Instructions for Continued Airworthiness

FAA-STC SA10341SC, OPTION 1
Beech King Air
Model C90
with P&W PT6A-135A Engines

REV. A

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 Serial No. _____

Aircraft Registration No. _____

Log of Revisions:

Revision	Description	Pages	Date	Approved By:
A	1. Added new logo 2. Added rigging instructions (5.C) 3. Added low pitch torque chart 4. Added ground performance chart 5. Added parts list (Sect. 8) 6. Revised overhaul reference 7. Changed references to Hawker Beechcraft, Corp. as required 8. Updated all page numbers	All 5-6 6 8 9-10 11 As req'd All	11/9/07	M.L.Moore

Table of Contents:

1. INTRODUCTION:

This document provides instructions for the continued airworthiness (ICA) for Blackhawk Modifications, Inc. STC no. SA10341SC, Option 1 to install two Pratt & Whitney PT6A-135A engines and two Hartzell 3-blade Propellers.

NOTICE:
Section 15, titled "Airworthiness Limitations" 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. To remain in compliance with the STC, the aircraft shall be maintained in accordance with these limitations.

This document supplements or supersedes the Hawker Beechcraft Corp. King Air 90 Series Maintenance Manual part number 90-590012-13B revised August 1, 2007 or later approved revision only in those areas listed herein.

2. DESCRIPTION:

The STC replaces the original engines with two Pratt & Whitney PT6A-135A engines. The original 3-blade Hartzell Propellers are retained.

3. SPECIAL PROCEDURES:

none

4. SERVICING INFORMATION:

The total oil capacity is increased from 28 to 29 quarts. The useable oil capacity remains at 12 quarts.

5. MAINTENANCE INSTRUCTIONS:

A. Maintain PT6A-135A engines in accordance with Pratt & Whitney Maintenance Manual, part number 3043512 issued October 31, 1997 or later approved revision except for the changes in Sections 5.C thru 5.E.

B. Maintain propellers, cowlings, and nacelles in accordance with Hawker Beechcraft Corp. King Air 90 Series Maintenance Manual, part number 90-590012-13B revised August 1, 2007 or later approved revision except for the changes in Sections 5.C thru 5.E.

C. Engine Rigging:

Note: Rig all engine and propeller controls per the basic King Air 90 series maintenance manual for C90GT, chapter 76 and below. Adjust all engine operation parameters per the PT6A-135A maintenance manual, chapter 71-00 and below.

1. Adjust low pitch stop accordingly.

***Note*:** If you do not do this check during zero wind conditions, take an average of the upwind and downwind readings to obtain correct results.

(a.) Record outside air temperature, pressure altitude (29.92 set in altimeter), and torque value from the low pitch torque chart appropriate for the propeller installed.

(b.) With the engines running and the propeller levers fully forward, advance cockpit power levers for both engines until the propellers reach 1,800 rpm. With the generators, bleed air and ice vanes off let the engines stabilize for 2 minutes then record the indicated torque values in the following table.

(c.) The torque indication for each engine must be +40/-0 ft-lbs from the torque value obtained in (a.) above. The difference between right and left torque indications on the engines should not exceed 20 foot-pounds.

Outside air temperature	_____	°C
pressure altitude (29.92 set in altimeter)	_____	ft
target torque value from chart (5.D)	_____	ft-lbs
left engine torque	_____	ft-lbs (+40/-0)
right engine torque	_____	ft-lbs (+40/-0)
engine torque difference	_____	ft-lbs (±20)

(d.) If the indicated torque meter readings are not within these limits, make the adjustments according to (1) or (2) below:

(1.) When the torque change is necessary to bring an engine within the chart limits but the torque difference between the engines does not exceed 20 ft-lbs: disconnect the interconnecting rod for the fuel-topping governor and disconnect the control cable rear clevis from the beta control cam. Adjust the low pitch stop adjuster in or out until the engine torque is within the prescribed limits and the torque of each engine is the same. One full turn IN is approximately 92 ft-lbs. reconnect the inner connecting rod and the rear clevis.

(2.) When the torque change is necessary to bring an engine within the chart limits and the torque difference between the engines exceeds 20 ft-lbs: adjustment on the propeller of the stop (beta) nuts on each of the four low pitch stop rods for the propeller is necessary. All four nuts must be adjusted to an identical setting. One flat of rotation on the beta nuts (clockwise to increase or counterclockwise to decrease) changes engine torque approximately 15 foot-pounds. Adjust the beta nuts as necessary to bring the engine within the prescribed limits.

4. Adjust low idle speed to 51-53% Ng per the basic King Air 90 series maintenance manual.

5. Adjust high idle speed to 69-71% Ng per the basic King Air 90 series maintenance manual.

6. Adjust FCU minimum fuel flow per N_G/Temperature chart in the PT6A-135A maintenance manual, Chapter 71-00 Figure 508.

7. Check that the oil pressure is within 85-105 psi (95 psi is optimum) per the limits of PT6A-135A Maintenance Manual, Chapter 71-00 Table 507.

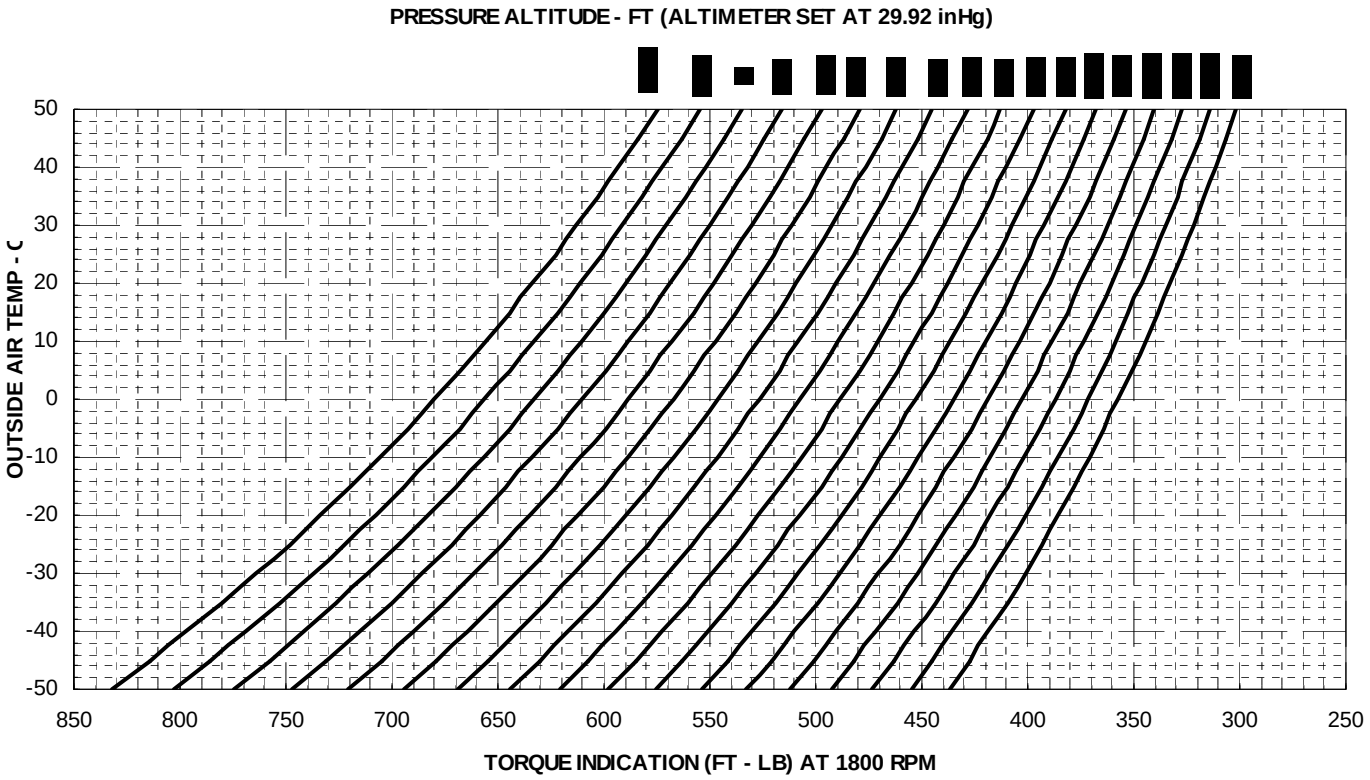
8. Adjust prop governor for max propeller speed of 1900 rpm. per the procedures outlined the King Air 90 series maintenance manual.

9. Set full reverse to 80-86% Ng per the procedures outlined in King Air 90 series maintenance manual.

10. Adjust the reverse not ready light to illuminate at 1760-1780 rpm. It may be necessary to lengthen the slots in the switch mounting bracket.

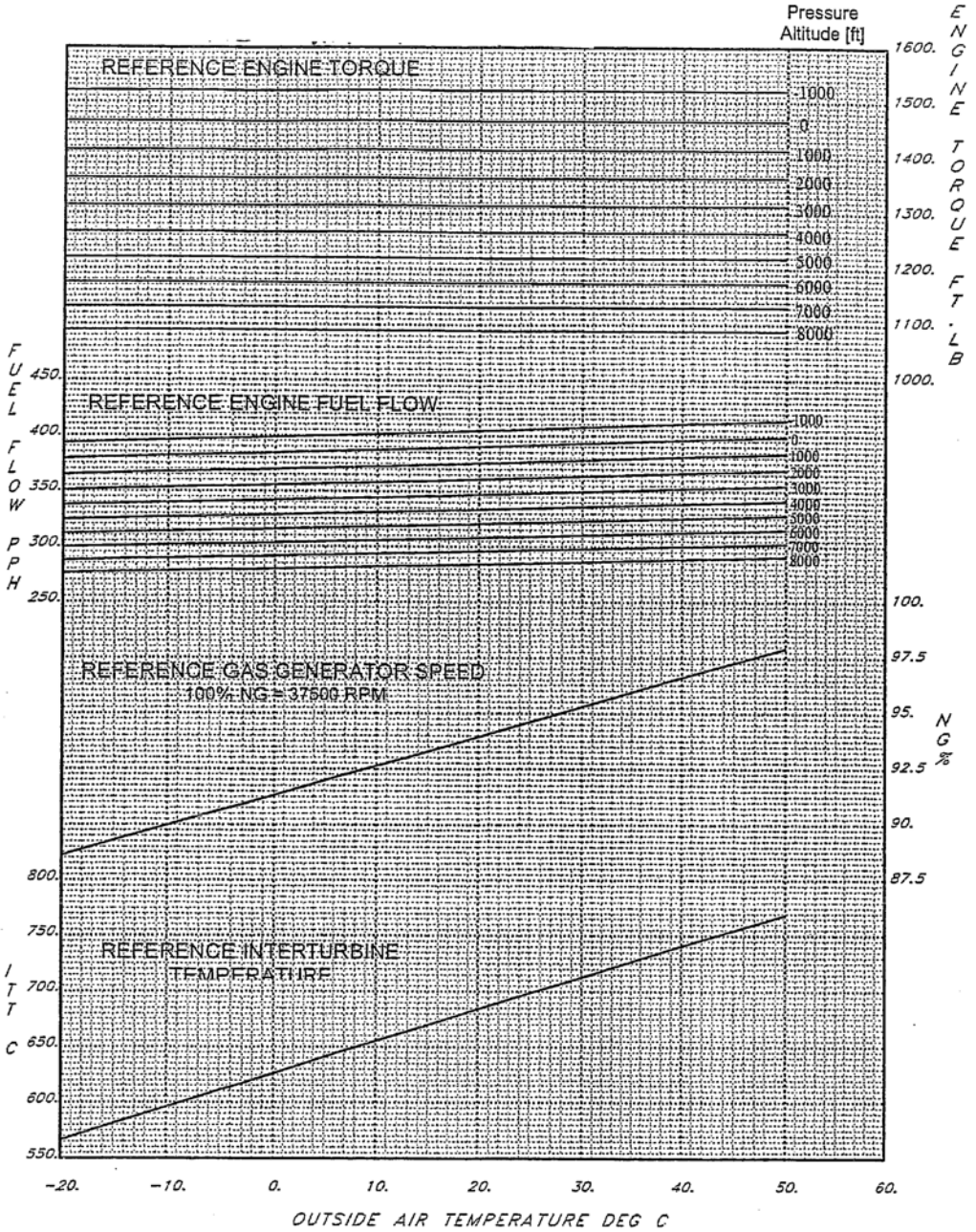
11. Ensure all linkage is properly saftied.

D. LOW PITCH TORQUE SETTING CHART FOR HARTZELL 3-BLADED PROPELLER MODEL NO. HC-B3TN-3(B,M)/T10173N(B,K)-8 AT 1800 RPM



E. GROUND PERFORMANCE CHART. Conduct ground performance checks per basic manual but use the following chart.

PT6A–135A
GROUND PERFORMANCE CHECK CHART
STATIC, INSTALLED, PROP SPEED = 1900 RPM
THIS GRAPH IS NOT TO BE USED TO ACCEPT OR REJECT AN ENGINE



6. TROUBLESHOOTING:

Troubleshooting guidance may be found in the documents listed in section 5. Otherwise, contact Blackhawk Modifications, Inc. for assistance.

Blackhawk Modifications, Inc.
1800 E. Sahara Dr.
Las Vegas NV 85108
254-755-6711

7. REMOVAL AND REPLACEMENT:

Remove and replace as specified in Blackhawk drawing 18001-01, Rev. D dated 03/08/07 or later FAA approved revision. For replacement parts refer to section 8, contact Blackhawk at the following address.

Blackhawk Modifications, Inc.
1800 E. Sahara Dr.
Las Vegas NV 85108
254-755-6711

8. PARTS LIST:

ITEM	QTY	PART NO.:	NOMENCLATURE:	NOTES:
1.	2 EA.	PT61-135A	ENGINE, TURBOPROPELLER	PRATT & WHITNEY CANADA
2.	4 EA.	FA5830-1	EXHAUST STUB ASSY (OPTIONAL)	FRAKES AVIATION STC SA8710SW
3.	2 EA.	100-389021-1	TORQUE TRANSDUCER	BEECHCRAFT
4.	2 EA	100-384116-5	TORQUE INDICATOR	BEECHCRAFT REMARKED PER AFMS 19001
5.	2 EA.	CTA008-DT1400-59.1	TORQUE TRANSDUCER	CENTEX AEROSPACE STC SA10339SC
6.	2 EA.	CTA008-2080-F15.20(K)	TORQUE INDICATOR	CENTEX AEROSPACE STC SA10339SC
7.	2 EA.	160647-1	TORQUE INDICATOR	BLACKHAWK STC SA01946LA

8.	2 EA.	ATPE-2B-2250-85D	TORQUE TRANSDUCER	BLACKHAWK STC SA01946LA
9.	2 EA.	EXISTING; PER AIRCRAFT SERIAL NUMBER	ITT INDICATOR	BEECHCRAFT REMARKED PER AFMS 19001
10.	2 EA.	EXISTING; PER AIRCRAFT SERIAL NUMBER	PROPELLER TACHOMETER INDICATOR	BEECHCRAFT RECALIBRATED & REMARKED PER DWG. 1800-01
11.	2 EA.	EXISTING; PER AIRCRAFT SERIAL NUMBER	OIL PRESSURE/TEMPERATURE INDICATOR	BEECHCRAFT REMARKED PER AFMS 19001
12.	2 EA.	19003-002	SPRING, ELEVATOR DOWN SPRING	MFG. PER BLACKHAWK SPEC 19003-002.
13.	2 EA.	10080X7-0218	BUSHING	BEECHCRAFT
14.	2 EA.	10080X4-0240 OR NAS42HT6B-15	BUSHING	BEECHCRAFT

THE FOLLOWING ITEMS ONLY APPLY TO AIRCRAFT WHICH WERE CONVERTED FROM PT6A-6/20, PT6A-20A, AND PT6A-20 ENGINES. (ITEMS 15 TO 30)

ITEM	QTY	PART NO.:	NOMENCLATURE:	NOTES:
15.	2 EA.	3020227	ADAPTER, OIL SCAVENGE	PRATT & WHITNEY CANADA
16.	2 EA.	3006515	OILTEMPERATURE BULB ADAPTOR	PRATT & WHITNEY CANADA
17.	2 EA.	109-910002-5	PROP SEAL DRAIN TUBE	BEECH SI 0769-241R1
	2 EA.	109-91002-7	REDUCER	BEECHCRAFT
18.	2 EA.	AN832-4	BULKHEAD FITTING	
19.	2 EA.	AN924-4	NUT	
20.	2 EA.	AN960-716	WASHER	
	2 EA.	130001-450157 OR 330995-4-0157 OR TSO-C53 EQUIVALENT	DRAIN HOSE ASSY	STRATOFLEX AEROQUIP
	2 EA.	97-910030	BLEED HOSE ADAPTOR	BEECHCRAFT
21.	2 EA.	99-389016-3	BLEED HOSE	BEECHCRAFT
22.	2 EA.	4563-100	BLEED HOSE CLAMP	BEECHCRAFT
23.	2 EA.	97-910031-1	BLEED HOSE GASKET	BEECHCRAFT
24.	2 EA.	MS3456L12S3S	CANNON PLUG	
25.	2 EA.	MS3417-12N	BACKSHELL	
26.	2 EA.	MS3106E14S2S	CONNECTORS	
27.	2 EA.	MS3106A14S2S	CONNECTORS	
28.	2 EA.	MS3057-6A	BACKSHELLS	
29.	2 EA.	MS3420-6	RUBBER INSERTS	
30.	2 EA.	50-389057-1 (OR EQUIVALENT)	PROPELLER TACH GENERATOR	BEECHCRAFT

9. DIAGRAMS:

None

10. SPECIAL INSPECTION REQUIREMENTS:

Conduct routine inspections on the PT6A-135A engines in accordance with Pratt & Whitney Maintenance Manual, part number 3043512 issued October 31, 1997 or later approved revision. Refer to section 72-00-00.

Conduct routine inspections on the propellers, cowlings, and nacelles in accordance with Hawker Beechcraft, Corp. King Air 90 Series Maintenance Manual, part number 90-590012-13B revised August 1, 2007 or later approved revision.

11. APPLICATION OF SPECIAL TREATMENTS:

None

12. DATA:

None

13. SPECIAL TOOLS:

None

14. ADDITIONAL INFORMATION FOR COMMUTER CATEGORY AIRCRAFT:

None

15. RECOMMENDED OVERHAUL PERIOD:

Overhaul period for engine per Pratt & Whitney Service Bulletin 1003 rev 28 or later approved revision.

16. 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. To remain in compliance with the STC, the aircraft shall be maintained in accordance with these limitations.

There are no changes to the airworthiness limitations of the PT6A-135A engine from those, which are listed in Pratt & Whitney Maintenance Manual, part number 3043512, issued October 31, 1997 or later approved revision.

There are no changes to the airworthiness limitations of the propellers, cowlings, or nacelles from those, which are listed in Hawker Beechcraft, Corp. King Air 90 Series Maintenance Manual, part number 90-590012-13B revised August 1, 2007 or later approved revision.

17. 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. This revision will include a new Log of Revisions page along with the revised pages. The lower right 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 outside margin of a page. Revision bars show only information changed within latest revision.

18. ASSISTANCE:

For assistance with ICA issues not addressed herein, contact Blackhawk Modifications, Inc. at the following address or phone number.

Blackhawk Modifications, Inc.
1800 E. Sahara Dr.
Las Vegas, NV 85108
(254) 755-6711