

## WAAS/SBAS Flight Management System with LPV Upgrade

### DHC-8 100/200/300

The Field Aerospace Wide Area Augmentation System (WAAS) / Satellite Based Augmentation System (SBAS) upgrade kit integration philosophy was founded on the experience gained during a Local Area Augmentation System (LAAS) precision landing upgrade program with thousands of successful flying hours achieved to date.

Field Aerospace's unique design utilizes the precision approach flight director/autopilot input previously used for MLS. We have seen that this approach is far superior, providing reliable, coupled approaches through the entire crosswind approach capability of the aircraft.

### Aircraft Applicability

- DHC-8-100
- DHC-8-200
- DHC-8-300

### Benefits

- LPV approach capability provides ILS-like guidance down to near CAT I ILS minimums (200' MDA, ½ mile visibility)
- Allows approaches at smaller municipal airports at night when no local altimeter setting is available
- Access to all RNAV (GPS) approaches (currently over 1500 approaches for use with WAAS worldwide)
- Enhanced integrity and accuracy monitoring removes RAIM requirement
- Allows you to plan GPS approaches to your flight plan destination, as well as an alternate

### Modification Content

- Single or dual UNS-1Ew, UNS-1Fw and UNS-1Lw FMS installations
- "Coupled" LPV (OPTION)
- Prefabricated wiring harnesses and equipment trays
- Installation data package
- Certification documentation



UNS-1Fw

UNS-1Ew

UNS-1Lw

Several upgrade kit solutions are available that cater to a variety of existing aircraft configurations – whether replacing existing UNS Flight Management Systems (FMS) or installing a completely new UNS FMS. The WAAS/SBAS upgrade kit replaces existing Universal Avionics dual UNS-1C, UNS-1C+ or UNS-1E FMS installations with the Universal Avionics dual UNS-1Ew, or existing UNS-1F installations with the UNS-1Fw, while retaining existing wiring in the aircraft. Kits for new single or dual FMS installations, including the UNS-1Lw, are also available.

The upgrade kits are prefabricated to their maximum potential in order to minimize aircraft downtime without impeding on-aircraft installation efficiency.

Universal Avionics' GPS/WAAS receiver is certified to provide navigation accuracy within 0.01 nm and 99.999% availability in WAAS coverage area. The receiver is TSO-146b, Class Gamma-3 certified and the WAAS antenna was the first to receive the TSO-C190 certification for a WAAS antenna.

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## DHC-8 100/200/300

### Complementary Modifications

Field Aerospace has existing design solutions for the following complementary modifications in the DHC-8:

- Universal Avionics EFI-890R Flight Deck Upgrade
- Universal Avionics SSDTU
- Universal Avionics UniLink
- Universal Avionics TAWS
- Honeywell EGPWS

### Typical Lead Time

- 12 weeks ARO

### Certification Basis

- TC STC #SA11-37
- FAA STC #ST03016NY

### Navigation Improvements & WAAS/SBAS Capabilities:

The WAAS/SBAS-capable FMS provides access to all RNAV (GPS) approach types, including the most precise and accurate GPS-based approaches available today. With Minimum Descent Altitudes (MDAs) as low as 200 feet with ½ mile visibility, this approach type improves safety and accessibility to airports which have much higher minima or no IFR approach at all.

The WAAS/SBAS FMS meets stringent internal monitoring requirements to provide guidance to any of the MDA levels available for RNAV (GPS) approach guidance:

Localizer Performance with Vertical Guidance (LPV)

Lateral Navigation / Vertical Navigation (LNAV/VNAV)

LNAV only

The WAAS/SBAS upgrade with the Optional autopilot coupled Lateral Performance and Vertical Guidance (LPV) capability allows the aircraft to perform “coupled” LPV approaches at the lowest published LPV minimums without limiting the existing cross wind limits of the DHC-8 aircraft. The Field Aerospace WAAS/SBAS approach is the sole solution for the DHC-8 that fully stabilizes the aircraft path in both dimensions (lateral and vertical), lessening crew workload and fatigue.

### Delivery

Lead time is 12 weeks ARO