

**Pilot's Operating Handbook and
FAA Approved Airplane Flight Manual
Supplement
for**

Garmin GMA 340 Audio System

Includes Optional XM Radio System

When the Garmin GMA 340 Audio Panel and the optional XM Radio System are installed in the Cirrus Design SR22, this Supplement is applicable and must be inserted in the Supplements Section (Section 9) of the Cirrus Design SR22 Pilot's Operating Handbook (Handbook). Information in this supplement either adds to, supersedes, or deletes information in the basic Handbook.

• Note •

This POH Supplement Revision dated Revision 2: 07-18-05 supersedes and replaces the original issue of this supplement dated 07-03-04. This revision adds required data for the optional XM Radio System available for the Garmin GMA 340.

FAA Approved



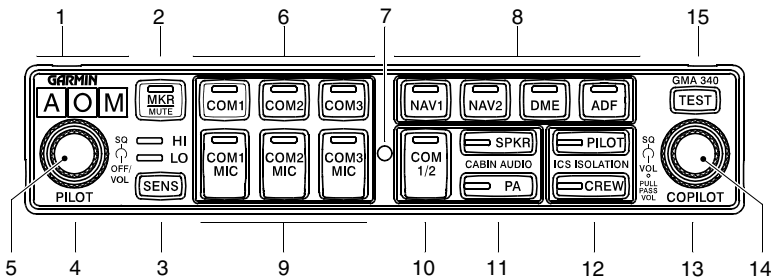
Date 18 JUL 2005

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Section 1 - General

This supplement provides detailed operating instructions for the Garmin GMA 340 Audio Selector Panel/Intercom System with internal Marker Beacon. This supplement covers the basic operating areas of the Audio Control Panel.

- Power On / Fail-safe Operation
- Audio / Transceiver Selection
- Speaker Output
- Public Address (PA) Function
- Personal Music Inputs
- Intercom (ICS)
- Marker Beacon



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- | | |
|---|---|
| 1. Marker Beacon Annunciators | 10. Split COM Button / LED |
| 2. Marker Audio Select Button / LED | 11. Cabin Audio Select Buttons / LEDs |
| 3. Marker Sensitivity Select Button | a. SPKR, Cabin Speaker |
| a. HI Sensitivity LED | b. PA, Public Address |
| b. LO Sensitivity LED | 12. Intercom Isolation Buttons / LEDs |
| 4. Pilot Intercom Squelch (outer knob) | a. PILOT Intercom Mode |
| 5. Power / Intercom Volume (inner knob) | b. CREW Intercom Mode |
| 6. Transceiver Audio Select Buttons / LEDs | 13. Copilot / Passenger Intercom Squelch (outer knob) |
| 7. Photocell | 14. Copilot (IN) / Passenger (OUT) Intercom Volume (inner knob) |
| 8. Receiver Audio Select Buttons / LEDs | 15. Indicator Test Button |
| 9. Transceiver Audio/Transmit Select Buttons / LEDs | |

Figure - 1
Audio Control Panel

Section 2 - Limitations

Use of auxiliary AUDIO IN entertainment input and the optionally installed XM Radio System is prohibited during takeoff and landing.

Section 3 - Emergency Procedures

In the event of an audio panel power failure, the audio system will revert to COM 1 for the pilot's mic and headphones and the pilot will have transmit and receive capability.

Section 4 - Normal Procedures

Refer to Section 7 - System Description in this supplement for a complete description and operation of the Audio Control Panel.

Section 5 - Performance

No change from basic Handbook.

Section 6 - Weight & Balance

Garmin GMA 340 Audio System: No change from basic Handbook.

Installation of the optional XM Radio System adds the following optional (Sym = O) equipment at the weight and arm shown in the following table.

ATA / Item	Description	Sym	Qty	Part Number	Unit Wt	Arm
22-01	XM Receiver	O	1	16665-001	1.7	114.0

Section 7 - System Description

Power On and Fail-safe Operation

The Audio Control Panel is powered 'OFF' when the left inner knob (PILOT) is at the full CCW (counter-clockwise) position. Rotating the knob CW (clockwise) activates the unit. CW rotation of knob beyond the 'on' detent increases pilot ICS (intercom system) volume.

A fail-safe circuit connects the pilot's headset directly to the COM1 transceiver in the event of a power failure to the audio control panel or the panel is switched 'OFF.'

Test

Pressing the TEST button illuminates all Panel LEDs and the Marker Beacon Annunciators full bright. During normal operation, a photocell mounted at the approximate center of the control panel senses ambient light to allow automatic LED and annunciator intensity adjustment. Nomenclature dimming is controlled by the INST lights control on the instrument panel bolster.

Audio/Transceiver Selection

Audio selection is performed through the eight selector push buttons in the center of the Audio Control Panel. All audio selector push buttons are push-on, push-off. Selecting an audio source supplies audio to the headphones or cabin speaker. Selected audio sources are indicated by illumination of the push-button switch.

Navigation receiver audio source is selected by depressing NAV1, NAV2 (if installed), MKR, DME (if installed), or ADF (if installed) will select that radio or device as the audio source. Audio level of navigation receivers is controlled through the selected radio volume control.

Transceiver audio is selected by depressing COM1, COM2, or COM3 (if installed). When the audio source is selected using the COM1, COM2, and COM3 buttons, the audio source will remain active regardless of which transceiver is selected as the active MIC source.

Both transceiver audio and MIC (microphone) can be selected by depressing COM1 MIC, COM2 MIC, or COM3 MIC (if installed). Both pilot and copilot are connected to the selected transceiver and both have transmit and receive capabilities. Pilot and copilot must use their respective Push-To-Talk (PTT) switch to transmit. The intercom will function normally. During transmissions the active transmitter's COM MIC button LED blinks at a 1 Hz rate indicating active transmission.

Split COM Function

Pressing the COM 1/2 button activates the split COM function. When split COM is active, COM 1 is the pilot mic/audio source and COM2 is

the copilot mic/audio source. The pilot has receive and transmit capabilities on COM1 and the copilot has receive and transmit capabilities on COM2. While split COM is active, simultaneous transmission from COM1 and COM2 is not possible. The pilot and copilot can still listen to COM3, NAV1, NAV2, DME, ADF, and MKR. Pressing the COM 1/2 button a second time will deactivate the split COM function. While split COM is active, the copilot is able to make PA announcements over the cabin speaker allowing the pilot to continue using COM1 independently. This is accomplished by depressing the PA button while split COM is active. Pressing the PA button a second time deactivates this feature and returns the system to normal split COM as described above.

COM Swap Mode

COM swap mode is not available in this installation.

Speaker Output

Pressing the SPKR button will cause the selected airplane radios to be heard over the cabin speaker. Speaker output is muted when a COM microphone is keyed. Speaker level is adjustable through an access hole in the top of the unit (*refer to Garmin installation manual or AMM*).

Public Address (PA) Function

Pressing the PA button on the audio control panel activates the PA function. When PA is activated and either the pilot's or copilot's microphone is keyed (PTT pressed), the corresponding mic audio is output over the cabin speaker. If the SPKR button is also active, any previously active speaker audio will be muted while the microphone is keyed. Pilot and copilot PA microphone speaker levels are adjustable through an access hole in the top of the unit (*refer to Garmin installation manual or AMM*).

Personal Music Inputs

• Note •

Serials 0002 thru 1519 without SB 2X-34-14; Audio from AUDIO INPUT jacks Music1 and Music2 is muted during intercom activity.

The Audio Control Panel has provisions for up to two separate personal entertainment input (music) devices. These devices are plugged into the AUDIO INPUT jacks in the center console jack panels. Music1 is connected at the AUDIO INPUT jack near the convenience outlet. Music2 is connected to the jack on the aft console. Music1 is soft-muted during all airplane radio activity. Music1 and Music2 have characteristics affected by the active ICS isolation mode.

- Pressing the PILOT ICS Isolation button isolates the pilot from the copilot and passengers. Music1 is available to copilot and passengers.
- Pressing the CREW ICS Isolation button isolates the crew from the passengers and allows the pilot and copilot to listen to Music1 and the passengers to listen to Music2. Radio activity, MKR activity, and pilot or copilot ICS activity will mute Music1. Music2 is not muted.
- When both the PILOT and CREW ICS Isolation mode are **not** selected, Music1 is available to crew and passengers. Radio activity and MKR activity will mute Music1.

Intercom

Intercom controls are located towards the left side of the Audio Control Panel. The controls consist of a Volume control for the pilot and copilot, a Squelch control for all occupants, and an Intercom Mode Selector switch.

Volume & Squelch Control

ICS volume and voice operated relay (VOX) squelch control is controlled through the left (PILOT) and right (COPILOT) control knobs on the Audio Control Panel Control. Knob control is as follows:

- **Left Inner Knob** – On/Off power control and pilot ICS volume. Full CCW is 'OFF' position (click).
- **Left Outer Knob** – Pilot ICS mic VOX level. CW rotation increases the amount of mic audio (VOX level) required to break squelch. Full CCW is the 'hot mic' position.
- **Right Inner Knob** – When pushed in, rotation controls copilot ICS volume. When out, rotation controls passenger ICS volume.

- **Right Outer Knob** – Copilot and passenger mic VOX level. CW rotation increases the amount of mic audio (VOX level) required to break squelch. Full CCW is the 'hot mic' position.

Each microphone input has a dedicated VOX circuit to assure that only the active microphone(s) is/are heard when squelch is broken. After the operator has stopped talking, the intercom channel remains momentarily open to avoid closure between words or normal pauses.

Control

The Audio Control Panel provides an adjustable Voice Operated Relay (VOX) Squelch Control for the pilot, copilot, and passengers. Since the VOX circuits reduce the number of microphones active at any one time, the amount of unwanted background noise in the headphones is diminished. This also allows the use of dissimilar headsets with the same intercom. Because the user can adjust the trip level of the VOX squelch to fit the individual voice and microphone, this helps eliminate the frustration of clipping the first syllables. There is a slight delay after a person stops talking before the channel closes. This prevents closure between words and eliminates choppy communications.

To adjust squelch:

1. With the engine running, set the VOX trip level by slowly rotating the SQL control knob clockwise until you no longer hear the engine noise in the headphones.
2. Position microphone near your lips and speak into microphone. Verify that normal speech levels open the channel.

Intercom Modes

The GMA 340 provides three intercom (ICS) modes to further simplify workload and minimize distractions during all phases of flight: PILOT, CREW, and ALL. The mode selection is accomplished using the PILOT and CREW push-buttons. Pressing a button activates the corresponding ICS mode and pressing the button a second time deactivates the mode. The operator can switch modes (PILOT to CREW or CREW to PILOT) by pressing the desired modes push-

button. ALL mode is active when neither PILOT or CREW have been selected.

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- PILOT The pilot is isolated from the intercom. The pilot can hear radio and sidetone only during radio transmissions. Copilot and passengers can hear the intercom and music but not the airplane radio receptions or pilot transmissions.
- CREW Pilot and copilot are connected on one intercom channel and have exclusive access to the aircraft radios. They may also listen to Music1. Passengers can continue to communicate with themselves without interrupting the Crew and also may listen to Music2.
- ALL All parties will hear the aircraft radio, intercom, and Music1. The music volume increases gradually back to the original level after communications have been completed. Both pilot and copilot have access to the COM transceivers.

The following table shows, in abbreviated form, what each occupant hears in each of the selectable Intercom modes:

Mode	Pilot Hears	Copilot Hears	Passenger Hears
PILOT	A/C Radios Pilot	Passengers Copilot Music1	Passengers Copilot Music1
CREW	A/C Radios Pilot/Copilot Music1	A/C Radios Copilot/Pilot Music1	Passengers Music2
ALL	A/C Radio Pilot/Copilot Passengers Music1	A/C Radio Pilot/ Copilot Passengers Music1	A/C Radio Pilot/Copilot Passengers Music1

Marker Beacon

The Marker Beacon Receiver provides visual and audio indicators to alert the pilot when the airplane passes over a 75 MHz transmitter.

Marker beacon controls and lights are located at the extreme left of the Audio Control Panel.

Marker beacon audio is selected by pressing the MKR push-button. If no marker beacon signal is being received, pressing the MKR push-button a second time deselects marker beacon audio. However, if marker beacon is being received, pressing the MKR push-button a second time will mute the audio but the light will continue to flash. Pressing the MKR push-button a third time (while marker beacon audio is muted) deselects marker beacon audio. Marker beacon audio muting automatically disables when the current signal is no longer received.

• Note •

The marker beacon lamps (O, M, A) operate independently of the audio and cannot be disabled.

Marker beacon light and audio keying for ILS approach are summarized below:

- | | |
|------------------|---|
| <i>O (Blue)</i> | Outer Marker light and associated 400 Hertz tone. The light and tone are keyed at a rate of two tones/flashes per second. |
| <i>M (Amber)</i> | Middle Marker light and associated 1300 Hertz tone. The light and tone are keyed alternately with short and long bursts. |
| <i>A (White)</i> | Airway/Inner Marker light and associated 3000 Hertz tone. The light and tone are keyed at a rate of six times per second. |

Marker Beacon Sensitivity

The SENS push-button on the left side of the panel is used to set the marker beacon receiver sensitivity. The selected sensitivity level is indicated by illumination of the HIGH or LOW LED. When HIGH sensitivity is selected, the outer marker beacon tone will sound farther out. Selecting LOW sensitivity at this point allows more accurate location of the Outer Marker. Typically, HIGH sensitivity is selected until the outer marker tone is heard, and then LOW sensitivity is selected for more accurate outer marker location.

XM Radio System (Optional Installation)

• Note •

For a detailed operating instructions, *refer to the XM Radio Wireless Controller User Instructions, Document No. XMC050-4, original release or later.* MFD software partnumber 530-00162-000 or later is required for installation of XM Radio System.

Subscription to a XM Radio System Service Package is required for operation. Contact XM Satellite Radio at 800.985.9200 for subscription information.

The optional XM Radio System provides satellite broadcast audio entertainment and information to aircraft occupants via the Garmin GMA 340 Audio System while traveling anywhere within the contiguous United States of America.

The XM receiver, installed in the co-pilot side of the center console, receives audio information via its integral antenna from two geosynchronous XM broadcast satellites. The audio signal is then sent by wire to the Audio Control Panel's Music1 and Music2 AUDIO INPUT jacks. System operation is provided by a hand held, wireless controller.

- When initially powered, the XM radio volume is set to mute and will remain muted until the XM radio establishes communication with the wireless controller.
- System volume for both AUDIO INPUT jacks is controlled simultaneously via the wireless controller.
- In the event of wireless controller failure during flight, cycling the Weather/Stormscope circuit breaker will reset the volume to mute.
- XM radio is the default audio heard on the AUDIO INPUT jacks. If a personal entertainment device such as a CD player is plugged into either AUDIO INPUT jacks, the external source will override the XM audio signal. Refer to the Intercom Modes Table presented above for a description of intercom modes.

The XM Radio System is powered by 28 VDC supplied through the 3-amp Weather/Stormscope breaker on the Non-Essential Bus.