

Localizer Performance with Vertical Guidance (LPV) FMS upgrade for Gulfstream G-150

Ref. No. 2011-090M

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ACT KTEB ARRIVAL 1/3
STARS APPROACHES
JAIKEZ RNV 06

LVZ3 ILS 06
      ILS 19
      V/D 06
----- WAAS LPV
          ARR DATA >

<DEP/ARR IDX LEGS >
[ MSG ]
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LPV will provide pilots unprecedented access to runways and airports that have not deployed an ILS approach.

With an LPV upgrade for your Pro Line 21 equipped Gulfstream G150 you have increased flexibility to land more places, more often by accessing lower LPV Decision Altitudes on RNAV instrument approaches. LPV minimums as low as 200 feet with ½ mile of visibility are now published on RNAV approach charts and the flight deck operation is very similar to Category I ILS approaches.

Localizer Performance with Vertical Guidance (LPV) takes advantage of the Satellite-Based Augmentation Systems (SBAS). Wide Area Augmentation System (WAAS) is the United States implementation of SBAS, which also provides signal coverage and operational benefits in Canada. WAAS uses a combination of satellites and ground stations to dramatically improve the GPS's performance as measured by accuracy, availability, and integrity. This increased performance enables vertical navigation by the GPS.

LPV further enhances operational flexibility and simplicity by enabling consistent approach procedures that are never subject to cold temperature limitations. Cold temperature limitations are commonly published on traditional RNAV approaches and must be observed by all aircraft using barometric VNAV for the approach. The vertical navigation when flying LPV approaches is satellite-derived and therefore not affected by the outside air temperature.

There are currently over 3,300 LPV approaches published in the US. The FAA is adding more LPV approaches each year with the potential number of approaches reaching 4,000 runways. Additionally, Nav Canada has created over 170 LPV approaches with plans to add more over the next several months.

**Rockwell
Collins**

KEY BENEFITS OF ROCKWELL COLLINS' LPV FMS VERSION 4.0 UPDATE

- Land more places, more often
 - Access to LPV minimums on RNAV approaches
 - Decision altitudes as low as 200 feet
 - Visibility minimums as low as 1/2 mile
- Enhanced peace of mind through new vertically-guided approaches to airports and runways not equipped with ILS approach systems
 - Satellite-based vertical guidance supports highly repeatable, stabilized approaches
 - Flight deck operations for LPV are very similar to those for ILS approaches
 - Consistent approach procedures throughout the year- LPV approaches are not subject to cold temperature limitations
- Additional backup for ILS
 - RNAV approaches with LPV to runways with an existing ILS provide an additional backup in the event that either localizer or glide slope is out of service
- Save as much as \$50,000 annually in operating costs (Based on 300 flight hours, half of destination runways have LPV; fly direct to IAF; \$6 fuel)

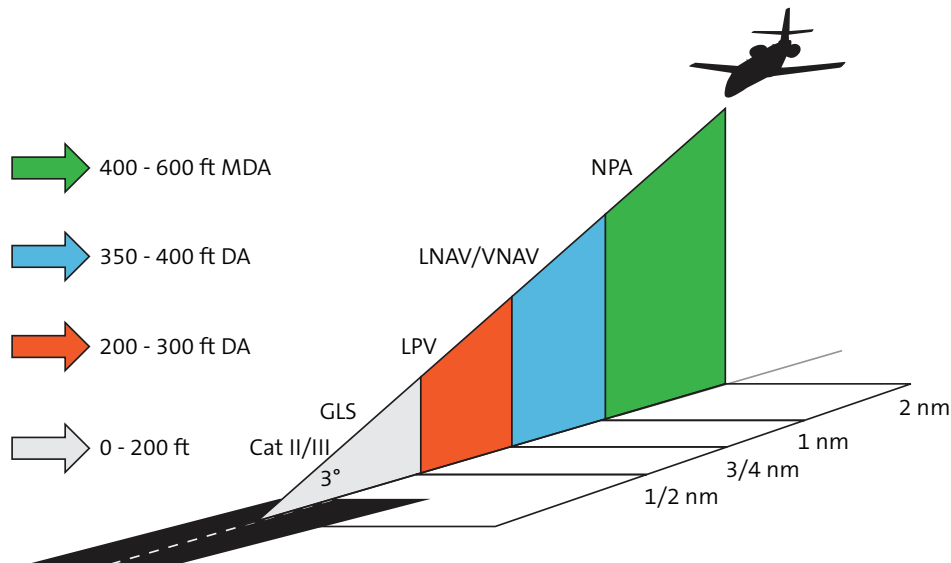
REQUIREMENTS

The aircraft must have the Rockwell Collins DBU-5000/5010E, PCD-3000, or CPAS, and GPS-4000S and WAAS capable c190 antennas installed to enable LPV. See marketing bulletins BRS-110091.6M on DBU-5000/5010E and PDL-5001 and BRS-110109.4M on GPS-4000S for part numbers and information.

TERMS AND CONDITIONS

Unless otherwise noted, this program is valid for orders placed between January 1, 2015 and December 31, 2015, with delivery requested by April 1, 2016. Warranty period is two years for new equipment.

For more information, please contact your Rockwell Collins Authorized Dealer.



GULFSTREAM G-150 LPV UPGRADE^{1,2,3,4}

1) The following items are available for LPV Upgrade through Customer Account Administration. See section 3 below for additional requirements.

Type Number	Existing Part Number	New Part Number	QTY
OCM-3100 ³ or	822-1484-241	822-1484-248	2
OCM-3100 ³ or	822-1484-212	822-1484-252	2
OCM-3100 ³ or	822-1484-244	822-1484-253	2
OCM-3100 ³ or	822-1484-302	822-1484-310	2
OCM-3100 ³ or	822-1484-245	822-1484-250	2
OCM-3100 ³ or	822-1484-313	822-1484-306	2
OCM-3100 ³ or	822-1484-312	822-1484-309	2
OCM-3100 ³	822-1484-311	822-1484-308	2
MDT-3110	810-0042-042	810-0042-044	1
IDT-3110	810-0043-702	810-0042-703	1
Computer Based LPV Training (CBT) for Pilots ⁴			1

2) The following items must be upgraded or exchanged, select 2A or 2B. To place an order for a Service Center upgrade, contact Mark Gibbs at 316-677-4808 or for an exchange upgrade, contact Marilyn Miller at 319.295.0580.

2A) Service Bulletin Information for LPV Upgrade - for FMC (must purchase new OCM)

Type Number	Existing Part Number	New Part Number	Service Bulletin	QTY
FMC-6000	822-0868-087	822-0868-109	536	2

2B) Exchange Information for LPV Upgrade - for IOC & FMC (must purchase new OCM)

FMC-6000	822-0868-087	822-0868-109	N/A	2
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REQUIRED EQUIPMENT FOR LPV UPGRADE

3) The following equipment must be purchased, if not currently installed on the aircraft.

- GPS-4000S¹ (see marketing bulletin BRS-110109.4M) and WAAS capable TSO c190 antennas
- DBU-5000/5010E² (see marketing bulletin BRS-110091.6M), PCD-3000, or CPAS-3000

NOTES

1. Aircraft must have the Rockwell Collins GPS-4000S and WAAS capable TSO C190 antennas installed to enable LPV. See marketing bulletin BRS-110109.4M GPS-4000S for part numbers and information. The installation of the GPS-4000S using Approved Model List (AML) STC, ST01433WI-D is available from Rockwell Collins.
2. Aircraft must have the Rockwell Collins DBU-5000/5010E, PCD-3000 or CPAS installed to load LPV data. See marketing bulletin BRS-110091.6M DBU-5000/5010E and PDL-50001 for part numbers and information. The installation of the DBU-5000/5010E using Approved Model List (AML) STC, ST01431WI-D, is available from Rockwell Collins.
3. Caution: Deviation from existing OCM part number to new OCM part number, as listed, will introduce operational problems.
4. Two sessions of on-line computer based pilot LPV training are available free of charge. Please contact the training registrar at 319-295-4672 or email trainingregistrar@rockwellcollins.com. On-line LPV sales and installation training is also available. Please contact your Rockwell Collins Authorized Dealer for more information.
5. Type 7 FMS Nav Data Base required for LPV. Customers' FMS Nav Data Base account must be updated to Type 7 Data Base. Contact FMS Nav Data Base subscriptions at 319-295-5000 to update account.

How can we help?

Please call Rockwell Collins Customer Support at 319.295.5000.

Building trust every day.

Rockwell Collins delivers smart communication and aviation electronic solutions to customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

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