DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A56CE
Revision 9
Polskie Zakłady Lotnicze
Sp. z o.o., Mielec

PZL M28 05

July 1, 2021

TYPE CERTIFICATE DATA SHEET No. A56CE

This data sheet, which is part of Type Certificate No. A56CE, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: Polskie Zakłady Lotnicze Sp. z o.o.
Wojska Polskiego 3
39-300 Mielec
Poland

I. Model PZL M28 05, Twin-engine airplane, (Commuter Category), approved March 19, 2004

Engines: 2 (ea) Pratt & Whitney Canada, model PT6A-65B turboprops with a free turbine in reverse arrangement, reduction ratio of 0.0568:1.

Fuel: Aviation kerosene, type JET-A, JET A-1, JET A-2, and their equivalents as per P&WC Bulletin No. 13044:
JP-4, JP-5, JP-8,
F34, F35, F40, F43, F44,
AIR 3404, AIR 3405, AIR 3407
RT acc. to GOST 16564-71

Oil: Aero Shell Turbine Oil 500, Royco Turbine Oil 500, Mobil Jet Oil II, Stanffer Jet II, Castrol 5000, Exxon Turbo Oil 2380, Turbonycoil 525-2A, in accordance with P&WC Bulletin No. 13001

Engine Performance:

	Shaft Horsepower SHP[1)]	Torque PSIG	Prop speed 1/rpm	Turbine Speed %	ITT °C
Takeoff	1100*	43.34	1700	104	820
Max. Continuous	1100**	43.34	1700	104	810
Max. Cruise	1000***	43.34	1700	104	800

1) minimum operating power attainable in service
*attainable up to 50.5 °C ambient air temperature
** attainable up to 45.5 °C ambient air temperature
***attainable up to 42.5 °C ambient air temperature

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Number of propellers 2

Propeller and Propeller Limits Hartzell Propeller Inc. (USA)
HC-B5MP-3D
Five-blade, all-metal, constant-speed with feathering and reverse
Propeller diameter: 2.820 m (9 ft. 3 in.)

Airspeed Limits	Indicated Airspeed IAS (km/h)	(KTS)	Calibrated Airspeed CAS (km/h)	(KTS)
Max. Operating (Limit) Speed, V_{MO}	355	192	345	186
Design Maneuvering Speed, V_A	244	133	238	129
Max. Flaps-Extended Speed, V_{FE}				
Flaps 15°	215	116	210	113
Flaps 40°	200	108	190	103
Max. Spoiler-Deployed Speed, V_{NS}	215	116	210	113
Minimum Control Speed, V_{MC}	153	83	146	79

Load Factor Limits at Max. Allowable Weight of 7500 kg:

Flaps Up:	Positive Nz =+3.0	Negative Nz = -1.0
Flaps Down:	Positive Nz =+2.0	Negative Nz = 0.0

Center-of-Gravity Limits:

(a) Center of Gravity range:

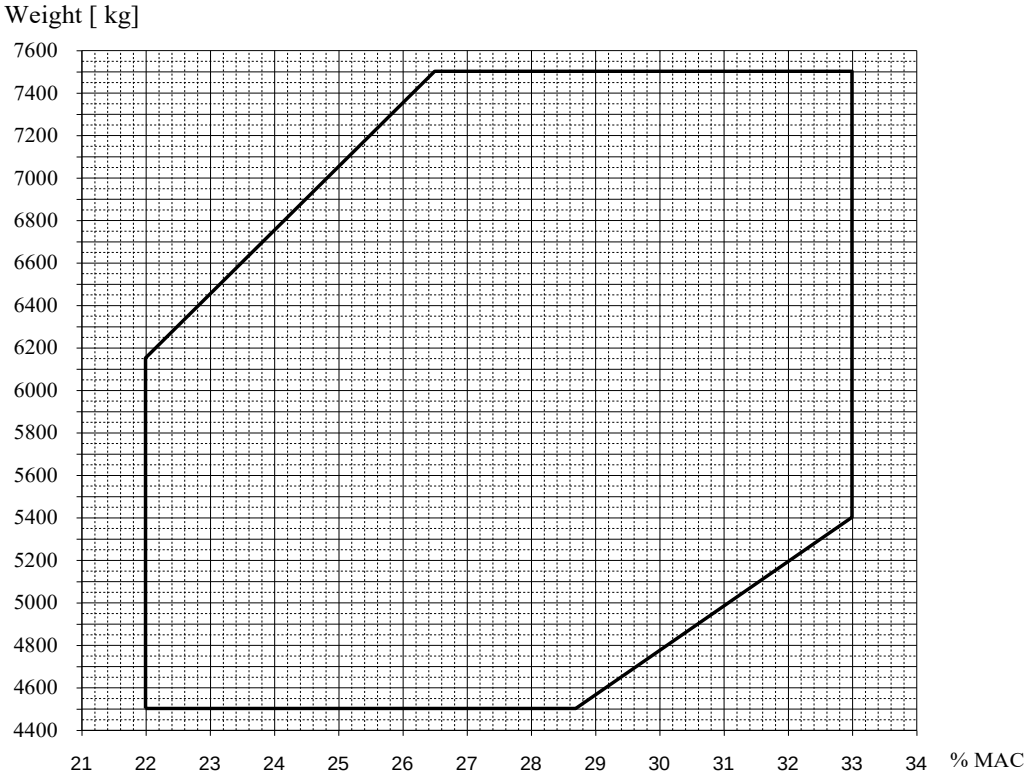
Forward	22% MAC
Aft	33% MAC

(b) MAC Length: 1.886 m (74.25 in.)

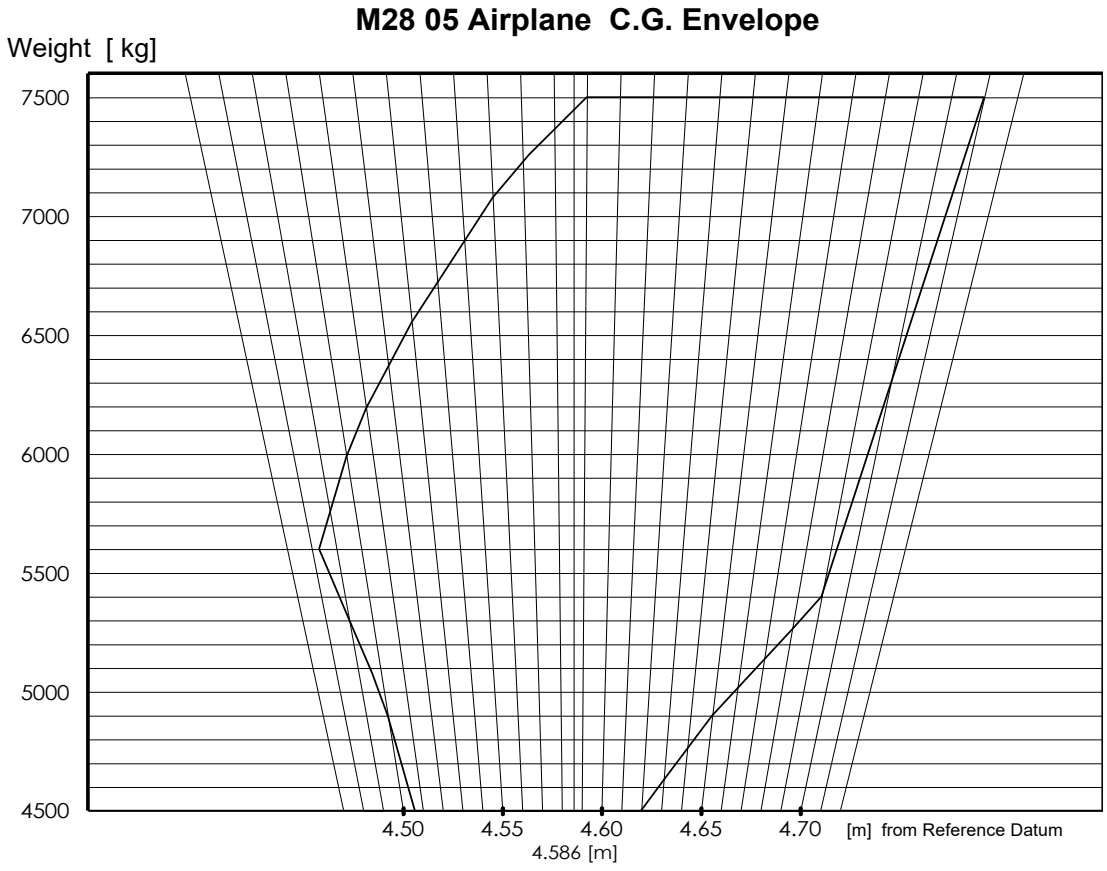
(c) Location of reference datum: 2.470 m (97.24 in.) Frame No. 9, Forward.

(d) The leading edge of the MAC is aft of the reference datum: 4.135 m (162.80 in.)

Center-of-Gravity Envelope:



Weights:



Max. Takeoff	7500 kg	(16534 lbs.)
Max. Landing	7500 kg	(16534 lbs.)
Max. Zero-Fuel	6900 kg	(15212 lbs.)
Max. Payload	2300 kg	(5070 lbs.) i.e.:

- max. 2000 kg (4408 lbs.) in Cargo/Passenger Cabin (including max. 40 kg (88 lbs.) on Rack in Fuselage Rear Part)
- max. 300 kg (662 lbs.) in Underfuselage Pod (optional equipment)

Minimum Weight for Flight	4700 kg	(10362 lbs.)
Cargo Loading Hoist Capacity Max.	700 kg	(1540 lbs.)

Leveling Means: See AFM section 6 for details.

Max. Passenger Seating Capacity: 19

Minimum Crew: 2 pilots

Fuel Tank Capacity:
- Wing tanks Max. 3894 lbs; 602 US gal. (1766 kg) (2278 L)
- Optional Aux. Fuselage Fuel Tank 3637 lbs; 552 US gal. (1650 kg) (2090L)

Unusable Fuel: 62 lbs.; 9.5 US gal. (28 kg) (36 L)

Usable Fuel: 3832 lbs.; 592.5 US gal. (1738 kg) (2242 L)

Oil Tank Capacity:
Maximum 2x 2.5 US gal. (2x9.45 L)

Approved Kinds of Operation:
- VFR flights, day and night,
- IFR flights, day and night

Prohibited Kinds of Operation:
- Flight into known or forecast icing is prohibited unless the PZL ice protection system (IPS) is installed. (See Note 8 and Note 9)

Landing Gear:
- Non-retractable, tricycle type.
- Main Gear: rocker-type with a single-chamber shock absorber,
- Nose Gear: rocker-type, with a two-chamber shock absorber,
- Nose Wheel rotation angle: ± 15º
- Nose Wheel castoring angle with steering OFF: ± 45º

Control Surface Movements:

Ailerons:	Up	22º ± 1º
	Down	16º 20'± 1º
Aileron Trim Tab:	Up	14º ± 1º
	Down	14º ± 1º
Elevator:	Up	27º ± 1º
	Down	19º ± 1º
Elevator Trim Tab: (Elevator Neutral)	Up	15º ± 1º
	Down	25º ± 1º
Rudder LH:	Inboard	16º ± 1º
	Outboard	22º ± 1º
Rudder RH:	Inboard	16º ± 1º
	Outboard	22º ± 1º
Rudder Trim Tab: (Rudder Neutral)	Left	15º ± 1º
	Right	15º ± 1º
Wing Flaps:	Takeoff	15º ± 1º
	Landing	40º ± 1º
Spoilers:	Inboard	45º ± 1º
	Outboard	60º ± 1º

Operating Ambient Temperature Range: -85° F to +122° F (-50° C to + 50° C)

Standard Equipment: As defined in section 7 of the PZL M28 05 Airplane Flight Manual, Ref. No. M28/10/2002, Revision 6, dated February 11, 2004 or later revision.

Optional & Operational Equipment: As defined in section 9 of the PZL M28 05 Airplane Flight Manual, Ref. No. M28/10/2002, Revision 6, dated February 11, 2004 or later revision. For FIKI approved airplanes, AFM Revision 26 dated June 24, 2013 or later revision.

Outside Air Temperature Limits: -85º F to +122ºF (-50 ºC to + 50ºC)

Load Factor: SEE ABOVE

Maximum cruise altitude:

- for airplane in passenger version without oxygen (O_2) system	3,000 m (9,842 ft.)
- for airplane in cargo version without O_2 system within max. 30 min.	4,000 m (13,123 ft.)
- for airplane in cargo version with O_2 system	7,620 m (25,000 ft.)

Maximum airfield altitude: 4,000 m (13,123 ft.)

Service Life Limits: Airframe Service Life: 8000 flight hours or 8000 takeoff-landing (whichever is first)*. Components: as listed in Chapter 4 of Maintenace Manual, Ref No. M28/11/2002, Revision 6 dated March 5, 2004, or later FAA approved revision.

* 25000 flight hours or 30000 takeoff-landings (whichever occurs first), on condition that modifications per service bulletin (SB) no E/12.101R3/2014 (or later) must be accomplished within airplane life range of 7800-8000 flight hours or landings (whichever is first).
This life extension requires M28/11/2002, Revision 52, dated May 11, 2015 or later FAA approved revisions. (See NOTE 7).

Serial Nos. Eligible

M28 05 with serial number AJE00302 and subsequent, are eligible for import into the United States. See Details under Import Requirements below.

Certification Basis

The regulations (unless otherwise stated) are Title 14 of the Code of Federal Regulations (14CFR):

14 CFR Part 23 dated February 1, 1965, as amended through Amendment 23-42 effective February 4, 1991 with the exception of
14 CFR Part 23 Sections 23.49, 23.201, 23.203, 23.207 and 23.1545, which are at Amendment 50;
14 CFR Part 23 Section 23.1309 is at Amendment 49;

14 CFR Part 34 dated September 10, 1990, as amended through Amendment 34-3 effective February 3, 1999;

14 CFR Part 36 dated December 1, 1969, as amended through amendment in effect on the date of issuance of the U.S. type certificate (currently Amendment 36-24 effective August 7, 2002).

Equivalent Safety Items:

Equivalent levels of safety finding made per the provision of 14 CFR Part 21.21(b)(1) for:

ELOS ACE-03-02: 14 CFR 23 § 23.1361(a). Master Switch Arrangement; Refer to FAA memorandum dated January 12, 2004.

Special Conditions: High Intensity Radiated Fields, (HIRF), Number 23-142-SC, dated December 18, 2003.

Flight into known icing is not approved on this airplane unless the PZL IPS is installed see below and Note 8 and Note 9.

Date of Application for U.S. Type Certificate June 18, 1996.

The Civil Aviation Office (CAO) of Poland originally type certificated this aircraft under its type certificate Number BB-216. The FAA validated this product under U.S. Type Certificate Number A56CE. Effective October 24, 2005, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of Poland. The EASA TCDS number is EASA.A.058.

For life extension modification
(SB E/12.101R2/2013) (NOTE 7)

The certification basis is the same as the original certification basis shown above with the following additional regulations at a higher amendment level:

14 CFR Part 23 Sections 23.572(b), 23.574 (b), 23.575 and 23.629(i) which are at Amendment 48;

Flight into known icing modification
Ice protection system (IPS) installed
and operational (NOTE 8 and NOTE 9)

The certification basis is the same as the original certification basis shown above with the following additional regulations at a higher amendment level:

14 CFR Part 23 Section 23.1419 at Amendment 43;

14 CFR Part 23 Section 23.1525 at Amendment 45;
14 CFR Part 23 Sections: 23.775, 23.1307, 23.1323, 23.1326, 23.1351, 23.1353, and 23.1431 at Amendment 49;

14 CFR Part 23 Sections 23.63, 23.67, 23.69, 23.75, 23.1325, 23.1559, 23.1581, 23.1583 and 23.1585 at Amendment 50;

14 CFR Part 23 Sections 23.929, 23.975,and 23.1093 at Amendment 51;
14 CFR Part 23 Sections 23.901 at Amendment 53;
14 CFR Part 23 Sections 23.903(a) at Amendment 54;
14 CFR Part 23 Sections 23.73 at Amendment 62

Validation Basis

The applicable airworthiness requirements for a U.S. certification under 14 CFR 21 section 21.29 identified above were established considering the airworthiness requirements applied by the responsible exporting Polish civil aviation authority under the Bilateral Aviation Agreement (BAA) authorized by the Agreement between the Government of the Poland and the Government of the United States of America, including the Amendment to the Annex, dated February 9, 2004, that allows Commuter Category airplanes from Poland.

This Type Certificate was issued pursuant to the certification by the CAO that the PZL Model M28 05 complies with the above requirements.

The CAO issued Polish Type Certificate No. BB-216, dated April 18, 2002, as described in CAO TCDS No. BB-216 Revision 2, dated September 17, 2002.

Import Requirements

The FAA can issue a U.S. airworthiness certificate based on an NAA Export Certificate of Airworthiness (Export C of A) signed by a representative of the Civil Aviation Office (CAO) of Poland on behalf of the European Community. The Export C of A should contain the following statement: 'The aircraft covered by this certificate has been examined, tested, and found to comply with U.S. airworthiness regulations 14 CFR Federal Aviation Regulations Part 23, U.S. Type Certificate No. A56CE and to be in a condition for safe operation.'

Refer to the applicable bilateral agreement to verify eligibility for import into the United States of both new and used aircraft based on the scope of the agreement, to identify any required statements by the exporting authority on the export certificate of airworthiness (or equivalent document), and for procedures for coordinating exceptions to conformity statements on these documents. Refer to FAA Order 8130.2, *Airworthiness Certification of Aircraft*, for requirements for issuance of an *airworthiness certificate* for imported aircraft.

SEE NOTE 6 – for limitation for icing equipment. Serial number AJE00310 and subsequent have the icing protection system (IPS) for inadvertent icing encounters only installed at the factory.

Model PZL M28 05 airplane without any other letter associated on the model designation and with serial numbers AJE00302 and subsequent are eligible for a U.S. Standard Airworthiness Certificate.

Note: For example, if an airplane is model number M28 05 W, it is not eligible for the U.S. Standard Airworthiness Certificate.

Note: M28 05 airplanes with the following serial numbers are not eligible for U.S. Standard Airworthiness Certificate:
AJE001-XY (where XY equals 01 through 99);
AJE002-XY (where XY equals 01 through 99);
or AJE00-301

Note: The Serial number system of the M28 05 is as follows:

AJEUWXYZ

where the AJE is the article code of M28; the UWX is the series number or production batch number (FIRST three digits) eg 003, 004 999, where 999 is highest possible number of production batch; the YZ is the number of an airplane in series (last two digits) eg 01,02 .14 .99, where 99 is a highest possible number of an airplane in one production batch.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification. Such equipment is listed in the current FAA approved Airplane Flight Manual (AFM), Revision 6, dated February 11, 2004, or later approved revisions. Serial Number AJE00310 and subsequent that has the IPS, TCAS II and Garmin GNS430AW systems installed at the factory must use AFM revision 15, dated November 18, 2008 or later approved revisions.
AFM revision 26 dated June 24, 2013 or later required for FIKI airplanes

Service Information

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before October 24, 2005 – by the Civil Aviation Office (CAO) of Poland.

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

The FAA accepts such documents and considers them FAA-approved for type design data only unless one of the following conditions exists:

- The documents change the limitations, performance, or procedures of the FAA approved manuals; or

- The documents make an acoustical or emissions changes to this product's U.S. type certificate as defined in 14 CFR § 21.93.

The FAA uses the post type validation procedures to approve these documents. The FAA may delegate on case-by-case to EASA to approve on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.

Each airplane is provided with the following approved documents:

a) PZL M28 05 Airplane Flight Manual, Ref. No.: M28/10/2002, Revision 6, dated February 11, 2004 or later FAA approved revision.
M28-05 with serial numbers AJE00310 and subsequent should have AFM Revision 15, dated November 18, 2008 or later FAA approved revisions.
AFM revision 26 dated June 24, 2013 or later required for FIKI airplanes.

b) PZL M28 Maintenance Manual (MM), Ref. No.: M28/11/2002, Rev. 6, dated March 5, 2004, or later FAA approved revision, including Chap. 4: "Airworthiness Limitations" and Chap. 5: "Time Limits/ Maintenance Check".
M28-05 with serial numbers AJE00310 and subsequent should have MM Revision 14, dated November 7, 2008 or later FAA approved revisions.
For airplanes with life extension per SB E/12.101R3/2014, MM revision 52 dated May 11, 2015 or later FAA approved revisions. (NOTE 7).
MM Rev 33 dated June 24, 2013 or later required for FIKI approved Airplanes. (NOTE 8 and NOTE 9)

Service Information (cont)

c) PZL M28 Repair Manual, Ref. No.: M28/1/2001, Rev. 2, dated October 10, 2003 or later CAO approved revisions.

NOTES:

NOTE 1. Current weight and balance data including list of equipment included in the certificated empty weight and loading instructions, when necessary, must be provided for each airplane at the time of original certification, and remain with the airplane at all times thereafter. The certificated empty weight and corresponding center of gravity locations must include the following:

Unusable fuel of 36 L (28 kg) {62 lbs.; 9.5 US gal}

NOTE 2. Airplane operation must be in accordance with the CAO approved Airplane Flight Manual listed above. All placards listed in Section 2 must be displayed in clear view of the pilot.

NOTE 3. Airworthiness Limitations are specified in the Section 2 LIMITATIONS chapter of the Flight Manual and Chapter 4 of the Instructions for Continued Airworthiness (Maintenance Manual) and are approved by EASA and the FAA. These LIMITATIONS specify mandatory replacement times, and operating limitations, and may not be changed without FAA approval.

Revisions to the Airworthiness Limitations must be approved by the FAA. The inspections, maintenance, repair and painting must be accomplished according to the Maintenance Manual or other procedures acceptable to the FAA.

NOTE 4. Information essential for the proper operation, maintenance and inspection of the airplane is contained in the Model PZL M28 05 Flight Manual and Maintenance Manual.

NOTE 5. All avionics installed in this aircraft must meet the applicable FAA Technical Standard Order (TSO) and/or equivalent FAA approved safety requirements.

NOTE 6. M28 05 airplanes with serial numbers (S/N) AJE00310 and subsequent have type design change of installation of the ice protection system (IPS), approved on non-hazard basis only, installed at the factory. These airplanes are not approved for flight into known icing at this time. M28 05 airplanes with S/N AJE00302 up to AJE00309 do not have this IPS for inadvertent icing encounters and will only have the IPS if the manufacture develops a service bulletin for retro fit at a later time. Currently no service bulletin exists.

NOTE 7. PZL life extension project was validated as FAA projects TD00415CE-A, AT00705CE-A and AT00762CE-A. PZL electected to use later amendments of several of the structures regulations. See certification basis for details. If operators wish to extend their airframe service life to 25000 flight hours or 30000 takeoff- landings (whichever occurs first), they must incorporate SB E/12.101R3/2014 (or later) and use chap 4 of Rev 52 of MM M28/10/2002 dated May 11, 2015 or later FAA approved revisions. Any repairs/modifications done to airplanes with this modification must comply with the certification basis listed above on this TCDS.

NOTE 8. Flight in known icing condition is permitted, when certified IPS (ice protection system) is installed and is operational. This applies to S/N AJE00339 and up when this optional equipment is installed at the factory. When this option is installed at the factory, the airplane logbook and records will be noted before delivery from the factory. The airplane will have the supplement No. 9.130 in the AFM as mandatory and the airplane will have a placard (on the upper control panel in the cockpit) with appropriate statement - see Sec. 2.23 and Sec. 2.39 of this supplement: " **THIS AIRPLANE HAS THE FULL ICING PROTECTION SYSTEM FITTED AND IS CERTIFIED FOR FLIGHT INTO KNOWN AND FORECAST ICING CONDITIONS**".

NOTE 9. Flight in known icing condition is permitted, when certified IPS (ice protection system) is installed and is operational. This applies to prior airplanes with Bulletin no. E/12.115/2013 “Installation of ice protection system certified for flight in known and forecast icing conditions” incorporated. AFM Revision 26 dated June 24, 2013 and A MM Rev 33 dated Jun 24, 2013 or later required for FIKI approved airplanes.

.....END.....