



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

**Transport Airplane Directorate  
Aircraft Certification Service**

1601 Lind Avenue S.W.  
Renton, Washington 98055-4056

JUN 29 2000

In Reply  
Refer To: 130S-00-0390

Ms Colleen Portch  
Certification Services Administrator  
Honeywell International Inc.  
15001 NE. 36th Street  
P.O. Box 97001  
Redmond, WA 98073-9701

Dear Ms. Portch:

**Technical Standard Order (TSO) Approvals**  
**TSO C92c Authorization of Ground Proximity Warning Functions;**  
**TSO C117a Authorization of Windshear Warning Functions;**  
**TSO C151a Class A Authorization of Terrain Awareness and Warning System Functions**  
**Enhanced Ground Proximity Warning Computer (EGPWC) Part Numbers**  
 965-0976-003-212-212 (960-0329-015), 965-0976-020-212-212 (960-0336-003),  
 965-0976-040-212-212 (960-0335-011), 965-1076-001-212-212 (960-2226-006),  
 965-1076-020-212-212 (960-2225-004), and 965-1076-040-212-212 (960-2224-006)

Your certification that the following new Honeywell EGPWC Part Numbers (P/N):

EGPWS Type	Certification Baseline (115 VAC)	New 115 VAC EGPWC
MK V EGPWC	965-0976-003-210-210 (960-0329-013)	965-0976-003-212-212 (960-0329-015)
MK V EGPWC Internal GPS Receiver	965-0976-020-210-210 (960-0336-002)	965-0976-020-212-212 (960-0336-003)
MK VII EGPWC	965-1076-001-210-210 (960-2226-005)	965-1076-001-212-212 (960-2226-006)
MK VII EGPWC Internal GPS Receiver	965-1076-020-210-210 (960-2225-003)	965-1076-020-212-212 (960-2225-004)

EGPWS Type	Certification Baseline (28 VDC)	New 28 VDC EGPWC
MK V EGPWC	965-0976-040-210-210 (960-0335-010)	965-0976-040-212-212 (960-0335-011)
MK VII EGPWC	965-1076-040-210-210 (960-2224-005)	965-1076-040-212-212 (960-2224-006)

are in conformance with Federal Aviation Regulations (FAR) Part 21, Subpart O, as described in your letter of June 16, 2000, (Ref. 00FAA-159) is acceptable. Your Quality Control Manual, Revision H, dated May, 1999, is considered adequate and is on file in the Manufacturing Inspection District Office, Renton, Washington.

The approval for TSO C92c applies to the performance, qualification testing, and software testing of the basic Ground Proximity Warning Computer (GPWC) functions in the EGPWC. The added features meet the same qualification testing and software testing of the GPWC.

The approval for TSO C117a only applies to the windshear warning alert and windshear caution alert portions of the equipment and does not include the Boeing windshear prealert and any escape guidance or auto-recovery options. These limitations will be evaluated under the Supplemental Type Certificate (STC) process and should be listed in the aircraft installation manual.

The approval for TSO C151a Class A applies to the Terrain Awareness and Warning System functions. The TAWS meets the performance standards for TSO C151a Class A equipment. The added features meet the same qualification testing and software testing of the TAWS; however, the actual performance standards for additional features are not under this TSO. They should be evaluated under the STC process and should be listed in the aircraft installation manual. A detailed functional description of the EGPWC is in the Product Specification, Document Number 965-0976-603. Details of interface and customer options are in the Interface Control Document (ICD), Document Numbers 993-0976-401 (for MK V EGPWS) and 993-1076-401 (for MK VII EGPWS).

The following documents, as referenced in the above letter, have been reviewed and added to our files to support this application:

Item	Document Title	Document Number & Revision
1.	DO161A System Validation Test Results For The Enhanced Ground Proximity Warning Computer 965-0976-0XX-212-212	070-4553-017, Rev A (2)
2.	DO161A System Validation Test Results For The Enhanced Ground Proximity Warning Computer 965-1076-0XX-212-212	070-4553-018, Rev New (3)
3.	Windshear Test Procedure for Enhanced Ground Proximity Warning Computer (EGPWC)	076-0882-000, Rev A (1)
4.	Windshear Test Results for Enhanced Ground Proximity Warning Computer (EGPWC)	076-0882-207, Rev New (1)
5.	TSO-C151a Test Procedure for the MKV and MKVII Enhanced Proximity Warning Computer (EGPWC)	060-4323-000, Rev A (1)
6.	TSO-C151a Test Results for the MKV and MKVII EGPWC	070-4611-001, Rev New (1)

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Item	Document Title	Document Number & Revision
7.	System Requirements Document (SRD) for the Enhanced Ground Proximity Warning Computer (EGPWC)	993-0976-303, Rev New-01* (1)
8.	CFDS Interface Requirements Document (CISRD) for the Enhanced Ground Proximity Warning Computer (EGPWC)	993-0104-706, Rev New-01 (2) (ADCN Only)
9.	Product Specification for the Enhanced Ground Proximity Warning System (EGPWS)	965-0976-603, Rev F (1)
10.	Product Specification for Military Applications of the Enhanced Ground Proximity Warning System (EGPWS)	965-0976-620, Rev B (1)
11.	Interface Control Document (ICD) for the Mark V Enhanced Ground Proximity Warning System (MK V EGPWS)	993-0976-401, Rev G (2)
12.	Interface Control Document (ICD) for the Mark VII Enhanced Ground Proximity Warning System (MK VII EGPWS)	993-1076-401, Rev G (3)
13.	Configuration Index Document (CID) for MK V and MK VII EGPWS	993-0976-000, Rev BH (1)
14.	Plan for Release 18 of the Enhanced MK V/VII Ground Proximity Warning Computer (EGPWC)	060-4210-027, Rev New (1)
15.	Plan for Application Software Version 212.01 of the MK V/VII Enhanced Ground Proximity Warning Computer	060-4210-029, Rev New (1)
16.	Software Accomplishment Summary for the Enhanced Ground Proximity Warning Computer (EGPWC)	992-0103-826, Rev A (1)
17.	SYSTEM, ENHANCED GROUND PROXIMITY WARNING, 115VAC <i>Separate Parts List</i>	960-0329, Rev BN (2) PL960-0329-015, Rev New
18.	EGPW SYSTEM, 115 VAC, OUTLINE	960-0329-201, Rev G (2)
19.	ENHANCED GROUND PROX. WARNING COMPUTER <i>Separate Parts List</i>	965-0976-003, Rev AK (2) PL965-0976-003, Rev N
20.	SYSTEM, ENHANCED GROUND PROXIMITY WARNING, 115 VAC WITH GPS <i>Separate Parts List</i>	960-0336, Rev R (2) PL960-0336-003, Rev New
21.	ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS), 115 VAC WITH GPS, OUTLINE	960-0336-201, Rev B (2)

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Item	Document Title	Document Number & Revision
22.	ENHANCED GROUND PROX. WARNING COMPUTER, 115VAC WITH GPS CARD <i>Separate Parts List</i>	965-0976-020, Rev K (2) PL965-0976-020, Rev E
23.	SYSTEM, ENHANCED GROUND PROXIMITY WARNING, 28 VDC <i>Separate Parts List</i>	960-0335, Rev BB (2) PL960-0335-011 Rev New
24.	EGPW SYSTEM, 28 VDC, OUTLINE	960-0335-201, Rev D (2)
25.	ENHANCED GROUND PROX. WARNING COMPUTER <i>Separate Parts List</i>	965-0976-040, Rev AF (2) PL965-0976-040, Rev M
26.	SYSTEM, MK VII ENHANCED GROUND PROXIMITY WARNING, 115 VAC <i>Separate Parts List</i>	960-2226, Rev AL (3) PL960-2226-006 Rev New
27.	EGPW SYSTEM, 115 VAC, OUTLINE	960-2226-201, Rev E (3)
28.	MKVII ENHANCED GROUND PROX. WARNING COMPUTER <i>Separate Parts List</i>	965-1076-001, Rev AC (3) PL965-1076-001, Rev M
29.	SYSTEM, MK VII ENHANCED GROUND PROXIMITY WARNING, 115 VAC WITH GPS CARD <i>Separate Parts List</i>	960-2225, Rev AC (3) PL960-2225-004 Rev New
30.	EGPW SYSTEM, 115 VAC, WITH GPS CARD - OUTLINE	960-2225-201, Rev E (3)
31.	MKVII ENHANCED GROUND PROX. WARNING COMPUTER <i>Separate Parts List</i>	965-1076-020, Rev V (3) PL965-1076-020, Rev G
32.	SYSTEM, MK VIII ENHANCED GROUND PROXIMITY WARNING, 28 VDC <i>Separate Parts List</i>	960-2224, Rev AK (3) PL960-2224-006, Rev New
33.	EGPW SYSTEM, 28VDC, OUTLINE	960-2224-201, Rev B (3)
34.	MKVII ENHANCED GROUND PROX. WARNING COMPUTER, 28VDC <i>Separate Parts List</i>	965-1076-040, Rev Y (3) PL965-1076-040, Rev J
35.	LABEL - EGPWS COMPUTER TOP ASSEMBLY	402-6068, Rev AB (1)
36.	Failure Modes, Effects, and Safety Analysis For Installations of The MK V and MK VII Enhanced Ground Proximity Warning Systems	060-4199-181, Rev A (1)
37.	Qualification by Similarity Report EGPWS Part Numbers 965-0976-003-212-212, 965-0976-020-212-212 and 965-0976-040-212-212	904-0094-401 Rev New (2)

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Item	Document Title	Document Number & Revision
38.	Qualification by Similarity Report for EGPWS Part Numbers 965-1076-001-212-212, 965-1076-020-212-212 and 965-1076-040-212-212	904-0095-401 Rev New (3)
39.	MK V Enhanced Ground Proximity Warning System Component Maintenance Manual	012-0687-001, Rev 12 (2) ATA no. 34-45-36
40.	MK VII Enhanced Ground Proximity Warning System Component Maintenance Manual	012-0702-001, Rev 7 (3) ATA no. 34-45-39

**Note:**

- (1) Applicable to MKV and MKVII EGPWC
- (2) Applicable to MKV EGPWC only
- (3) Applicable to MKVII EGPWC only

\* The SRD is not on file, but it is available at the Honeywell facility in Redmond for FAA review. A FAA Statement of Compliance for this document has been provided related to DO-178B.

We also acknowledge the FAA Forms 8110-3 that were submitted with your Letter 00FAA-151, dated June 16, 2000, which approved the Software Accomplishment Summary and other related data for this application.

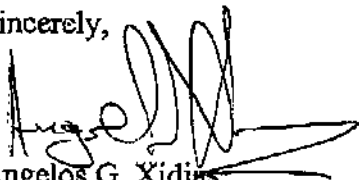
Effective this date, you are authorized to use TSO procedures as prescribed by Subpart O of FAR Part 21 and to identify the MK V and MK VII Enhanced Ground Proximity Warning Computer Part Numbers 965-0976-003-212-212 (960-0329-015), 965-0976-020-212-212 (960-0336-003), 965-0976-040-212-212 (960-0335-011), 965-1076-001-212-212 (960-2226-006), 965-1076-020-212-212 (960-2225-004), and 965-1076-040-212-212 (960-2224-006) with the applicable TSO markings as required by TSO-C92c, C117a, and TSO C151a.

Any design changes made to this TSO'ed EGPWS must be forwarded to this office as outlined in FAR 21.611(a), with minor change submittal intervals not to exceed six months. As a TSO manufacturer, you are required to report to the FAA any failure, malfunction, or defect related to your TSO authorization within 24 hours in accordance with the provisions of FAR 21.3. You must also notify the FAA when you no longer manufacture a TSO approved article as required by FAR 21.613(b).

This authorization pertains only to the manufacturing operations at the above address, and this office must be notified in advance of any proposed relocation.

If you have any questions, please contact Ms. Sheila Mariano at (425) 227-2675.

Sincerely,

A handwritten signature in black ink, appearing to read 'Angelos G. Xidias', with a long horizontal flourish extending to the right.

Angelos G. Xidias

Manager, Systems and Equipment Branch  
Seattle Aircraft Certification Office