



**INSTRUCTIONS FOR CONTINUED AIRWORTHINESS  
PIPER CHEYENNE PA31T & PA31T1 WITH PT6A-28 ENGINE**

**DOCUMENT NUMBER: 200807-30**

**STC NO: SA10956SC**

**DATE: JULY 2009**

**REVISION: IR**

**NOTICE**

This document must be referenced on Block 8 of FAA form 337 and added to the aircraft permanent record as required by 14 CFR Part 91, §91.417 (a)(2)(vi) when the reference FAA-STC modification is accomplished on eligible aircraft. This document complies with the requirements of 14 CFR Part 23, §23.1529, in accordance with 14 CFR Part 23, Appendix G.

Aircraft Model Number \_\_\_\_\_

Aircraft Serial Number \_\_\_\_\_

Aircraft Registration Number \_\_\_\_\_

**PROPRIETARY INFORMATION**

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## LIST OF EFFECTIVE REVISIONS

Always destroy superseded pages when you insert revised pages

REVISION	DATE	CHAPTERS AFFECTED
IR	July 2009	ALL

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## 1. INTRODUCTION:

THESE INSTRUCTIONS FOR CONTINUED AIRWORTHINESS WERE DEVELOPED FOR THE PIPER PA-31T and PA-31T1 CHEYENNE AIRCRAFT MODIFIED PER STC SA10956SC. THIS STC INSTALLS THE PRATT & WHITNEY CANADA, ATLANTIC TURBINES INTERNATIONAL STC COVERED, OR KILLICK AEROSPACE USA LLC D/B/A PRIME TURBINES CONVERTED PT6A-28 TURBO PROP ENGINES WITH THREE BLADE HARTZELL HC-B3TN-3B/T10178B-8R, FOUR BLADE HARTZELL HC-E4N-3N/D8990SB, OR FOUR BLADE McCAULEY 4HFR34C766/94LNA-2 PROPELLERS.

Keep these instructions with the aircraft service information manuals or with the aircraft logbooks for reference during maintenance. The maintenance instructions in this manual supplement the latest revision of the Piper Cheyenne Service Manual, Pratt & Whitney Canada (P&WC) PT6A-28 Service Manuals, Atlantic Turbines International (ATI) Instructions for Continued Airworthiness (ICA), KILLICK AEROSPACE USA LLC D/B/A PRIME TURBINES Instructions for Continued Airworthiness, Hartzell Propellers installation and maintenance manuals, and Service Publications for maintaining the modified Piper PA-31T or PA-31T1 aircraft.

## 2. DESCRIPTION:

The following engines and propellers are eligible for installation by authority of Blackhawk Modifications STC SA10956SC.

### Engines:

(a) Number of engines	2
(b) Engine Manufacturer	Pratt and Whitney Canada*
(c) Engine Model Number	PT6A-28
(d) Rated Horsepower	680
PA 31T Derated H.P.	620
PA31T1 Derated H.P.	500
(e) Propeller Speed (rpm)	2200
(f) Engine Type	Free Turbine, Reverse Flow, 2-Shaft
Compressor stages and type	3 axial stages, 1 centrifugal stage
Turbine stages and type	1 stage compression, 1 stage power
Combustion chamber type	annular

\*NOTE: P&WC manufactured engines converted by ATI under authority of STC SE2501NY or SE0220NY or by Killick Aerospace USA LLC d/b/a Prime Turbines under authority of STC SE10947SC are also eligible.



Propellers:

Manufacturer:	Hartzell	Hartzell	McCauley
Hub Model:	HC-B3TN-3B	HC-E4N-3N	4HFR34C766
Blade Model:	T10173B-8 (Chey I) T10173K-8 (Chey IA)	D8990SB	94LNA-2
Number of Blades:	3	4	4
Diameter (inches):	93	89 to 90	91 to 92
Feather Angle: @ STA 30	87°	85.8° ± 0.5°	84.5° ± 0.2°
Reverse Angle: @ STA 30	-11.0° ± 0.4°	-10.0° ± 0.5°	-10.0° ± 0.2°
Spinner Assembly:	Existing	D-5710-4(P)	E-6747
Notes:	Existing Propeller	STC SA01248SE	STC SA1593GL

**3. SPECIAL PROCEDURES:**

Refer to the Normal and Emergency Procedures Section of the Aircraft Flight Manual Supplement, Blackhawk Modifications Document No. AFMS 151T-28 regarding operating procedures for this STC installation.

**4. MAINTENANCE, REMOVAL AND REPLACEMENT, SERVICING, TROUBLESHOOT, AND SCHEDULED INSPECTIONS:**

Aircraft modified per STC SA10956SC should be maintained in accordance with the scheduled time limits and standards outlined by the latest revision of the Piper Continuous Inspection Program or Approved Aircraft Inspection Program (AAIP). The maintenance requirements will be the same as the originally certificated airplane.

Engine:

Details of the engine installation are addressed in the installation instructions Blackhawk drawing number 200807-101.

Engine maintenance, servicing, trouble shooting, inspections and control rigging procedures will be the same as for a PA31T aircraft and is covered in the Piper maintenance manual p/n 753-826 section VIII.

Propellers:

Propeller installation/removal, routine maintenance, servicing and inspections on the original 3-blade propellers should be accomplished in accordance with the Piper maintenance manual p/n 753-826 section VIII, for 4-blade Hartzell or McCauley propellers consult the appropriate STC or the manufacturers maintenance instructions.



The HC-E4N-3N/D8990SB propellers are shot peened between station 7.0 and 30.0 on both face and camber sides. Blades having damage to the shot peened areas exceeding 0.015 inch deep (including material removal necessary to blend out such damage) must be removed from service and the reworked area shot peened before further flight. NOTE: For leading and trailing edge damage, a 0.250 inch deep rework limit applies before shot peening is required.

## 5. REPLACEMENT PARTS:

Replacement parts are listed in the bill of materials of the installation instructions drawing 200807-101.

## 6. RECOMMENDED TIME BETWEEN OVERHAULS:

Engines .....See Pratt & Whitney Service Bulletin SB 1803 R2 or later revision

Propellers .....See the latest revision of Hartzell Service Letter HC-SL-61-61Y or McCauley Service Bulletin SB137AC

## 7. AIRWORTHINESS LIMITATIONS:

### NOTICE:

This section is FAA approved and specifies maintenance required under §43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

All airworthiness limitations previously set by the airframe, engine or propeller manufacturer have not been changed or superseded by this installation or document and are still in effect and apply to the associated airframe, engine or propeller.

## 8. REVISION:

Each time this ICA is revised or reissued, the revised ICA will be distributed to operators using a Service Letter/Bulletin by Blackhawk Modifications, Inc. This revision will include a new Log of Revisions page along with the revised pages. The upper left hand corner of each revised page will reflect the revision letter. That portion of text or an illustration, which has been revised by the addition of, or change in, information is denoted by a solid revision bar located adjacent to the area of change, and placed along the inside margin of a page. Revision bars show only the information changed within the latest revision.



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## 9. ASSISTANCE:

For assistance contact Blackhawk Technical Services Dept. at the following address or phone number:

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