

GARMIN International, Inc.
1200 E. 151st Street
Olathe, Kansas 66062 U. S. A.

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
FOR
MOONEY M20J
WITH
GARMIN GPS 150XL GLOBAL POSITIONING SYSTEM
Reg. No. _____ S/N _____

This Supplement must be attached to the FAA Approved Airplane Flight Manual when the GARMIN GPS 150XL Global Positioning System is installed in accordance with STC No. SA00503WI. The information contained herein supplements the information of the basic Airplane Flight Manual. For Limitations, Procedures and Performance information not contained in this Supplement, consult the basic Airplane Flight Manual.

FAA APPROVED



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SECTION I
GENERAL

1. The GPS 150XL System consists of an antenna, and a receiver including its mounting rack. The primary function of the system is to acquire signals from the GPS system satellites, recover orbital data, make range and Doppler measurements, and process this information in real-time to obtain the user's position, velocity and time.
2. Provided the GARMIN GPS 150XL navigation system is receiving adequate usable signals, it has been demonstrated capable of and has been shown to meet the accuracy specifications of Advisory Circular 20-138 for VFR flight

Navigation is accomplished using the WGS-84 (NAD-83) coordinate reference datum. Navigation data is based upon use of only the Global Positioning System (GPS) operated by the United States of America.

SECTION II
LIMITATIONS

1. A placard stating "GPS 150XL Limited to VFR Navigation only" must be installed in clear view, and easily readable by the pilot.

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SECTION III
EMERGENCY PROCEDURES

EMERGENCY PROCEDURES

1. If GARMIN GPS 150XL navigation information is not available or invalid, utilize remaining operational navigation equipment as required.
2. If "RAIM POSITION WARN" message is displayed immediately revert to an alternate means of navigation appropriate to the route and phase of flight.
3. If "RAIM NOT AVAILABLE" message is displayed in the enroute or terminal phase of flight, continue to navigate using the GPS equipment or revert to an alternate means of navigation appropriate to the route and phase of flight. When continuing to use GPS navigation, position must be verified every 15 minutes using another navigation source.
4. If external power to the GPS 150XL is lost, the system will automatically revert to its remote battery, and navigation will continue. A message will be presented to the pilot that the unit will turn off in XX seconds unless a key is pressed to continue navigation (XX is a countdown from 30). If external power is lost, the pilot's HSI display will automatically revert to NAV data. When the GPS 150XL is operating on its remote battery, the display backlighting will automatically blank to conserve power after the time interval setting on the SETUP menu. Activating any control on the GPS 150XL automatically re-enables the display backlighting for the set time-out period.

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SECTION IV
NORMAL PROCEDURES

1. DETAILED OPERATING PROCEDURES

Normal operating procedures are described in the GARMIN GPS 150XL Pilot's Guide, P/N 190-00067-80, Rev. A, dated December, 1996, or later appropriate revision.

2. SYSTEM SWITCHES / ANNUNCIATORS

An instrumentation cluster of two remote switch / annunciators used with the GPS 150XL system is located on the instrument panel in the pilot's primary field of view as illustrated below.



- (a) NAV/GPS switch/annunciator - By depressing this switch, the the GPS 150XL data and the NAV data will be alternately displayed on the pilot's HSI and selected for the autopilot/flight director input. The source of data being displayed will be annunciated on this switch with either a green NAV legend or a blue GPS legend as appropriate. If power to the the GPS 150XL is lost, the system automatically reverts to NAV selection.
- (b) GPS Message (GPS MSG annunciator) - When the the GPS 150XL has a new message, the amber GPS MSG annunciator will flash. When this occurs, press the MSG key on the the GPS 150XL to view the message. Continue to press the MSG key on the the GPS 150XL until the page you were viewing prior to pressing the MSG key is displayed.

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- (c) GPS Waypoint (GPS WPT annunciator) - When the the GPS 150XL detects that the aircraft is 15 seconds from the next programmed waypoint or turn anticipation point, the amber GPS WPT annunciator will flash and the CDI depiction on the CDI Page will be replaced by a flashing "Next dtk xxx⁰" prompt. Approximately 2 seconds before the turn anticipation point (calculated for 15 degrees of bank no wind) the GPS WPT annunciator will glow steady. Upon passing the waypoint, the annunciator will automatically extinguish.

3. PILOT'S DISPLAY

The GPS 150XL System data will appear on the HSI when it has been selected using the NAV / GPS switch described in paragraph 2 above.

4. AUTOPILOT/FLIGHT DIRECTOR OPERATION

Coupling of the GPS 150XL System steering information to the autopilot/flight director can be accomplished by engaging the autopilot/flight director in the NAV mode, with the NAV/GPS switch set to GPS.

When the autopilot/flight director system is using course information supplied by the GPS 150XL System, and the course pointer is not automatically driven to the desired track, the course pointer on the HSI must be manually set to the desired track (DTK) indicated by the GPS 150XL. For detailed autopilot/flight director operational instructions, refer to the FAA Approved Flight Manual Supplement for the autopilot/flight director.

NOTE: When the autopilot/flight director is using data supplied by the GPS 150XL and the GPS 150XL is in Route mode, the course Pointer must be reset to the new desired track (DTK) at each route leg change.

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SECTION V
PERFORMANCE

No change.

SECTION VI
WEIGHT AND BALANCE

See current weight and balance data.

SECTION VII
AIRPLANE & SYSTEM DESCRIPTIONS

See GPS 150XL Pilot's Guide for a complete description of the GPS 150XL system.