

Avidyne Corporation  
55 Old Bedford Road  
Lincoln, MA 01773

**FAA Approved**  
**Airplane Flight Manual Supplement**  
**For**  
**Cirrus Design Corporation Model SR20/SR22**  
**With**  
**Avidyne FlightMax EX-Series (700-00004-XXX-())**  
**Multi-Function Display**  
**With**  
**Software Part Number 530-00117-000**

**Registration No.** \_\_\_\_\_

**Serial No.** \_\_\_\_\_

This supplement must be attached to the applicable FAA Approved Airplane Flight Manual when an Avidyne FlightMax EX-Series 700-00004-XXX-() Multi-Function Display (MFD) is installed in accordance with STC SA00143BO. The information contained herein supplements or supersedes the basic manual only in those areas listed. For limitations and procedures not contained in this supplement consult the basic Airplane Flight Manual.

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Robert G. Mann, Manager  
Boston Aircraft Certification Office  
Federal Aviation Administration  
Burlington, MA

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### LOG OF REVISIONS

<i>Revision Number</i>	<i>Revised Pages</i>	<i>Description of Revisions</i>	<i>FAA Approval</i>	<i>Date</i>
(-)	ALL	Initial Release		1/15/02
A	1,2	Corrected Software Release Number	 1/31/02 Robert G. Mann Mgr, Boston ACO	1/31/02
B	1,3,4,5, 7,10,11	Added Engine Instrument Page	Robert G. Mann Mgr, Boston ACO	

A vertical black line in the margin shows revised portions of affected pages.

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## Section 1 – General

The airplane is equipped with an Avidyne FlightMax EX-Series 700-00004-XXX-() Multi-Function Display, herein referred to as the “MFD.” The MFD is a 10.4” landscape-oriented display intended to be a supplemental display of situational and navigation information to the pilot. Its primary function is to provide a moving map display to the pilot for increased situational awareness. The MFD is capable of accepting data from a variety of GPS sensors, the BFG WX-500 Stormscope passive thunderstorm detection unit, Engine Sensor Unit, and either the BFG Skywatch Traffic Advisory System (TAS), or the Ryan Traffic and Collision Alert Device (TCAD) system. The unit is organized around logical groupings of information presented on “Pages”.

The **MAP** page is the primary page and presents the pilot with aircraft position and flightplan and nearby lightning and traffic. This data is overlaid on a moving map background of terrain, inland and coastal water bodies, airspace, airports and navigational aids. Buttons and knobs on the MFD bezel allow the pilot to control the amount and presentation style of information on the moving map.

### CAUTION

When the Map view is set to North Up, traffic and weather depictions are oriented north up, which may cause confusion. Pressing the View bezel key will cycle the Map display to a heading up orientation. If a Traffic Advisory (TA) occurs, pressing the Message Ack bezel key will display a heading up traffic display and suppress the display of other, non-traffic items.

The **TRIP** page provides the pilot with the remaining legs of the active flight plan in tabular format. There is additional navigational data provided on this page in graphic and numeric form to aid the pilot in understanding aircraft position relative to the active flight plan. The gallons of fuel remaining at each waypoint is provided, if the optional engine instruments interface is installed.

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The **NEAREST** page provides a list and relative position of navigational items of interest to the pilot, including airports and nav aids. Here, the pilot has the ability to get more detailed information on an item of interest via the **INFO** Page.

The **CHECKLIST** pages provide the pilot with electronic checklists that are make and model specific. These checklists include the POH Normal Procedures checklists, POH Emergency Procedure checklists, and some POH Performance Data and Charts.

The **SYSTEM SETUP** pages allow the pilot to set user preferences for the display and view the on-board database version identification and validity dates.

The optional **ENGINE** page displays engine, electrical system, and fuel parameters, including RPM, MAP, % Power, Oil Temperature, Oil Pressure, OAT, EGT, CHT, alternator and battery currents, bus voltage(s), and fuel totalizer.

The **INITIAL FUEL** page is automatically accessed at startup and is accessible from the engine page. The user can input Fuel Fill, Fuel to Tabs, or a specific amount of fuel added to the existing fuel on board. This page is only available with the engine instruments option.

Figure 1 depicts the Avidyne FlightMax EX-Series 700-00004-XXX-().



Figure 1 – Avidyne FlightMax EX-Series 700-00004-XXX-()

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## **Section 2 – Limitations**

1. The Avidyne moving map display provides visual advisory of the airplane's GPS position against a moving map. This information supplements CDI course deviation and information presented on the GPS navigator. The moving map display must not be used as the primary navigation instrument.
2. Use of Map page during IFR flight requires an IFR approved GPS receiver and installation, operated in accordance with its applicable limitations.
3. Under no circumstances should the Map page terrain color representations be used as a basis for terrain avoidance.
4. The Avidyne electronic checklists display supplements the Pilot Operating Handbook checklists and is advisory only. The electronic checklists must not be used as the primary set of on-board airplane checklists. FAA Approved Flight Manual paper checklist must be on-board the aircraft.
5. The MFD integrates with separately approved sensor installations. Adherence to limitations in appropriate installation AFM supplements is mandatory.
6. Traffic information shown on the Map page display is provided to the pilot as an aid to visually acquiring traffic. Pilots should maneuver their aircraft based only on ATC guidance or positive visual acquisition of the conflicting traffic. Maneuver should be consistent with ATC instructions. No maneuvers should be made based only on a Traffic Advisory.
7. The Avidyne FlightMax EX-Series Pilot's Guide, P/N 600-00072, Revision 03, or later appropriate revision, must be available to the pilot during all flight operations.

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**Section 3 – Emergency Procedures**

None.

**Section 4 – Normal Procedures**

**To Activate the MFD:**

1. MFD circuit breaker ----- IN
2. Battery Master Switch ----- ON
3. Avionics Power Switch ----- ON
4. At MFD prompt-----Press any key
5. MFD -----Set for desired operation

**To Deactivate the MFD:**

1. Avionics Power Switch ----- OFF

**Or**

1. MFD Circuit Breaker ----- OUT

**Section 5 – Performance**

No change from basic Handbook.

**Section 6 – Weight and Balance**

No change from basic Handbook.

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## **Section 7 – Systems Description**

### **Note**

This supplement provides a general description of the Avidyne FlightMax EX-Series 700-00004-XXX-() MFD, its operation, and SR20/SR22 interface. For a detailed description of the MFD, refer to the Avidyne FlightMax EX-Series Pilot's Guide and Reference, P/N 600-00072, Revision 03, or later.

### **Navigation**

Data associated with the moving map is found on four pages: Map, Nearest, Trip, and Info pages. The MFD contains a Jeppesen NavData database that is available for display on the Map page. In conjunction with GPS-supplied position information, an ownship symbol is superimposed on the moving map and positioned relative to the NavData information. GPS can also supply the active flight plan for display on the moving map. Terrain data is provided by a USGS terrain database stored within the MFD and updated only on an as-needed basis.

The Jeppesen Navigation Database provides data on airports, approaches, VORs, NDBs, intersections, airspace definitions, and frequencies. North American and international databases are available. Database information can be updated via the USB port on the front face of the bezel.

The navigation data on the moving map display are based on databases that are updated periodically. Database updates are available from Avidyne on 28-day cycle subscriptions. Expired databases are clearly stated to the pilot via messages during system startup and on the System Setup page. The warning can only be removed by updating the data.

NOAA manmade obstruction database information provides data on manmade obstacles over 200' AGL. This data is only available for

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North America and can be updated via the USB port on the front face of the bezel.

The obstacle data on the moving map display are based on databases that are updated periodically. Database updates are available from Avidyne on 56-day cycle subscriptions. Expired databases are clearly stated to the pilot via messages during system startup and on the System Setup page. The warning can only be removed by updating the data.

Using the Jeppesen NavData data and the GPS-supplied present position, the MFD can provide the pilot with the nearest 25 airports or nav aids, depending on pilot selection, within 100 nm. This information is presented on the Nearest page.

More detailed information on a particular airport is also generated from the Jeppesen NavData data and is available for pilot viewing on the Info Page.

Flightplan data supplied by the GPS system provide the pilot with a tabular form of the remaining legs in the active GPS flight plan. This information is viewed on the Trip page and includes a CDI for added enroute navigation aiding.

Flight Plan data is transmitted to the MFD from an external GPS navigator. Some installations do not support depictions of curved flight paths. In these cases, curved flight path segments will be depicted as straight lines. The GPS navigator and HSI are to be used during approach procedures. Reference the Avidyne FlightMax EX-Series Pilot's Guide, P/N 600-00072, for more information.

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## **Checklist**

The Normal and Emergency procedures checklists in the MFD are interactive in nature such that the pilot is able to check off each step as it is accomplished and thereby keep a visual record of what steps have been accomplished. Other features in the interactive checklists are the ability to un-check a specific checklist step, reset the entire checklist, and get confirmation of a completed checklist.

The following Normal Procedures checklists are provided in electronic format via the Checklist page of the MFD:

1. Before Takeoff;
2. In Flight;
3. Landing/Shutdown;

The checklists steps and content are the same as those found in the POH except that Notes, Warnings, and Cautions have been eliminated.

The following Emergency Procedures checklists are provided in electronic format via the Checklist page of the MFD:

1. POH Ground Emergencies;
2. POH In-flight Emergencies;
3. POH Landing Emergencies;
4. Emergency Airspeeds;
5. POH System Malfunctions.

The checklists steps and content are the same as those found in the POH except that Notes, Warnings, and Cautions have been eliminated.

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The following POH Performance Data and Charts are provided in electronic format via the Checklist page of the MFD:

1. Airspeeds for Normal Operations;
2. Crosswind Chart;
3. Takeoff Distance Chart;
4. Some Cruise Settings;
5. Landing Distance Chart.

### **Setup**

The various System Setup pages allow the pilot to set user preferences for system operation. In addition to listing the software version identification information and database validity dates, the System Setup pages allow access to several pages for preference selection and provides a means to initiate self tests of the traffic and lightning sensors.

**Airport Settings** page provides selections for displaying airport type, runway surface type and minimum runway lengths on the moving map. **Declutter Settings** page allows the pilot to select settings for defining the base map detail when changing display range. **System Time** page provides an opportunity to select system time zone and Map page menu timeout options. **DataBlock Edit** page allows the pilot to select the data to be displayed in the datablock windows on the Map page.

### **Engine Instruments**

The Engine page provides the pilot with engine parameters depicted on simulated gauges and electrical system parameters located in dedicated regions within the MFD display. An Engine Sensor Unit interfaces with engine-mounted sensors, some of which are shared with the standard aircraft gauges, and provides data to the MFD for display.

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A leaning function assists the pilot in leaning the engine for best power or best fuel economy. This is initiated by pressing the Lean Assist bezel key, and proceeding to lean the engine mixture. After the first cylinder EGT peaks, the pilot richens the mixture for best power. After the last cylinder EGT peaks, the pilot leans the mixture further for best fuel economy. A digital readout of EGT change from the peak value is provided for reference.

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