

Department of Transportation Federal Aviation Administration

## Supplemental Type Certificate

*Number* SH127WE

(This is a duplicate to replace the original which was lost. Issued 8/30/02)

*This certificate, issued to* **Whisper Jet, Inc.**  
**2923 Carrier Ave.**  
**Sanford, FL 32773**

*certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part of the Regulations, See Page 5? of this STC for certification basis.*

*Original Product—Type Certificate Number:* 1H4  
*Make:* Sikorsky  
*Model:* S-55, S-55B, S-55C

*Description of the Type Design Change:* Installation of AiResearch TSE 331-3U-303N engine and related changes in accordance with FAA Sealed Aviation Specialties Master Drawing List No. AS55-01-00000, Revision G, or later FAA approved revision.

*Limitations and Conditions:* The limitations and conditions of Helicopter Specification No. 1H4 apply except as outlined in pages 3 through 7 of this STC. A copy of this STC must be included in the permanent records of each airplane modified in accordance with this STC.

Approval of this change in type design applies to the above model rotorcraft only. This approval should not be extended to other rotorcraft of these models on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that rotorcraft. A copy of this Certificate and FAA Approved Rotorcraft Flight Manual Supplement 22-206-DP-01, dated September 10, 1980, or later FAA approved revision, must be maintained as part of the permanent records for the modified rotorcraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

*This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.*

*Date of application:* August 8, 1968

*Date reissued:* 1/30/74; 12/27/83; 9/27/91; 9/2/92;  
9/20/00; 8/30/02

*Date of issuance:* May 13, 1971

*Date amended:* 6/25/71; 9/9/71; 1/10/73; 6/13/73;  
8/30/02



*By direction of the Administrator*

(Signature)

Acting Manager, Seattle Aircraft  
 Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.

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# Supplemental Type Certificate

## (Continuation Sheet)

*Number* **SH127WE**

*Issued to:* Whisper Jet, Inc.

*Date of Issuance:* May 3, 1971

*Date of Reissuance:* 1/30/74; 12/27/83; 9/27/91; 9/2/92; 9/20/00; 8/30/02

*Date Amended:* 6/25/71; 9/9/71; 1/10/73; 6/13/73; 8/30/02

*Limitations and Conditions:* (cont'd)

I – Sikorsky S-55, S-55B, or S-55C as modified by this STC

Engine	AiResearch TSE 331-3U-303N conforming to AiResearch Equipment List No. 894870, Revision C, or subsequent FAA approved revision.
Fuel	Fuels conforming to AiResearch Manufacturing Company of Arizona Report PE-5064-R and revisions thereto. Not eligible for operation with aviation gasoline.
Oil	MIL-L-23699A or MIL-L-7808 type oils conforming to AiResearch Manufacturing Company of Arizona Report PE-5065-R and revisions thereto.
Engine Rating	650 SHP for all operations – (See Note 4)
Engine Limits	2,544 RPM (102.5%) maximum for all steady state operations.
Output Shaft Speed	Note: The fuel control must be rigged in accordance with AiResearch Engineering Test Instructions No. 8002 dated December 1, 1970. When so rigged, the governor droop characteristics will vary maximum RPM from 102.25 + .25% at or below an interstage turbine temperature (ITT) of 110°F to approximately 99% at an ITT of 169°F.  2606 RPM transient for 5 seconds.
Torque	1,380 lb ft (59 psi) maximum for all operations.
Interstage turbine temperature	1,693°F (923°C) maximum for all steady state operations. 2,100°F (1,149°C) one second starting transient limit.
Ambient temperature	-40°F. (-40°F C) minimum for starting -65°F. (-54°F C) minimum for operation 115.5°F. (46.4°C) minimum for sea level. Refer to the Rotorcraft Flight Manual for other altitudes.

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Oil inlet temperature	Maximum: 260°F. (127°C) for ground idle 230°F. (110°C) for all other operations Minimum: -40°F. (-40°C)
Rotor Limits	Power on: 224 rpm maximum at minimum rotor pitch 219 rpm maximum at maximum power 213 rpm minimum  Power off: 245 rpm maximum 180 rpm minimum
Airspeed limits	V <sub>NE</sub> (never exceed) 114 MPH (99 KTS) IAS at sea level. Refer to Rotorcraft Flight Manual for reduction of V <sub>NE</sub> with altitude and temperature.
C.G. range	(+125.0) to +136.0)
Maximum Weight	7200 lbs.
Number of seats	Same as basic S-55 series. See Helicopter Specification 1H4.
Maximum baggage	Same as basic S-55 series. See Helicopter Specification 1H4.
Fuel capacity	104 gal. (+116) in main tank 85 gal. (+184) in auxiliary tank See NOTE 1(b).
Oil capacity	6.25 qt. (+44.5)
Rotor blade rigging	Same as basic S-55 series except collective down travel increased 1/2°. Refer to applicable S-55 series Maintenance Manual and Aviation Specialties Maintenance Manual Supplement.
Serial Numbers eligible	Same as shown on Helicopter Specification 1H4.

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Data Pertinent to All Models

- |                     |  |
|---------------------|--|
| Datum               | 130.6 in. forward of center main rotor hub.  |
| Leveling means      | Plumb line from top of cargo door frame.   |
| Certification Basis | <ol style="list-style-type: none"><li>CAR 6, effective May 24, 1946</li><li>The following portions of FAR 29 (Category B) including Amendment 29-1 through 29-3:<br/><br/>29.95; 29.27; 29.33; 29.45; 29.73(b); 29.143; 29.901 through 29.921; 29.927 through 29.961; 29.997 through 29.1203; 29.1303(e); 29.1305; 29.1337; 29.1505; 29.1509(c); 29.1519; 29.1521; 29.1529; 29.1549 through 29.1555; 29.1557(c); 29.1559; 29.1583(b); 29.1587(b).</li><li>Special conditions 29-26-WE-9, dated June 23, 1970 and Amendment 1 dated November 3, 1970 thereto.</li></ol> |
| Production Basis    | None. An in-flight operation check must be conducted in accordance with FAR 91.167(a) for each aircraft modified to incorporate this Supplemental Type Certificate. When original airworthiness certification has not previously been accomplished, the applicant must also comply with FAR 21.130 and 21.183(d).  |
| Equipment           | <p>The following must be installed in the rotorcraft for airworthiness certification subsequent to the incorporation of this STC.</p> <ol style="list-style-type: none"><li>The basic required equipment as prescribed in the applicable airworthiness regulations (See Certification Basis outlined above).</li><li>The additional required items shown in FAA sealed Aviation Specialties Equipment List No. AF-10.</li></ol>  |

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NOTE: Equipment items approved for the basic Sikorsky S-55, S-55B or S-55C are not eligible with this STC unless such items are also shown on the above noted equipment list, or unless it is determined that the interrelationship between those items and the modifications covered by the STC will introduce no adverse effect on the airworthiness of that aircraft.

3. Deleted

4. Main gear box takeoff bevel gear retention studs, Sikorsky P/N S14-05-3652, installed in lieu of AN75-5 bolts in accordance with the Sikorsky Service Digest.

5. Main rotor blade assembly, Sikorsky P/N S14-10-2100 or P/N S14-10-2201-1, -3, -6, -7, or -9.

6. Main gear box, Sikorsky P/N S14-35-4300-16 or -17, or S14-35-4500-0 or -1. Transmission eligible with or without Service Information Circular No. 1435-551 incorporated.

The FAA approved Aviation Specialties Rotorcraft Flight Manual, dated September 27, 1971 is required in lieu of that specified in Helicopter Specification 1H4.

- NOTE 1: (a) Current weight and balance data including a list of equipment included in the certificated empty weight and loading instructions, when necessary, must be provided at the time of airworthiness certification of return to service.
- (b) The certificated empty weight and correspondence center of gravity locations must include system fuel (unusable) of 32 lb. at (+116) and 17 lb. at (+184) based on fuel density of 6.7 lb./gallon.

NOTE 2: Refer to applicable FAA approved Rotorcraft Flight Manual for required placards and instruments markings.

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- NOTE 3: Information essential to the proper maintenance of the helicopter modified in accordance with the STC is contained in the Aviation Specialties Maintenance Manual Supplement and, except for areas superseded by the Aviation specialties Supplement, in the applicable Sikorsky S-55 Maintenance Manual. Retirement times of critical parts are the same as those of the basic S-55, S-55B, or S-55C. Refer to NOTE 3 of the Helicopter Specification No. 1H4 and the applicable Sikorsky S-55 Maintenance Manual.
- NOTE 4: The rating shown for the TSE 331-3U-303N engine is available at sea level throughout the approved ambient temperature range and to 10,000 ft. on a standard temperature day. This is based on dry air, no external accessory loads, no air bleed or anti-icing.
- NOTE 5: The approval of this change in type design applies to the basic aircraft of these models that are otherwise unmodified. This approval should not be extended to other aircraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the interrelationship between this change and any of those other previously approved modifications will introduce no adverse effect upon the airworthiness of that aircraft.

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