



ENTEGRA RELEASE 9

INTEGRATED FLIGHT DECK



INTRODUCING ENTEGRA RELEASE 9

At Avidyne, we are driven to create a cockpit in which the most powerful aviation technologies are harnessed by a simple, intuitive user interface.

The result?

Welcome to *Entegra* Release 9, Avidyne's powerful, simple, intuitive and truly integrated flight deck system.



FLYING MADE SIMPLE

Entegra Release 9 features large-format, ultra-reliable LED-backlit displays — the first to be truly interchangeable for use as PFD or MFD. Since each Integrated Flight Display (IFD) is fully capable of performing the functions of the other, no unfamiliar or limited reversionary modes are required. So you can **train as you fly and fly as you train.**

The fully-integrated, all-digital WAAS Gamma 3 COM/NAV/Surveillance (CNS) suite is managed with the intuitive FMS900w, while dual redundant databus interconnection automatically synchronizes data between displays, the FMS Keypad and a full complement of safety sensors.



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DUAL-REDUNDANT PEER-TO-PEER DATABUS

A true dual-redundant peer-to-peer databus, such as that developed for use in Avidyne's *Entegra* integrated flight deck, means that critical sensor and computation modules are not "daisy-chained" together in a manner that can create cascading failures. With a true dual-redundant peer-to-peer databus, single-point failures remain just that, single point failures. They do not adversely affect other vital, otherwise operational functionality.

INTEGRATED FLIGHT DECK

PRIMARY FLIGHT DISPLAY PAGE



FLIGHT MANAGEMENT SYSTEM PAGE



MAP PAGE



SIMPLICITY

As pilots, we depend on our good judgment, training and situational awareness.

Now we can enjoy the power of *Entegra* Release 9, with Avidyne's exclusive, easy-to-learn, easy-to-use pilot interface that reduces workload and enhances safety. *Entegra* Release 9 provides easy access to all critical flight information in a simple "page and tab" format without complex functions, modes or submenus.

So go ahead, say goodbye to the complex page structures, multi-day training courses, inches-thick user guides and "secret handshakes" required by previous generation avionics.

Access to any of *Entegra* Release 9's powerful capabilities is as simple as pressing the desired bi-directional page key. The various display options within a page are represented as tabs. Pressing the same key in a desired direction navigates through the tabs.

Congratulations, you just learned how to use *Entegra* Release 9.

Intuitive. Simple. Safe.

SYSTEM PAGE



CHECKLIST PAGE



FLIGHT PLAN ENTRY MADE SIMPLE

Designed for the second century of flight, the all-new *Entegra* FMS900w Flight Management System (FMS) delivers highly-advanced, yet easy-to-use FMS capability for single-pilot IFR flight.

Creating and editing Flight Plans is quick and intuitive with *Entegra* Release 9. All basic functions are easily accessible through the bezel controls or through the optional ACD215 Control/Display Unit. All FMS operations can be performed without removing your hand from the knob of the IFD. All drop-down menus are context sensitive and choices are displayed in a prioritized order. Even the cursor is context sensitive and provides a clear indication of



Graphical METAR flags for each leg of the flight plan provide at-a-glance weather updates all along the route. CMax electronic approach charts can also be instantly accessed for any airport in the flight plan. An "I" inside the Chart icon indicates that there is an ILS approach available.

whether the operation is intended to insert a leg or to modify an already existing waypoint. This avoids the use of menus and provides a completely intuitive method for performing basic editing functions.

GEOFILL™ REDUCES DATA ENTRY TIME

GeoFill intelligently predicts the next leg or waypoint on your flight—not based on its order in the database, but on its proximity to your current location or the previous waypoint in your flight plan—eliminating the fumbling through irrelevant NAVAIDs common to other systems. Auto-filling the remaining characters in the entry—based upon distance from the current position and avoiding the cumbersome need to go through obviously “bad” choices (too far away) to get to the desired entry—



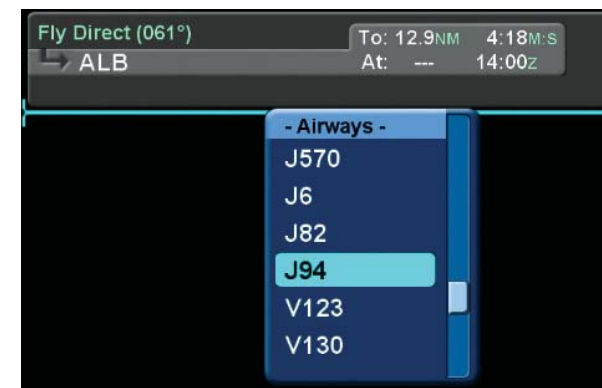
As an example, the logical GeoFill choice based upon the existing route is HNK rather than an irrelevant waypoint such as HM – Haneida NDB in Japan which an older system would have suggested because it is alphabetically ahead in the database.



The segmented magenta line makes it very easy to see the next leg in the flight plan.

dramatically reduces the number of pilot actions. In fact, there is a high probability that it will display your desired waypoint on the initial suggestion.

AIRWAYS & PROCEDURES



Airway flight planning is easily performed via the FMS900w’s simple-to-use drop down menu system. After entering the ‘TO’ waypoint, the VIA edit field will drop down and display all airways and procedures (Victor, Jet, and Q routes) that contain the entered fix (as shown in the image above). Rotating either knob will move the cursor through the list and selecting (pushing the rotary knob) will select the airway and prompt for the termination fix. If the termination fix is already the next waypoint in the route, the FMS will automatically link the airway to that waypoint and close up all menus.

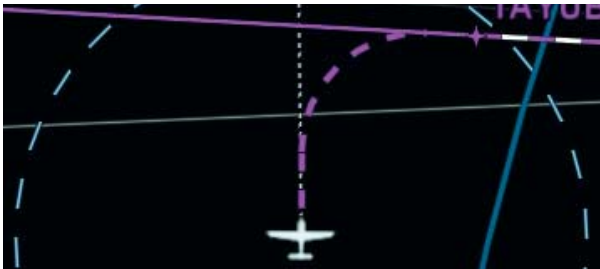
With the FMS900W’s Airway Flight Planning, combined with GeoFill capability, it takes 75% fewer keystrokes to enter a flight plan.

INTEGRATED FLIGHT DECK

FMS VECTORS™ - FLY THE MAGENTA LINE ALL THE TIME



The FMS900w provides an easier way to fly with Avidyne's innovative new FMS Vectors feature. With FMS Vectors capability, the FMS900W calculates the transition from the en route GPS phase of flight to the ILS intercept, draws a curved intercept flight path on the display and provides wind-corrected roll steering commands to the autopilot. In previous-generation navigators, the pilot must often artificially suspend navigation between an en route GPS-guided course and the terminal phase of flight to a VHF navaid such as an ILS.



During the transition between the en route and terminal phases of flight, these systems are essentially "coasting" in a heading mode, which is not corrected for wind and ground track. As a key feature of Avidyne's Flying Made Simple™ philosophy, the pilot is given FMS guidance for the entire route of flight, from 200 AGL to 200 AGL, without the need to suspend or interrupt guidance to the Autopilot, enhancing safety and eliminating "modes' confusion. The pilot simply "flies the magenta line" all the time.



Avidyne's FMS900w allows the selection and guidance to all ARINC 424 leg types, including constant radius arc (RF) legs used in curved RNAV/RNP procedures.

EASY TO EDIT

In order to minimize heads down time, any changes to the flight plan are immediately applied if they do not affect the active leg. A two-step activation process provides confirmation for any edits or changes to the active leg. All other edits are immediately applied to the flight plan as entered. Editing of an active route using the Avidyne FMS900w is simpler with its easy-to-understand insert cursor, which makes it extremely intuitive to know exactly where a new waypoint will be added.

The FMS900w allows the pilot to insert any planned alternates into the flight plan and even add instrument approaches to the alternate as part of the primary flight plan. In addition, the FMS intelligently analyzes the route of flight and will graphically warn the user of any discontinuities between the airway structure and the entered route.

It's dual-system capability means multiple instances of the FMS run concurrently, providing fully-synchronous and redundant FMS processes.

ACD215 CONTROL/DISPLAY UNIT



While the FMS900w is optimized to use the dual concentric rotary knobs and line select keys on the IFD bezels, one or more ACD215 Control/Display Units can be added to

facilitate alphanumeric data entry and meet the aircraft operational demands. The ACD215 contains the basic control keys for radios and FMS, including Direct-To, PROC, Vectors, and NRST functions, as well as the map range and pointer control.

COMMUNICATIONS MADE SIMPLE

The heart of *Entegra* Release 9's navigational and communications power lies in its CNS modules.

The DVX740 is the first certified 100% digital software aviation radio, and the only datalink-upgradeable radio available that is capable of supporting NEXCOM next generation datalink protocols including VDL Mode 2, 3, 4.

An all-digital software-controlled design means that the 4 COM/Datalink channels and the 4 NAV (VOR, LOC/GS) channels in each radio operate simultaneously, providing serious navigational power to the *Entegra* Release 9 FMS.



THE UPGRADE PATH TO ENTEGRA RELEASE 9 & BEYOND

As a pilot, you look for tools and information that will enhance your aircraft's performance and your safety of flight. As a technology-savvy consumer, you look for products that provide a growth path to the most advanced features and functions as they become available, providing the highest level of capability and the greatest value.

ENTEGRA: A HISTORY OF UPGRADEABILITY AND PERFORMANCE

Since the time we launched the all-glass flight deck revolution for General Aviation in 2003 with the debut of *Entegra*, Avidyne has continued on a course of providing the most up-to-date avionics systems available.

In 2004, we added CMax™ Electronic Charts and were first in light GA to certify XM datalink weather.

In 2006, Release 6 added Flight Director, V-Speed & Heading on ADI, additional datalink weather products on the MFD, and support for the USB memory-stick dataloader.

In 2007, we announced Release 7 which added support for WAAS/LPV Approach guidance among other things.

In 2008, Release 8 adds expanded Canadian and Caribbean Weather, Color Lightning with the TWX670, and support for world-wide datalink with the MLX770 and more.

Even the earliest *Entegra* systems have always been upgradeable to the current-production software and hardware levels, and now *Entegra* Release 9 brings your Avidyne *Entegra* Integrated Flight Deck to the highest level yet:

ENTEGRA RELEASE 9 INCLUDES:

- Upgrade to two fully-interchangeable IFD5000 Integrated Flight Displays with XGA (1024x768) glass
- Innovative Page and Tab user interface concept means all functions are a maximum of 2 buttons away
- Map, FMS, Checklist, Engines, Traffic, Datalink, Lightning
- New and unique features such as FMS Vectors™ and GeoFill™
- Split view display formats allowing simultaneous display of map with flight plan or chart or Nearest pages
- Full alphanumeric data entry panel with display
- Dual ADAHRS with sophisticated cross comparison checking
- Dual WAAS GPS receivers
- Dual 16 watt, 8.33 MHz, 4-channel digital VHF COMM/VLOC radios
- Dual revolutionary FMS
- Full Redundancy with no special “reversionary” modes
- Much tighter integration with on-board autopilot – no manual mode changing required
- Nav Display (ND) Box concept that allows all functions to be displayed on the pilot's IFD
- Dedicated baro and autopilot target controls on data entry panel
- All database and software updates are automatic using the front bezel USB ports
- New warranty and improved service

LOOKING TO THE FUTURE



The *Entegra* Release 9 upgrade provides the hardware platform to support future software releases which will support new display formats including Synthetic Vision (SVS), Enhanced Vision (EVS), and Highway in the Sky (HITS).

Avidyne has been at the forefront in developing advanced display formats, dating back to our development of HITS and work with Synthetic Vision in 2001 on the NASA Advanced General Aviation Transports Experiments (AGATE) program.



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