VANTAGE12

Flight Display System

P/N 600-00361-000 REV00

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Avidyne Vantage12 Quick Reference Guide

AviOS 12.0.0.2

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MFD Overview

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PFD - NAV Display Controls

LSK1
LSK2
LSK3

1

Use '**Primary Nav**' button (LSK1) to select the source driving the CDI (and autopilot) within the HSI. The sources can be:
 -GPS#1
 -GPS#2
 -NAV#1
 -NAV#2

2

Use **Bearing Ptr** button (LSK2) to turn on the cyan-colored bearing pointer and select the bearing pointer source:
 -Off
 -GPS#1
 -GPS#2
 -NAV#1
 -NAV#2

3

Use the **View** button(LSK3) to cycle the Horizontal Situation Indicator (HSI) display for either a 360-degree circle or 200-degree arc on the bottom half of the PFD pages.

PFD - Synthetic Vision

LSK4

1

 The **SynVis** button (LSK4) defaults to 'FPL' and the current flight plan is depicted as a magenta line projected on the 3D SVS scene.

2

Push the **SynVis** button (LSK4) to have SynVis 'On' without the magenta flight plan line and shadow.

3

Push the **SynVis** button (LSK4) again to turn SVS 'Off' and to show a standard blue-over-brown attitude display, which may be useful, especially during training flights. (Cycle LSK4 again to return to SVS with flightplan.)

ⓘ *Horizontal & Vertical deviation scales appear during Instrument and Visual Approaches*

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PFD - Setting ALT & HDG Bugs

Push LSK 5 on the PFD to select left & right knob functions. The default setting is ALT & HDG respectively.

LSK5

1

Set ALT BUG

Turn the left knob to adjust the Altitude bug in 500' increments. Push and turn for 100' increments.
- or-
Touch the magenta Altitude box above the Altimeter on the PFD to change the bug value using the pop-up keyboard. Enter the desired altitude and select ENTR to apply.

2

Set HDG Bug

Turn the right knob to adjust the Heading bug in 10° increments. Push and turn for 1° increments.
- or-
Touch the Hdg Sel box on the PFD to change the bug value using the pop-up keyboard. Enter the desired Heading, and select ENTR to apply.

i *Alternatively, all bug settings (ALT, HDG, IAS, VS) can also be set by touching and dragging the respective bug to the desired setting.*

PFD - Adjusting HSI Course & Baro Setting

Push LSK 5 on the PFD to change left & right knob functions to CRS & Baro respectively. (When LSK5 has CRS/BARO selected, the function will revert back to ALT/HDG after 5 seconds of inactivity.)

LSK5

1
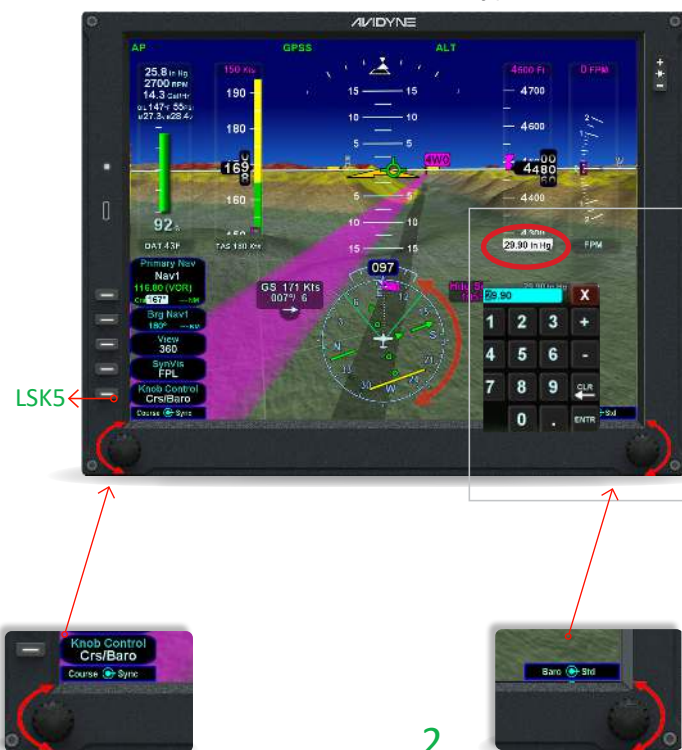
Push LSK5 to select **CRS/Baro**, turn the left knob to adjust the HSI course pointer.

2

To input a new Baro setting push LSK5 for **CRS/Baro**, turn the right knob to adjust the Baro as shown in the Baro window.
-or-
Touch the Baro readout box below the Altimeter on the PFD to change the Baro value using the pop-up keyboard. Enter the desired Baro and select ENTR to apply.

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PFD - Setting IAS & VS Bugs

DFC90

1 Set IAS Bug

The primary location for setting IAS bug is via the dedicated IAS knob on the DFC90 autopilot control head.

The IAS target can optionally be set via the Vantage12 touchscreen by touching the IAS target readout above the IAS tape and using the pop-up keyboard to enter.

2 Set VS Bug

The primary location for setting VS bug is via the dedicated VS knob on the DFC90 autopilot control head.

The VS target can optionally be set via the Vantage12 touchscreen by touching the VS target readout above the VS indicator and using the pop-up keyboard to enter.
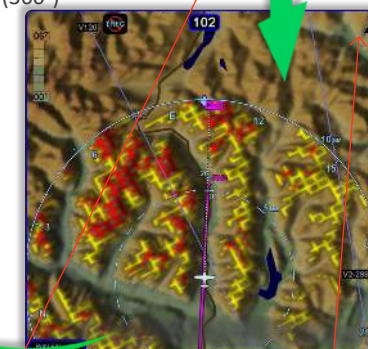
MFD - Changing Map View

MAP **MAP**

Current Heading

Indicates 'North Up'

North Up (360°)

TRK Up (360°)
or HDG Up (360°)

TRK Up (240° arc view)
or HDG Up (240° arc view)

To change Map View (orientation), **PUSH** the inner right knob, which will cycle the Map between three different views:
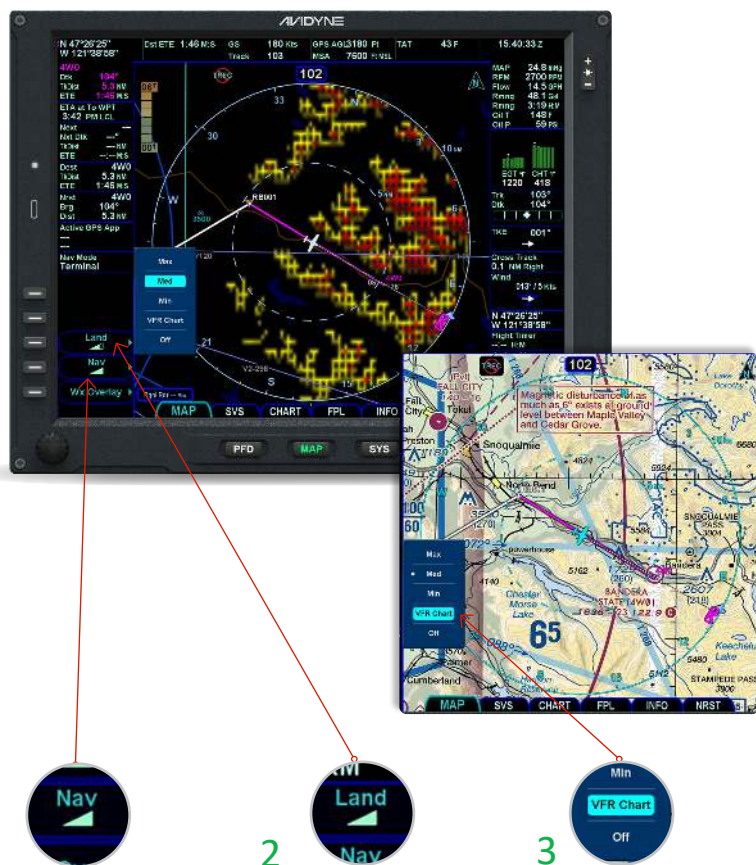
North Up (360°) --> HDG/Track Up (240° arc) --> HDG/Track Up (360°)

Map Orientation - North Pointer

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MFD - Map Declutter Settings `MAP` `MAP`

MFD - Map Wx Overlay `MAP` `MAP`

1

Push "**Nav**" LSK4 to declutter navigation data such as navaids, Intersections, airports, etc.

There are four levels of declutter for Nav.

2

Push the "**Land**" LSK3 to select the level of declutter of the terrain base map.

There are four levels of declutter for Land. The specified level of detail will remain consistent across all map pages.

3

The "**Land**" declutter menu (LSK3) also includes a VFR chart map as an optional base Map, and is only available in North Up Map

ℹ️ *Nav features shown at each Nav Declutter setting can be modified in AUX-->SETUP-->Map.*

1

Push "Wx Overlay" LSK5 to bring up a menu of available datalink weather products that can be displayed on the Map.

2

Touch the Weather Layer menu and choose the data you wish to have displayed. These are mutually exclusive and cannot be combined on the same map.
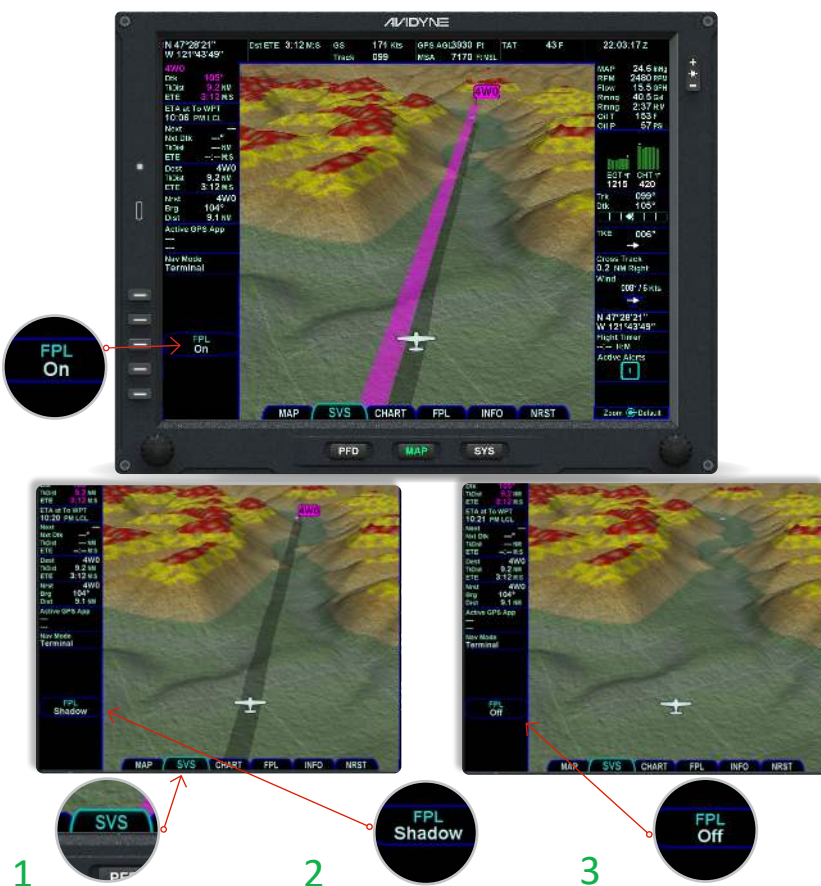
A scroll bar to the right of the menu indicates additional products are available. Touch and pan the menu to view more.

3

Scroll the Overlays menu to choose the data you wish to have displayed. Multiple overlays can be selected.

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MFD - Synthetic Vision   MAP SVS

FPL On

SVS

1

Select the 'SVS' Tab on the MAP page on the MFD to view 3D Exocentric Synthetic Vision , which includes 3D Terrain, Obstacles, Traffic (when available), and Airports. Turning the bottom right knob or pinch zooming the display will adjust the perceived distance above and behind the ownship symbol.

FPL Shadow

2

Push the FPL button (LSK3) to turn off the magenta flight plan track line and just have the shadow (which represents aircraft position over the ground). (The flight plan track line will not appear unless your aircraft is 1,000 ft AGL or greater, and will disappear as you descend below 1,000ft.)

FPL Off

3

Push the FPL button again to remove both. A subsequent push of the FPL button will turn the magenta line back On.

Yellow hash pattern appears for terrain 1,000 ft below to 100 ft below and Red hash pattern appears for terrain 100 ft below to anything above your present AGL altitude.

MFD - Appr. Charts/Airport Diagrams   MAP CHART

1
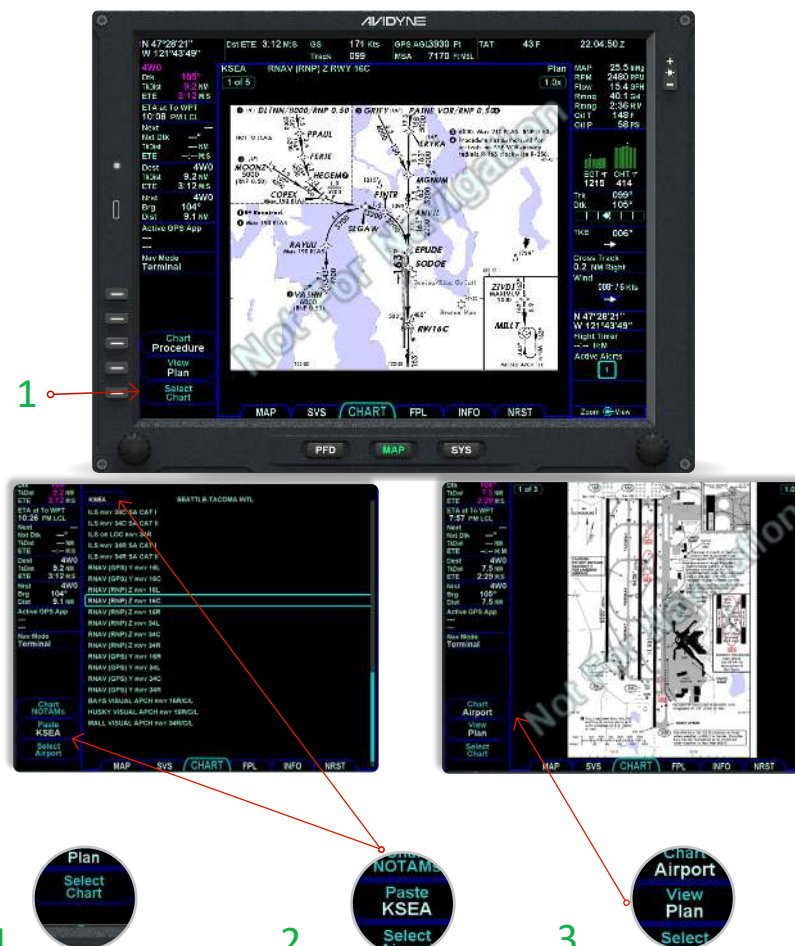
Plan Select Chart

1

Go to the **Chart** tab to view Approach Charts and Airport Diagrams that are in the database. Push '**Select Chart**' (LSK5) and enter an Airport identifier.

NOTAMs Paste KSEA Select Airport

2

Or push '**Paste**' (LSK4) if an airfield is in the active flightplan.

Once chart is loaded, use LSK4 to change the chart '**View**.'

Chart Airport View Plan Select

3

Once a chart is loaded, use '**View**' LSK4 to cycle from Plan to Header to Profile to Minimums to All.

Use the "**Chart**" LSK3 to switch between Airport Diagram and Procedure.

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MFD - Split Map & FlightPlan

MAP **FPL**

1

While you can always enter the flightplan directly into your IFDs and they will appear here, you can also enter and edit flightplans from the Vantage12 MFD MAP Page, "FPL" tab.

A split screen Map +FPL page will appear with the origin waypoint pre-populated. Edits made here will appear on the IFDs in real time.

2

Use the LSKs and left knob to change map overlays, declutter settings, map range etc. as described previously.
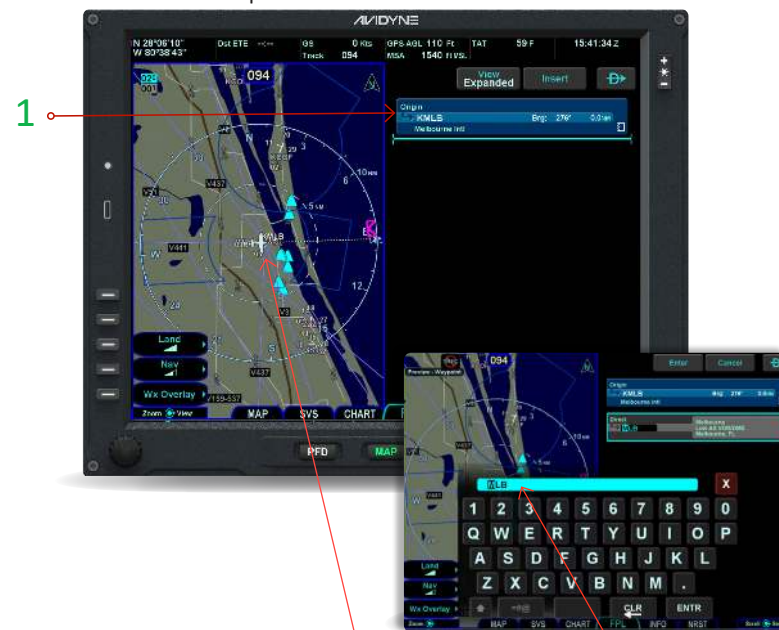
3

Use the right knob and/or the touch screen to control and edit flightplans on the right half of the display.

MFD - Entering a Flightplan

MAP **FPL**
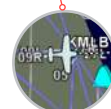
Example: KMLB.MLB.V3.VRB.LBV.KFMY

1

When entering a new flightplan, the origin will be the closest airport to the current GPS position, or the airport from the previous power down if GPS position has not locked on yet.

2

The moving map on the left side of the display will show aircraft position on the departure airport, and will graphically present each waypoint in your flightplan as you add them.

3

Tap the black space below the insert cursor and Geofill™ will nominate the nearest Navaid (in this case MLB).

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MFD - Entering an Airway

`MAP` `FPL`

Example: KMLB.MLB.V3.VRB.LBV.KFMY

1

Tap the black area of the screen to bring up the FMS dropdown. Scroll down the list to see the available airways that pass through this waypoint .

Scroll with the right knob or use touch to highlight the desired Airway from the menu.

Tap or push 'Enter' to select.

2

An **Airway Preview** will appear on the map as you scroll through the available airways provding you with visual feedback that you are selecting the desired Airway.

3

Then select the appropriate Exit Point from the Menu.

Tap or push 'Enter' to select.

Your Airway with all intermediate waypoints will now appear in your flightplan.

MFD - Inserting a Waypoint

`MAP` `FPL`

Example: KMLB.MLB.V3.VRB.LBV.KFMY

1

To add a waypoint to your flightplan, tap the empty space below the Insert cursor. An FMS menu appears. Tap or use 'Entr' key to select 'Waypoint' (or push the right knob.)

2

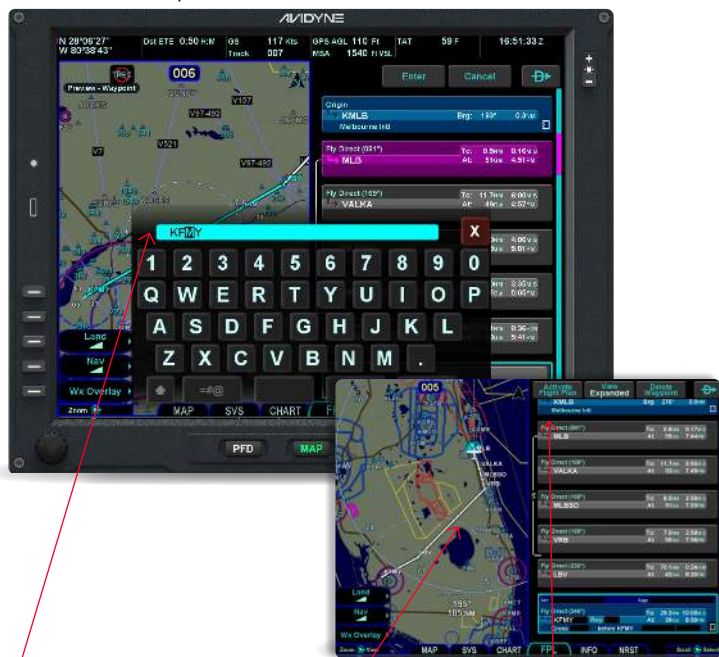Use the right knobs or the pop-up keyboard in order to enter the desired waypoint identifier.

3

Push the right knob, push ENTER, or tap the ENTR key on the pop-up keyboard to enter the new waypoint into the flight plan.

Continue these steps to build your full flightplan.

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MFD - Entering Destination Airport `MAP` `FPL`

Example: KMLB.MLB.V3.VRb.LBV.KFMY

1

Repeat previous steps to enter the destination airport. You will notice that in most cases GeoFill™ will nominate the correct airport immediately or after one or two characters are entered.

2
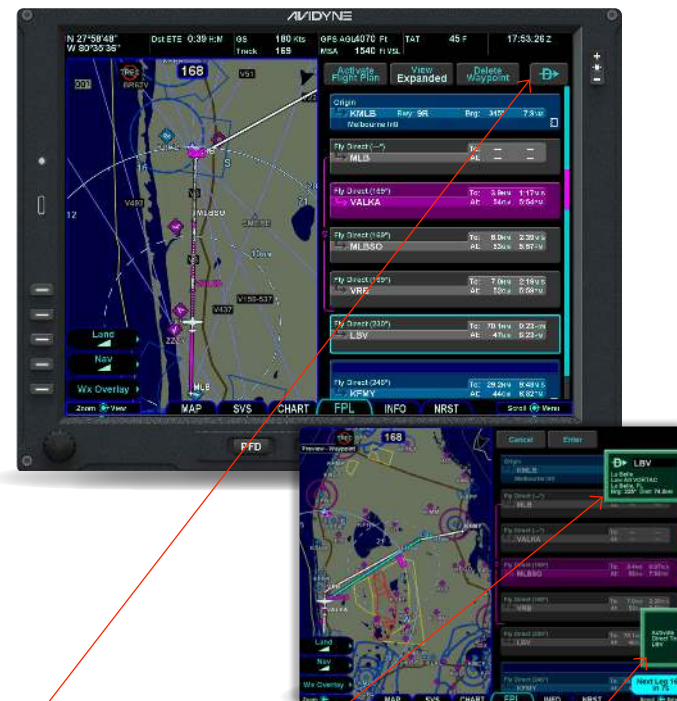
Zoom the map to view the entire flightplan,

3

To approve, push 'Activate FlightPlan' when ready.

(Flightplan will automatically activate when ground speed increases above 40kts.)
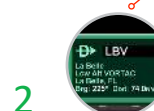
MFD - Direct-To Operation `MAP` `FPL`

Example: "You are cleared Direct to LBV."

1

Push the Direct-To button to display a green Direct-To dialog box pre-populated with the waypoint highlighted in your current flightplan.

2

Push 'Enter' to accept or to optionally enter a different waypoint, tap the data field in the top dialog box and use the pop-up keyboard to enter the desired waypoint identifier.

3

Push Enter to select, then tap the 'Activate' dialog box to select.

Push the right knob can also be used to confirm.

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MFD - Entering A Hold

MAP **FPL**

Example: "Hold at LBV on the 050 radial."

1

To enter a hold, tap below the waypoint of interest to display the drop down menu of options.

Highlight "Hold at" and tap to select (or push the right knob).

2

Use touch screen or inner right knob to highlight and edit the inbound leg course (reciprocal of the assigned radial).

A Procedure Preview of holding pattern appears on Map.

3

Select 'Exit Hold' to exit hold at the fix. A blue CAS message will alert you.

To continue to hold, select "Continue Hold" on the IFD LSK1)

4

To delete the hold from your flightplan at anytime, you can select "Delete Hold."

MFD - Selecting an Approach

MAP **FPL**

1

To display the Approach field of the destination Airport, use the touch screen or the small right knob to move the edit cursor to the 'Appr' window.

2

This will display a drop-down list of available published approaches. To select the desired Approach, turn the right knob to scroll, then push to select, or tap the highlighted selection. A Procedure Preview will be shown on the Map of each Approach when highlighted. To select the Transition,

3

turn the right knob to scroll, then push to select, or tap the highlighted selection.

ⓘ *Alternatively, you can choose to load the Approach from the IFD using its 'PROC' key.*

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MFD - Selecting a Visual Approach

MAP FPL

1 To select a Visual Approach for your destination airport, tap the screen or the small right knob to move the edit cursor to the 'Appr' window of the destination airport.

2 To select the desired Visual Approach, turn the FMS knob to scroll down past any published IFR approaches to see the available Visual Approaches, then push to select, or tap the highlighted selection.

3 Then select the Visual Entry, (Straight In, Left Base, Right Base, Left Downwind, Right Downwind) that works best for your direction of flight and approach angle.

ⓘ Go to SYS Page -> 'Setup' Tab->FMS->Visual Approach Settings *to set the desired Glideslope Angle. The default setting is 4° but it can be set to any angle between 3° and 5° in 0.1° increments.   Glideslope must be set to desired angle BEFORE loading the Visual Approach. Remember you are still flying a VFR approach and proper clearance and separation must be observed for the terrain in the area.*

MFD - Enter a Departure Procedure

MAP FPL
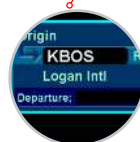
1 Tap the 'Departure' field. A dropdown list of available departure procedures will be displayed.

Select a departure name and push ENTR.

2 Highlight and Enter the assigned Transition.

3 Enter assigned departure runway (if more than one option is presented).

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MFD - Enter an Arrival Procedure

MAP   FPL

MFD - Info Tab

MAP   INFO

1

Tap the '**Arrival**' field on the destination airport. A dropdown list of available Arrivals will be displayed.

Select the desired Arrival and push ENTER.

2

Highlight and Enter the assigned Transition.

3

Add RWY and Load approach when assigned.

1

Enter any Airport or Navaid identifier here to view all of its pertinent information in the database.

Scroll or tap on each data section to open and view more data.

2

Pushing the '**Paste**' softkey will immediately change the contents of the identifier field, (typically the next airport in the flight plan).

3

To look up a specific Airport or Navaid identifier in the database, push the '**Search**' softkey, touch the data field and enter City and/or State to view pertinent information.
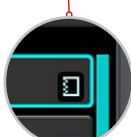
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MFD - Nearest Tab

`MAP` `NRST`
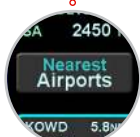
1

Tap the 'Nearest' LSK to cycle through all the Nearest airports and Navaids by data type including: Airports nearest you, Apts nearest to Dest, VORs, NDBs, INTs, ARTCCs, FSS, User Wpts, and Airspace.

2

Touch or scroll to the "i" info symbol to switch to the Info Tab which will provide additional information on the selected facility.

3

Touch or scroll to highlight the chart icon, double tap or push right knob to view the available Charts for the selected airport.

MFD - Checklist Tab

`SYS` `CHKLST`

1

Use the right knob to scroll or the touch screen to highlight the desired checklist (Preflight, Before Start, Start, Before Taxi, Before Takeoff, etc), then push the knob to expand the sub-checklist.

2

Push the knob or double tap the touchscreen to select the desired checklist, then use the knob push action (or tap the touch screen) to complete or "un-complete" a step.

2

Each completed step and section will turn green, which gives you a clear visual indication that all required checklist steps have been accomplished.

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MFD - Engine Instrumentation

SYS ENG

MFD - Lean Assist - Best Power

SYS ENG

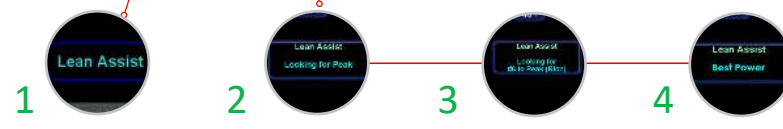| Lean Assist LSK
(see Page 29/30) | 1 | EGT/CHT Datablock | 8 |
Temps LSK (Switch between Absolute & Normalized)	2	Right Side Configurable Datablocks	9
Left Side Configurable Datablocks	3	Outside Air Temp (OAT)	10
Electrical System Monitor	4	Exhaust Gas Temp (EGT)	11
Digital Engine Instruments	5	Initial Fuel Entry	12
Fuel Totalizer	6	Cylinder Head Temp (CHT)	13
Engine Instrument Datablock	7	Density Altitude (DALT)	14

i The exact fields displayed in the Electrical block may vary slightly from the image above for various different aircraft types. For example, the SR22T will include an additional TIT gauge. Refer to full Pilot's Guide for additional information.

1
To lean the engine for **Best Power**, begin by pushing "Lean Assist" and smoothly lean the mixture control.

2
The display shows "**Looking for Peak**" in the Lean Assist Status box.

When leaning for Best Power, the final mixture setting is based on the *first* cylinder to peak, indicated by a '**Peak Detected**' message.

3
Then enrich mixture, the display first annunciates "**Looking for #x to Peak (Rich)**", then "**Peak Detected (Rich)**" as it displays the '**Degrees rich of peak**' temperature.

4
Finally, "**Best Power**" displays when the optimum best power mixture has been achieved.

Exit the Lean Assist function by pushing "Lean Assist".

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MFD - Lean Assist - Best Economy

1

To lean the engine for **Best Economy**, ensure the power is below 75%.

Push "Lean Assist", and smoothly lean the mixture control.

2

The display shows "**Looking for Peak**" message which will eventually change to "**Looking for Last Peak**" as the leaning continues.

3

Continue slowly leaning after "**Last Peak Detected**" is displayed until "**Best Economy**" has been achieved

4

Exit the Lean Assist function by pushing "Lean Assist".

i It is very important that you adjust the mixture slowly and continuously. Leaning the mixture too quickly can disrupt the system's ability to accurately track the peak EGT and could result in a mixture setting that can damage the engine. Always be sure to monitor Oil Temperature and CHT readings to ensure they stay within specified limits. If, at any time during the Lean Assist process, the engine begins to run roughly, enrich the mixture slightly until the roughness abates.

MFD - Reversionary PFD

1

If PFD functionality is compromised, the Vantage12 system is designed with a reversionary mode that allows the MFD to assume the role of the PFD.

2

Use the '**PFD**' button on the MFD to manually select reversionary mode.

The SVS Tab provides a full screen PFD. Operation remains identical in this mode.

3

Loss of PFD or MFD will have no effect on DFC90 autopilot operations or the ability to command the autopilot into any mode or target value.

i Refer to Vantage12 Pilot's Guide for full details on failure modes.

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MFD - PFD/Map Split Screen

`PFD` `MAP`

1
Switch to the 'Map' tab to get a split PFD/MAP view.

All PFD controls operate the same, except 'LSK5' now cycles the left knob function for setting HDG/ALT/CRS/BARO.

(Button labels hide after five seconds to show Engine data.)

2
Data can be displayed across the top datablock strip.

3
Buttons across the top of the map allow separate control of the information density of Map including Land (Base Map), Nav (navaids etc), and Wx Overlay.

These operate identically to the LSK function in normal Map mode.

4
Use the right knob to Zoom in or out on the Map (or use pinch gesture on touch screen).

Push right knob to change Map orientation (View).

MFD - PFD/Chart Split Screen

`PFD` `CHART`

1
Switch to the 'CHART' tab to get a split PFD/Chart view.

Again, all PFD controls operate the same, except 'LSK5' now cycles the left knob function for setting HDG/ALT/CRS/BARO.

(Button labels hide after five seconds to show Engine data.)

2
Data can be displayed across the top datablock strip.

3
Buttons across the top of the Chart provide for chart selection and different views.

These operate identically to the LSK functions in normal Map-Chart page.

4
Use the right knob to Zoom in or out on the Chart (or use pinch gesture on touch screen).

Push right knob to change Chart View.

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Updating Vantage12 Databases

1

Insert USB-C Flash Drive in USB Port while power is turned off. Turn power on. Vantage displays will Power up in Maintenance Mode.

(USB-C Flash Drive must be formatted to FAT32 and should have your appropriate databases loaded already.)

2

Use right knob to select Data file(s) to be transferred to the Vantage display. Turn the knob to highlight, then push to select each data type. A green Check Mark will appear by each. highlighted selection. Push PROCEED line select key (LSK).

3

Once you see "OK" next to each selected Data file, push DONE button on screen when complete, and the display will restart in normal flight mode.

Repeat for each Vantage display.

Note IFDs and Vantage displays need to have the same NAV data cycle.

i

You will notice that this operation puts the Vantage display into Maintenance Mode. You can also download Maintenance Logs from this page and more. Updates must be performed in accordance with FAR Part 43, Appendix A. Please use caution so as not to inadvertently change port settings or other configurations, For Tech Support and Training information, see back cover.