

A41CE
Revision 8
Magnaghi Aeronautica .S.p.A.
Sky Arrow 650 TC
Sky Arrow 650 TCN
September 7, 2017

Page No.	1	2	3	4	5	6
Rev. No.	8	5	5	7	7	6

Maximum Weight	At takeoff	1,433 lb. (650 kg)
	At landing	1,433 lb. (650 kg)
Center of Gravity Limits	<p>From 111.8 in (26% MAC) to 114.2 in (30% MAC) at 1,433 lb or less. From 111.8 in.(26% MAC) to 115.3 in.(32% MAC) at 1433 lb. or less (See note 7) Maximum forward at 111.02 in (24.5% MAC) at 1,323 lb. or less. Maximum backward at 117.3 in (36% MAC) at 959 lb or less. Maximum backward at 118.6 in.(38% MAC) between at 1212 lb. or less. (See note 7) Maximum backward at 117.3 in (36% MAC) at 1,292 lb or less (See note 9). Linear variation for intermediate weights.</p>	
Reference Lines	Vertical tangent to the nose.	
Leveling References	Spirit level, placed on the floor between the two seats	
Minimum Crew	1 pilot (front seat)	
Maximum Crew	2 (front at 67.3 in behind the reference line) (rear at 102.4 in behind the reference line)	
Maximum Baggage Weight	66 lb. at 102.4 in behind the reference line 33 lb. at 119.0 in. behind the reference line. (See note 7) 40 lb at 102.4 in behind the reference line (See note 10)	
Fuel Capacity	Total 18 gal at 121.6 in behind the reference line, usable 17.8 gal	
Oil Capacity	Maximum	3.17 qts
	Minimum	2.11 qts (at 137.8 in before the reference line)
Cooling Liquid Capacity	Maximum	2.43 qts
	Minimum	2.32 qts
Control Surface Range	Ailerons	down $14^{\circ} \pm 2^{\circ}$ / up $20^{\circ} \pm 2^{\circ}$
	Elevator	down $14^{\circ} \pm 2^{\circ}$ / up $22^{\circ} \pm 2^{\circ}$
	Flaps	down $30^{\circ} \pm 1^{\circ}$
	Rudder	lh $23^{\circ} \pm 2^{\circ}$ / rh $23^{\circ} \pm 2^{\circ}$
	Trim	down $16^{\circ} \pm 1^{\circ}$ / up $10^{\circ} \pm 1^{\circ}$ down $19^{\circ} \pm 1^{\circ}$ / up $12^{\circ} \pm 1^{\circ}$ (See note 7)
Applicable Serial Numbers	C-001 and up	
Import Requirements	A U.S. Standard Airworthiness Certificate may be issued in the "VLA - Special Class" category on the basis of a Certificate of Airworthiness for Export endorsed by a representative of Registro Aeronautico Italiano (RAI) containing the following statement: "The aircraft covered by this certificate has been examined, tested and found to conform to the type design approved under Type Certificate No. A41CE and is in a condition for safe operation.	
Certification Basis	Airframe Certification JAR-VLA thru amendment VLA/92/1 effective January 1, 1992	
	Noise Certification	

Has demonstrated compliance to FAR 36, Appendix G, effective December 1, 1969, as amended through 36-21 effective December 28, 1995.

Engine Certification

Rotax 912 A2 - JAR 22 Chapter H
Rotax 912 F2 - FAR 33

Propeller Certification

Tonini GT-2/166/145-FW/101-SLPC JAR 22, Chapter J
Hoffman HO (TC P26NE) FAR 35

Equipment

The standard equipment indicated in the pertinent airworthiness rules (see the certification basis) must be installed on the aircraft.

In addition, the following equipment is required:

Sky Arrow 650TC Flight Manual J.V. 14.5 F, issued March 27, 1997.

Sky Arrow 650TC and TCN Flight Manual J.V. 14.20, issued July 1, 1998.

(See note 7)

II - Model Sky Arrow 650TCN (JAR-VLA), approved April 17, 1998

Engine

Rotax 912F

Fuel

AVGAS min. grade 100LL
MOGAS min. grade 90 octane

Lubricant

See Flight Manual J.V. 14.17F issued February 23, 1998
See Flight Manual J.V. 14.20 issued July 1, 1998 (See note 7)

Engine Limitation

Maximum at takeoff - 5 min. 59.6 kW (81 HP) at 5,800 RPM
Maximum continuous 58.0 kW (79 HP) at 5,500 RPM

Propeller and Propeller Limitations

Wooden/composite propeller, two bladed, fixed pitch
Hoffman HO (TC P26NE)
Diameter Max. 65.82 in. Min 65.63 in.
Blade angle at 75% 21 °

Airspeed Limits

V_{NE} (Never exceed speed) 132 kts
V_{NO} (Structural cruising speed) 104 kts
V_A (Manuvering speed) 90 kts
V_{FE} (Flap extended speed) 67 kts

Maximum Weight

At takeoff 1,433 lb. (650 kg)
At landing 1,433 lb. (650 kg)

Center of Gravity Limits

From 111.8 in (26% MAC) to 114.2 in (30% MAC) at 1,433 lb or less.
From 111.8 in.(26% MAC) to 115.3 in.(32% MAC) at 1433 lb. or less
(See note 7)
Maximum forward at 111.02 in (24.5% MAC) at 1,323 lb. or less.
Maximum backward at 117.3 in (36% MAC) at 959 lb or less.
Maximum backward at 118.6 in.(38% MAC) between at 1212 lb. or less. (See note 7)
Maximum backward at 177.3 in (36% MAC) at 1,292 lb or less (See note 9)
Linear variation for intermediate weights.

Reference Lines	Vertical tangent to the nose.	
Leveling References	Spirit level, placed on the floor between the two seats	
Minimum Crew	1 pilot (front seat)	
Maximum Crew	2 (front at 67.3 in behind the reference line) (rear at 102.4 in behind the reference line)	
Maximum Baggage Weight	66 lb. at 102.4 in behind the reference line 33 lb. at 119.0 in. behind the reference line. (See note 7) 40 lb at 102.4 in behind the reference line (See note 10)	
Fuel Capacity	Total 18 gal at 121.6 in behind the reference line, usable 17.8 gal	
Oil Capacity	Maximum	3.17 qts
	Minimum	2.11 qts
	(at 137.8 in before the reference line)	
Cooling Liquid Capacity	Maximum	2.43 qts
	Minimum	2.32 qts
Control Surface Range	Ailerons	down $14^{\circ} \pm 2^{\circ}$ / up $20^{\circ} \pm 2^{\circ}$
	Elevator	down $14^{\circ} \pm 2^{\circ}$ / up $22^{\circ} \pm 2^{\circ}$
	Flaps	down $30^{\circ} \pm 1^{\circ}$
	Rudder	lh $23^{\circ} \pm 2^{\circ}$ / rh $23^{\circ} \pm 2^{\circ}$
	Trim	down $16^{\circ} \pm 1^{\circ}$ / up $10^{\circ} \pm 1^{\circ}$
		down $19^{\circ} \pm 1^{\circ}$ / up $12^{\circ} \pm 1^{\circ}$ (See note 7)
Applicable Serial Numbers	CN 001 and up	
Certification Basis	<p>Airframe certification</p> <p>JAR/VLA thru amendment VLA/92/1 effective January 1, 1992</p> <p>FAR 23 Amendment 41, limited to sections 23.1351, 23.1357, 23.1381, 23.1383, 23.1385, 23.1387, 23.1395, 23.1397, and 23.1401.</p> <p>Noise certification</p> <p>Has demonstrated compliance to FAR 36, Appendix G, effective December 1, 1969, as amended through 36-21 effective December 28, 1995.</p> <p>Engine certification FAR 33</p> <p>Propeller certification FAR 35</p> <p>The Ente Nazionale per l'Aviazione Civile (ENAC) originally type ertificated this aircraft under its Type Certificate Number A343. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product under their Type certificate Number A343 on behalf of Italy.</p>	
Equipment	<p>The standard equipment indicated in the pertinent airworthiness rules (see the certification basis) must be installed on the aircraft. In addition, the following equipment is required:</p> <p>Sky Arrow 650TCN Flight Manual J.V. 14.17F, issued March 27, 1998.</p>	

Sky Arrow 650TC and TCN Flight Manual J.V. 14.20, issued July 1, 1998.
(See note 7)

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 the Ente Nazionale per l'Aviazione Civile (ENAC) 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 ENACs TC No A343 approved under U.S. Type Certificate No. A 41CE and to be in a condition for safe operation".

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 September 28, 2003- by the Ente Nazionale per l'Aviazione Civile (ENAC)

- 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 unless one of the following condition 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.

- Note 1 When first receiving the airworthiness certificate, each aircraft must be issued an updated Weight and Balance report where all the equipment which is part of the empty weight is listed.
- Note 2 650TC - All placards specified in Flight Manual J.V.14.5F must be displayed in the aircraft in the appropriate locations.
650TCN - All placards specified in Flight Manual J.V. 14.17F must be displayed in the aircraft in the appropriate locations.
BOTH MODELS - All placards specified in Flight Manual J.V. 14.20 must be displayed in the aircraft in the appropriate locations. (see Note 7)
- Note 3 As JAR-VLA, the aircraft will receive a Standard Certificate of Airworthiness, subsection 91.205(b) of the FAR.
- Note 4 The instructions for continued airworthiness and life limits are described as follows:
Airframe: 650TC - Sky Arrow 650TC Maintenance Manual J.V.14.6F
650TCN -Sky Arrow 650TC and TCN Maintenance Manual J.V14.18F

BOTH MODELS - Sky Arrow 650TC and TCN Maintenance Manual J.V.14.22
(See note 7)

Engine: Rotax engine Maintenance Manual 912F (valid also for 912A)

Propeller - Hoffman Owner's Manual No. 0110.74

Note 5 All external surfaces exposed to sunlight must be white, with the exception of the tail numbers and the factory striping.

Note 6 Deleted

Note 7 Applicable to the following aircraft:
650TC - S/N C005 and C008 and subsequent.

650TCN - S/N CN002 and subsequent

650TC - S/N C001, C002, C003, C004, C006, C007 and 650TCN S/N CN001 when modified in accordance with Iniziative Industriali Italiane S.p.A. document J.V.1.22 dated July 2, 1998. Aircraft incorporating this modification must use Sky Arrow 650TC and TCN Flight Manual J.V. 14.20.

Note 8 650TC ONLY:
It is possible to install the Hoffman propeller with the revision to the following pages of the Flight Manual J.V. 14.5F issued on March 27,1997:

Page 1-5, para. 1.7 Propeller

Page 2-3, para. 2.4 Powerplant Limitations

Page 5-9, para. 5.5 Noise Level

Note 9 Applicable to the aircraft on which the modification n. 34/98 "Installation of the nose extension" kit n. 34-2/98 described in Company Approved Document (CAD) J.V.6.31 is applied.

Note 10 Applicable to the aircraft on which the modification n. 33/98 "Installation of the above rear seat baggage container" kit n. 33-2/98 described in Company Approved Document (CAD) J.V.6.31 (E) is applied.

Note 11 If one or more of the following modifications:
- n. 33/98 "Installation of the above rear seat baggage container" kit n. 33-2/98
- n. 34/98 "Installation of the nose extension" kit n. 34-2/98
- n. 39/98 "Modification of the main electrical system",
described in Company Approved Document (CAD) J.V. 6.31 (E), are applied, the flight manual J.V. 14.20 rev. 2 and following revisions must be used.
If one or more of the modifications described in Company Approved Document (CAD) J.V. 6.31 (E), except for modification kit 15-1/98, 15-2/98, 33-1/98, 34-1/98, 35-1/98 and 38-1/98 are applied, the maintenance must be carried out according to the maintenance manual J.V. 14.22 rev. 1 and following revisions.

-END-