

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

A42CE
Revision 4
LETECKÉ ZÁVODY a.s.
L-420
September 26, 2005

TYPE CERTIFICATE DATA SHEET NUMBER A42CE

This data sheet, which is part of Type Certificate No. A42CE, 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 Aircraft Industries a.s.
686 04 Kunovice 1177
Czech Republic

Type Certificate Holder Record: LETECKÉ ZÁVODY a.s. transferred TC A42CE to Aircraft Industries a.s. on September 26, 2005.
LET Aeronautical Works transferred TC A42CE to LETECKÉ ZÁVODY a.s. on October 15, 2002.

I. Model L-420 (Commuter Category) approved March 11, 1998.

<u>Engines</u>	Walter, a.s.	WALTER Type Certificate Quantity	M601F E00048EN Two (2)
-----------------------	--------------	--	------------------------------

<u>Fuel</u>	T-1	according to	ST SEV 5024-85	or	GOST 10227-86		
	TS-1	according to	ST SEV 5024-85	or	GOST 10227-86	or	CSN 656 520
	RT	according to	ST SEV 5024-85	or	GOST 10227-86	or	CSN 656 520
	PL-6	according to	PND 25005-76				
	PL-7	according to	PND 25005-92				
	JET-A	according to	ASTM-D1655-89				
	JET A-1	according to	ASTM-D1655-89	or	DERD 2494		
	PSM 2	according to	PN-86/C-96026				

<u>Engine Limits</u>	Maximum propeller shaft horsepower	Maximum propeller speed (rpm)	Maximum propeller shaft torque (lb-ft)	Maximum gas generator speed (% of 36,660 rpm)	Interturbine temperature (°C)
Maximum Takeoff (5 minutes)	777	2,080	1,964	101.0	765
Maximum Continuous	777	2,080	1,964	100.0	750
Takeoff with water injection (5 minutes)	777	2,080	1,964	100.0	735

Page No.	1	2	3	4	5	6	7
Rev. No.	4	1	-	1	3	1	3

Notes: The engine ratings are based on the following conditions:

Compressor intake screen installed

Static (V = 0 knots) operation

No air bleed

No external accessory loads

Maximum Takeoff (5 minutes)

Compressor inlet air at 29.43 in.-hg, 86°F/30°C

Maximum Continuous

Compressor inlet air at 29.92 in.-hg, 77°F/25°C

Takeoff with water injection (5 minutes)

Compressor inlet air at 28.74 in.-hg, 80.6°F/27°C

Propeller and Propeller Limits

Propeller	AVIA-Hamilton Standard Aviation Ltd.	Five blade	V510
		Type Certificate	P2BO
		Quantity	Two (2)
	Pitch setting measured at 68.82 inch diameter	Feather	+79.5°
		Low	+14°
		High	+79.5°
		Reverse	- 24°
	Diameter:	Maximum	90.63 inches
		Minimum	90.47 inches
		No further reduction permitted below minimum diameter.	
	Speed	Maximum	2080 rpm
	Power	Maximum	779 hp
Pitch-Control	Speed Limiter		065-2600
	Hydraulic Regulator		LUN 7816-8
	Electro-Hydraulic Actuator		LUN 7880-01-8
De-ice	Auxiliary Pump		LUN 7840-8
	Pressure Switch		LUN 1492.04-8
	Timing Relay		LUN 2601.01-8
	Timer		LUN 3193.1-8
	Brush Block Assembly		LUN 7850-7
Rotation	Clockwise viewed from slip stream		
Spinner			068-4000

Note: Certified propeller assembly number is VJ8.510 and includes all listed components.

Airspeed Limits

All speeds are indicated airspeeds.

Maximum operating speed		V _{MO}	202 knots	232 mph
Maximum maneuvering speed		V _A	147 knots	169 mph
Maximum speed in turbulence		V _B	140 knots	161 mph
Maximum dive speed		V _D	236 knots	271 mph
Maximum landing gear operating speed		V _{LO}	160 knots	184 mph
Maximum landing gear extended speed		V _{LE}	160 knots	184 mph
Maximum flaps extended speed	for flaps 18°	V _{FE}	160 knots	184 mph
	for flaps 42°	V _{FE}	113 knots	130 mph
Maximum flaps operating speed	for flaps 18°	V _{FO}	160 knots	184 mph
	for flaps 42°	V _{FO}	113 knots	130 mph
Minimum control speed, OEI, (air)	for flaps 18°	V _{MCA}	84 knots	96 mph
	for flaps 0°	V _{MCA}	95 knots	109 mph
Minimum control speed OEI, (ground)	for flaps 18°	V _{MCG}	76 knots	87 mph
	for flaps 0°	V _{MCG}	89 knots	102 mph

Center of Gravity (C.G.) Range

All C.G.'s are with landing gear extended.

Mean Aerodynamic Chord (MAC)		75.50 inches		
		MAC leading edge located at station 86.26		
Forward	C.G. at	9,920 lbs.	19 percent of MAC	Station 100.59
Forward	C.G. at	14,550 lbs.	26 percent of MAC	Station 105.91
Aft	C.G. at	14,550 lbs.	30 percent of MAC	Station 108.90

Notes: Forward C.G. ranges linearly between 11,020 and 14,550 lbs. For weights below 11,020 the forward C.G. is constant at 19 percent MAC.
Effect of landing gear retraction is 0.217 percent MAC forward.
See Note 1 for additional information on weight and balance.

Empty Weight None
C.G. Range

Datum Reference point No. 2 marked on fuselage, located 107.48 in. behind the fuselage nose.
Station locations are numbered aft positive and forward negative.

Leveling Means With empty aircraft on jacks in basic configuration with extended landing gear:
Lateral direction Set by means of leveling points No. 19 on the left and right wing with a maximum difference of 0.039 inch (1 mm).
Longitudinal direction Set by means of leveling points No. 1 and 7 on the fuselage with a maximum difference of 0.039 inch (1 mm).

Maximum Weight	Maximum ramp weight	14,594 lbs.
	Maximum takeoff weight	14,550 lbs.
	Maximum landing weight	14,109 lbs.
	Maximum zero fuel weight	13,007 lbs.

Note: All maximum weights listed above include the following fluids: unusable fuel, engine oil, hydraulic fluid, and water for injection (see Note 1 for fluid weights).

Minimum Crew Two (2) pilots at station 4.06. Pilot-in-Command is on the left viewed looking forwards.

Number of Seats.	Seat Moment Arm	Passenger Version		Cargo Version
		19 seats	17 seats	3 seats
Station	48.62	3	3	-
Station	78.54	3	3	-
Station	108.46	3	3	-
Station	138.39	3	3	-
Station	168.31	3	3	-
Station	198.23	2	2	1
Station	228.15	2	-	2

Maximum Baggage	All versions	(front) 234 lbs. at station -52.48.
		Maximum baggage floor loading density 81.9 lb/ft ²
		Maximum passenger floor loading density 81.9 lb/ft ²
	19 passenger version	(rear) 331 lbs. at station 261.81.
	17 passenger version with small baggage compartment and toilet	(rear) 331 lbs. at station 237.60.
	17 passenger version with large baggage compartment and toilet	(rear) 331 lbs. at station 261.81.
	17 passenger version with large baggage compartment without toilet	(rear) 500 lbs. at station 249.61.
	Cargo version	(rear) 331 lbs. at station 261.81.
	2,204 lbs. total cargo located at	1,102 lbs. at station 138.39.
		1,102 lbs. at station 78.74.

Fuel Capacity	Wing tanks	2,204 lbs. at station 123.39. 20 lbs. unusable fuel.
	Optional wing tip tanks	692 lbs. at station 122.20 8 lbs. unusable fuel.

<u>Oil Capacity</u>	Oil tank capacity per engine	maximum	1.85 gallons at station 72.56.
		minimum	1.45 gallons at station 72.56.
<u>Maximum Operation Altitude</u>	Pressure altitude for Normal operations		20,000 ft (14,000 ft. for S/N 922729A see Note 4)
	Pressure altitude for takeoff and landing		13,120 ft

Control Surface Movements

Unless otherwise specified, the angle of deflection is between the control surface chord and the [wing, stabilizer, fin] chord. Reference (0°) is the neutral position.

Aileron			Up	27°	+ 1°	- 1°
			Down	14°	+ 1°	- 1°
Left aileron trim tab			Up	20°	+ 2°	- 2°
			Down	20°	+ 2°	- 2°
Wing Flaps	outer sections	Takeoff	Down	18°	+ 1°	- 1°
		Landing	Down	42°	+ 1°	- 1°
	inner sections	Landing	Down	52°	+ 1.5°	- 0°
Ground spoilers			Up	72.5°	+ 2°	- 2°
Automatic Bank Control Tab			Up	55°	+ 2°	- 2°
Elevator			Up	30°	+ 1°	- 1°
			Down	14°	+ 1°	- 1°
Elevator trim tab			Up	10°	+ 1°	- 1°
			Down	16°	+ 1°	- 1°
Rudder (measured parallel to 0.0 W.L.)			Left	17°	+ 0°	- 0.5°
			Right	17°	+ 0°	- 0.5°
Rudder trim tab (measured parallel to 0.0 W.L.)			Left	10°	+ 0°	- 1°
			Right	10°	+ 0°	- 1.5°
Nose Wheel Steering	Manual		Left	50°	approx.	
			Right	50°	approx.	
	Pedal (Takeoff, Landing)		Left	4.5°	+ 1.5°	- 0°
			Right	4.5°	+ 1.5°	- 0°

Manufacturer's Serial Numbers 92-27-29A and subsequent.

When eligible, each airplane must have unique manufacturer's serial number in the format: **YY-BB-NNA**; where "YY" is the year of manufacture, "BB" is the batch number, "NN" is the aircraft number (in the batch), immediately followed by the letter A.

Import Requirements

When eligible, a U.S. Standard Airworthiness Certificate may be issued on the basis of a Czech Republic Certificate of Airworthiness for Export signed by an authorized representative of the Czech Republic Civil Aviation Authority (CAA) containing the following statement:

“The model L-420 airplane covered by this Certificate has been examined, tested, and found to conform to the Type Design (Drawing number of B500 300 N series, latest FAA approved revision) approved under U.S. Type Certificate A42CE and to be in a condition for safe operation”

For eligible aircraft with previous time in service, the airframe, engine, and propeller total times and times since overhaul, where appropriate, must be furnished. In addition, the status of all life limited components must also be furnished.

Instructions for Continued Airworthiness complying with 14 CFR 23.1529, must be furnished before delivery of the first airplane or issuance of a U.S. standard certificate of airworthiness, whichever occurs later.

Certification Basis

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

- 1) Date of original application for U.S. Type Certificate, March 11, 1991
- 2) 14 CFR 21.29, 21.183(c), and 21.50(b) effective February 1, 1965 including Amendments 21-1 through 21-70 effective December 31, 1992.
- 3) 14 CFR part 23 effective February 1, 1965, including amendments 23-1 through 23-41 effective November 26, 1990.
- 4) 14 CFR part 36 effective November 18, 1969, including Amendments 36-1 through Amendment 36-20.
- 5) 14 CFR part 34 effective September 10, 1990
- 6) Czech Republic Civil Aviation Authority (CAA) issued Czech Republic Type Certificate No 98-01, dated March 11, 1998.
- 7) Exemptions: None
- 8) Equivalent Level of Safety: None
- 9) The airplane is approved for ditching.
- 10) The airplane is approved for flight in the full range of icing conditions according to 14 CFR part 25, Appendix C.

Validation Basis

Type Certificate was issued pursuant to FAR 21.29(a) in validation of a Czech Republic Civil Aviation Authority (CAA) certification of compliance with the above mentioned Certification Basis

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for airworthiness certification, (Manufacturer’s Minimum Equipment List Do-L410-1312.2 dated September 1, 1997 or later approved revision). In addition, the following items of equipment are required:

Czech CAA approved Airplane Flight Manual Do-L410-1311.2 dated March 11, 1998 or later approved revision.

Notes

Note 1 Current weight and balance report including list of equipment in certificated empty weight, and loading instructions, when necessary, must be provided for each aircraft at the time of original certification

The certificated empty weight and corresponding center of gravity positions include the weight of unusable fuel, engine oil, hydraulic fluid in tanks and in the systems as noted below:

Unusable fuel	29.2 lbs.
if wing tip tanks installed	+ 8 lbs.
Oil	47.6 lbs.
Hydraulic fluid	39.4 lbs.

Water for Water Injection Tank (not included in empty weight), maximum	Station 101.1	49.6 lbs.
--	---------------	-----------

Note 2 Required placards are shown in the Airplane Flight Manual.

Note 3 Service bulletins, structural repair manuals, vendor manuals, aircraft flight manuals, and overhaul and maintenance manuals, which are approved by the Czech Republic Civil Aviation Authority (CAA) [and contain a statement to that effect], are accepted by the FAA and are considered FAA approved. These approvals pertain to the type design only.

Available documents applicable to the LET Model L-420 series:

Airplane Flight Manual Do-L410-1311.2 (see required equipment).

Instructions for Continued Airworthiness (Maintenance Manual) Do-L410-1233.2 dated March 15, 1993 and (Maintenance Schedule) Do-L410-1224.2 dated September 19, 1998 or later approved revisions.

M-601 Engine Maintenance Manual dated October 1, 1995 and M601 Engine Operational Manual dated July 1, 1996 or later approved revisions.

V-510 Propeller Maintenance Manual 068-8912.7 dated July 30, 1985 or later approved revision.

Note 4 The Czech CAA issued AD No. CAA-AD-T-037/2001R2, dated October 20, 2004, which included Model L-420 with serial number S/N 922729A that has not had mandatory Service Bulletin No. L-420/009a accomplished. Per the CAA issued AD, the following must be accomplished, before further flight, limit the maximum flight level from 20000 ft. to 14000 ft. Operators affected by this CAA AD should insert this AD into Aircraft flight Manual Section 2 page 2-4. Values of flight levels and Maximum Operating Limit Speeds mentioned in placard located near air speed indicator (in range from 14000 ft to 20000 ft) should be sealed up by foil with red color notice "DO NOT USE". Modify by installing a placard in clear view to both pilots stating: "MAXIMUM FLIGHT LEVEL 14000 ft". Reason for CAA AD: Incorrect indication of Maximum Operating Limit Speed Vmo in flight levels from 14000 to 20000 ft.

- END -