emergency channel.

The menu structure of the available frequency memory List lists in the NAV mode is similar to the COM mode and is shown in the following illustration.



Menu Structure of the Frequency Memory Lists (NAV Mode)

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For a detailed description of each frequency memory list and the procedure to manually save channels in the COM and NAV modes, please refer to the current issue of the SL30 Pilot's Guide, P/N 560-0403-01.

COM TRANSCEIVER (COM MODE)

VOLUME AND SQUELCH

The speaker and headphone volume level is adjusted by rotating the power/volume knob. To disable the automatic squelch, the power/volume knob is pulled out slightly. In the SYSTEM mode under the menu item *COMM OPTIONS* it is possible to match the automatic squelch to the headsets in use and to the overall noise.

TRANSMITTING

The transmitter mode of the SL30 COM transceiver unit is activated by pressing the push-to-talk button on the control column. The transmit annunciator ("TX"), located above the frequency flip/flop button, appears on the display while the COM radio transmits.

NAVIGATION RECEIVER (NAV MODE)

NAV STATION IDENTIFICATION

In order to listen to the audio signal (Morse code identifier of the VOR/LOC ground station), the ID button must be pressed. After pressing the ID button, the LED annunciator in the display directly above the ID button illuminates and "IDENT" is displayed for 3 seconds. The Morse code signal of the active NAV channel can now be heard in the headsets. If the ID button is pressed a second time, "VOICE" is displayed for 3 seconds. The Morse code tone volume is reduced so that transmissions on the COM channel can be heard more clearly. Pressing the ID button a third time will deactivate the ID mode and the LED annunciator above the button extinguishes.

INTEGRATION OF THE SL30 COM/NAV-TRANSCEIVER INTO AQUILA AT01-100

The GARMIN SL30 is installed at the center of the instrument panel into the avionic rack. It is connected to the aircraft power supply through the avionic bus which is controlled by the Avionics Master switch (20A protective rocker switch). For functional separation of sender and receiver units of COM and NAV Transceivers the SL30 COM/NAV consists of two independent electric circuits. Each has an individual power supply with a separate circuit breaker. The COM power supply is protected by a 5A circuit breaker which is labeled „**COM 1**“, or when the SL30 is installed as the second transceiver, „**COM 2**“. The NAV power supply is protected by a 3A circuit breaker which is labeled „**NAV/GPS 1**“ or „**NAV/GPS 2**“. Both circuit breakers are located with the other circuit breakers on the right side of the instrument panel.

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The GARMIN SL30 is attached to the aircraft's COM- and VOR antennas.

For additional information and a detailed description of the integration of the SL30 COM/NAV Transceiver into the aircraft, its connection to the on-board electrical system, and the installation position of the COM and NAV antennas, please refer to the current issue of the AQUILA AT01-100 Maintenance Manual.

8. HANDLING, SERVICE AND MAINTENANCE

In order to increase the service life of the GARMIN SL30, it should always be turned off during engine start-up and shut-down. Voltage peaks during start-up and shut-down can damage the unit.

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