

Approved Model List (AML) For

**Automatic Dependent Surveillance - Broadcast (ADS-B) Out System
using the Garmin GTX 330ES or GTX 33H ES Transponder and a
Qualified Position Source**

Peregrine

STC No. SR00828DE

FAA Approved: _____ //s// Greg Johnson

Greg Johnson, Program Manager
Denver ACO Branch

Original Issue: Dec 1, 2016
Amended: Aug 15, 2017

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For ADS-B Out Airworthiness Approval

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1 Revision Log

Revision	Pages	Description	FAA Approval	Date
IR	i-ii, & 1-7, inclusive	Initial Release	<u>//s// Greg Johnson</u> Program Manager, Denver Aircraft Certification Office Federal Aviation Administration Transport Airplane Directorate Date: <u>12/1/2016</u>	Original Issue Dec 01, 2016
A	i-ii, & 1-7, inclusive	Corrected TSO reference in Section 2.1 from TSO-C112d to TSO-C66() or TSO-C74()	<u>//s// Greg Johnson</u> Program Manager, Denver Aircraft Certification Office Federal Aviation Administration Transport Airplane Directorate Date: <u>5/10/2017</u>	Amended May 10, 2017
B	2, 4	Revised Limitation 4, Section 2.2. Corrected part number in Section 4.2 from 011-00779-20 to 011-00779-70.	<u>//s// Todd Dixon</u> Manager, Denver ACO Branch Federal Aviation Administration Compliance and Airworthiness Division Date: <u>8/17/2017</u>	Amended Aug 15, 2017

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2 Introduction

This document is the Federal Aviation Administration (FAA) Approved Model List (AML) for Supplemental Type Certificate (STC) Number SR00828DE, for installing the Automatic Dependent Surveillance - Broadcast (ADS-B) Out System using the Garmin GTX 330ES or GTX 33H ES Transponder and a qualified Global Position System (GPS) with Wide Area Augmentation System (WAAS) into eligible aircraft. Qualified ADS-B Out equipage is listed in Section 4, and approved models are listed in Section 5.

This AML is only applicable to the 14 CFR Part 27 civilian rotorcraft, listed in Section 5. Installations in 14 CFR Part 23, Part 25, Part 29 and unlisted Part 27 rotorcraft are not authorized under this AML.

Revisions to this AML must be coordinated between the STC holder and the responsible Aircraft Certification Office (ACO), and require FAA approval.

2.1 Prerequisites

This AML assumes the following equipment is already installed on each rotorcraft eligible for this proposed modification. The following equipment must be previously installed and properly linked to meet the intended function for the system, as certified under this AML approval.

1. Transponder system, including
 - i. Standalone transponder, and,
 - ii. Technical Standard Order (TSO) Approved transponder antenna that meets TSO-C66() or TSO-C74().
2. A digital altitude encoder that outputs either Gillham code (ARINC 429) or serial altitude data (RS-232).

2.2 Specific Limitations

The following specific limitations apply to this AML STC.

1. Installation of the following required equipment is outside the scope of this AML STC. This AML STC does **NOT** include installation approval of the following required equipment:
 - i. an altitude encoder,
 - ii. an air data computer,
 - iii. new or replacement transponder antenna,
 - iv. new or replacement GPS antenna,

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- v. new or replacement Universal Access Transceiver (UAT) antenna,
 - vi. a weight on wheels (WOW) system.
2. Installation of the following position sensors is outside the scope of this AML STC. This AML STC does **NOT** include installation approval of the following position sensors:
 - i. Garmin GNS 400W/500W Series GPS/WAAS receiver,
 - ii. Garmin GTN 650 Series GPS/WAAS receiver, nor
 - iii. Garmin GTN 750 Series GPS/WAAS receiver.
 3. If any of the position sensors listed above is utilized to provide position data to the ADS-B Out System, then the GPS/WAAS receiver and associated GPS antenna must be installed in the rotorcraft via another FAA approval.
 4. Initial installation of the Garmin GTX 330 (or non-GTX 330) and GTX 33H transponders and associated transponder antennas is outside of the scope of this AML STC. They must be initially installed in the rotorcraft via another FAA approval.
 5. This AML STC does **NOT** allow or provide instructions for installation on aircraft equipped with Traffic Collision Avoidance System (TCAS) II.
 6. This AML STC does **NOT** include installation approval of software updates to the position sensors identified in Specific Limitation #2.
 7. This AML STC does **NOT** include the implementation of any 978 MHz UAT ADS-B Out transmit functionality.
 8. This AML STC does **NOT** allow or provide instructions for interfacing with Traffic Collision Avoidance System (TCAS) II equipped rotorcraft.

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3 Certification Basis

The certification basis for each qualified model is specified in the type certificate data sheet (TCDS) and modified by the amendment levels noted in the appendix identified in the approved model list of Section 5 below.

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4 Approved ADS-B Out Equipage

4.1 Configuration 1

This AML STC approves the Garmin GTX 330ES Transponder, part number (p/n) 011-00455-60 and 011-00455-80 (software 006-B0172-SA version 7.04 or later) to be paired with a Garmin GNS 400W/500W Series GPS/WAAS Receiver listed in Table 1 below.

Table 1: Eligible GNS 400W/500W GPS WAAS Receiver¹

Model Number	Part Number	Description
GNS 430W	011-01060-()	GPS/WAAS, VHF COM (10W) & VHF NAV (VOR/LOC/GS)
GNS 430AW	011-01061-()	GPS/WAAS, VHF COM (16W) & VHF NAV (VOR/LOC/GS)
GPS 500W	011-01062-()	GPS/WAAS
GPS 500W TAWS	011-01063-()	GPS/WAAS with Terrain Awareness & Warning System
GNS 530W	011-01064-()	GPS/WAAS, VHF COM (10W) & VHF NAV (VOR/LOC/GS)
GNS 530W TAWS	011-01065-()	GPS/WAAS, VHF COM (10W) & VHF NAV (VOR/LOC/GS) with Terrain Awareness & Warning System
GNS 530AW	011-01066-()	GPS/WAAS, VHF COM (16W) & VHF NAV (VOR/LOC/GS)
GNS 530AW TAWS	011-01067-()	GPS/WAAS, VHF COM (16W) & VHF NAV (VOR/LOC/GS) with Terrain Awareness & Warning System

4.2 Configuration 2

This AML STC approves the Garmin GTX 33H ES Transponder, part number (p/n) 011-00779-70 (software 006-B0172-SA version 7.04 or later) to be paired with a Garmin GTN 600/700 Series GPS/WAAS Receiver listed in Table 2 below.

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Table 2: Eligible GNS 600/700 GPS WAAS Receiver²

Model Number	Part Number	Description
GTN 625	011-02254-()	GPS/WAAS
GTN 635	011-02255-()	GPS/WAAS & VHF COM
GTN 650	011-02256-()	GPS/WAAS, VHF COM & VHF NAV (VOR/LOC/GS)
GTN 725	011-02281-()	GPS/WAAS
GTN 750	011-02282-()	GPS/WAAS, VHF COM & VHF NAV (VOR/LOC/GS)

NOTE(S)

1. *Garmin GNS 400W/500W Series GPS/WAAS Receiver listed **Table 1** must be running main software version 5.20 (p/n 006-B0531-25) or later and GPS software version 5.0 (p/n 006-B0339-20) or later.*
2. *Garmin GTN 600/700 Series GPS/WAAS Receiver listed in **Table 2** must be running main software version 5.13 (p/n 006-B1026-33) or later and GPS software version 5.0 (p/n 006-B0339-20) or later.*

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5 Approved Model List

Item	Aircraft Make	Aircraft Model	TCDS	Certification Basis	Master Drawing List / Date	AFM Supplement Number / Date	Instructions for Continued Airworthiness	Notes	Initial Approval / Amendment Date
1.	Agusta	A109	H9EU	14 CFR 27 per TCDS as amended by Appendix A	Peregrine Doc. No. E-AM-15-0002, Rev B, dated 09/03/16, or later FAA approved revision.	Peregrine Doc. No. E-AM-15-0009, Initial Release, dated 08/31/16, or later FAA approved revision.	Peregrine Doc. No. E-AM-15-0008, Initial Release, dated 09/03/16, or later FAA approved revision.	(1)	Initial Approval 12/01/2016
2.	Airbus Helicopters	AS350B, AS350BA, AS350B1, AS350B2, AS350B3, AS350C, AS350D, AS350D1, EC130B4, EC130T2	H9EU	14 CFR 27 per TCDS as amended by Appendix A	Peregrine Doc. No. E-AM-15-0002, Rev B, dated 09/03/16, or later FAA approved revision.	Peregrine Doc. No. E-AM-15-0009, Initial Release, dated 08/31/16, or later FAA approved revision.	Peregrine Doc. No. E-AM-15-0008, Initial Release, dated 09/03/16, or later FAA approved revision.	(1)	Initial Approval 12/01/2016
3.	Airbus Helicopters Deutschland GmbH	EC135P1, EC135P2, EC135P2+, EC135T1, EC135T2, EC135T2+	H88EU	14 CFR 27 per TCDS as amended by Appendix A	Peregrine Doc. No. E-AM-15-0002, Rev B, dated 09/03/16, or later FAA approved revision.	Peregrine Doc. No. E-AM-15-0009, Initial Release, dated 08/31/16, or later FAA approved revision.	Peregrine Doc. No. E-AM-15-0008, Initial Release, dated 09/03/16, or later FAA approved revision.	(1)	Initial Approval 12/01/2016
4.	Bell	407	H2SW	14 CFR 27 per TCDS as amended by Appendix A	Peregrine Doc. No. E-AM-15-0002, Rev B, dated 09/03/16, or later FAA approved revision.	Peregrine Doc. No. E-AM-15-0009, Initial Release, dated 08/31/16, or later FAA approved revision.	Peregrine Doc. No. E-AM-15-0008, Initial Release, dated 09/03/16, or later FAA approved revision.	(1) (2)	Initial Approval 12/01/2016

NOTE(S):

(1) Eligible serial numbers are those identified in the type certificate data sheet (TCDS) as eligible.

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- (2) Type Certificate Holder when model was added to AML is Bell Helicopter Textron Canada Limited.

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Appendix A: All Models

Based on 14 CFR §§ 21.115 and 21.101, and the FAA policy for significant changes in FAA Order 8110.48, the certification basis is as follows:

- a. As determined by the Type Certificate Data Sheet (TCDS) of the aircraft for parts **not changed or not affected** by this STC.
- b. Regulations at the amendment levels listed in Table 1 below for parts **changed or affected** by the STC since the reference date of STC application, July 6, 2015.

Table 3: Certification Basis Including Amendments.

Regulations	Amdt.
§ 27.301	27-0
§ 27.303	27-0
§ 27.305	27-0
§ 27.307 (a)	27-26
§ 27.337	27-26
§ 27.341	27-0
§ 27.471	27-0
§ 27.561 (a)(b)(3)	27-32
§ 27.601	27-0
§ 27.603	27-16
§ 27.605 (a)	27-16
§ 27.607	27-4
§ 27.609	27-0
§ 27.610 (a)(b)(d)	27-46
§ 27.611	27-0
§ 27.613	27-26
§ 27.619	27-0
§ 27.625	27-35
§ 27.671 (a)	27-0
§ 27.771 (a)	27-0

Regulations	Amdt.
§ 27.773 (a)(1)	27-0
§ 27.777	27-0
§ 27.1301 (a)(b)(c)(d)	27-0
§ 27.1307 (d)(e)	27-0
§ 27.1309 (a)(c)	27-46
§ 27.1316	27-46
§ 27.1317 (c)	27-42
§ 27.1321 (a)(c)(d)	27-13
§ 27.1322 (d)	27-11
§ 27.1351 (a)(b)(1)	27-13
§ 27.1357 (a)(b)(c)(d)	27-13
§ 27.1365	27-35
§ 27.1381	27-0
§ 27.1529	27-18
§ 27.1541 (a)(b)	27-0
§ 27.1581	27-14
§ 27.1583	27-16
§ 27.1585 P(a)	27-21