

<b>MAJOR REPAIR AND ALTERATION</b> <b>(Airframe, Powerplant, Propeller, or Appliance)</b>				OMB No. 2120-0020 Exp: 07/31/2026		Electronic Tracking Number	
				For FAA Use Only			
INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))							
<b>1. Aircraft</b>	Nationality and Registration Mark <b>N316DF</b>			Serial No. <b>TH-1817</b>			
	Make <b>Raytheon Aircraft Co</b>			Model <b>58</b>		Series	
<b>2. Owner</b>	Name (As shown on registration certificate) <b>Thacker Orbie A</b>			Address (As shown on registration certificate)			
				Address <b>PO Box 217</b>		State <b>AI</b>	
			City <b>Wellington</b>		Country <b>United States</b>		
<b>3. For FAA Use Only</b>							
<b>4. Type</b>		<b>5. Unit Identification</b>					
Repair	Alteration	Unit	Make	Model		Serial No.	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	<u>Raytheon Aircraft Co</u>	(As described in Item 1 above)		<u>TH-1817</u>	
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT					
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER					
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type				
			Manufacturer				
<b>6. Conformity Statement</b>							
<b>A. Agency's Name and Address</b>				<b>B. Kind of Agency</b>			
Name <u>Charles L Stallings</u>				<input checked="" type="checkbox"/> U. S. Certificated Mechanic		<input type="checkbox"/> Manufacturer	
Address <u>90 Glory Lane</u>				<input type="checkbox"/> Foreign Certificated Mechanic		C. Certificate No.	
City <u>Cropwell</u> State <u>AI</u>				<input type="checkbox"/> Certificated Repair Station		<b>4077636</b>	
Zip <u>35054</u> Country <u>USA</u>				<input type="checkbox"/> Certificated Maintenance Organization			
D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.							
Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>			Signature/Date of Authorized Individual <u>2 Dec 2024 C Stallings</u>				
<b>7. Approval for Return to Service</b>							
Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Rejected							
BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization		Persons Approved by Canadian Department of Transport		
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)			
Certificate or Designation No. <b>4077636</b>			Signature/Date of Authorized Individual <u>2 Dec 2024 C Stallings</u>				

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

N316DF

2 December 2024

Nationality and Registration Mark

Date

Installed JPI EDM 790 engine temperature indication system IAW JPI Report No.760 Rev B, approved under STC SA000729SE. Revised aircraft weight & Balance, and equipment list.....end.....

☐ Additional Sheets Are Attached



US Department  
of Transportation  
Federal Aviation  
Administration

**MAJOR REPAIR AND ALTERATION**  
**(Airframe, Powerplant, Propeller, or Appliance)**

Form Approved  
OMB No. 2120-0020  
2/28/2011

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark USA N316DF	Serial No. TH-1817	
	Make Beechcraft	Model 58	Series N/A
2. Owner	Name (As shown on registration certificate) THACKER ORBIE A	Address (As shown on registration certificate) Address PO BOX 217	
		City WELLINGTON State AL	
		Zip 36279-0217 Country USA	

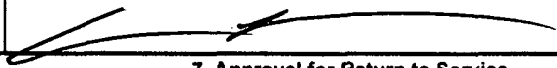
**3. For FAA Use Only**

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	_____	(As described in Item 1 above)	_____
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT	_____	_____	_____
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER	_____	_____	_____
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type	_____	_____
			Manufacturer		

**6. Conformity Statement**

A. Agency's Name and Address		B. Kind of Agency	
Name	HolderAviation, Inc.	<input type="checkbox"/> U. S. Certificated Mechanic	<input type="checkbox"/> Manufacturer
Address	420 Airport Road	<input type="checkbox"/> Foreign Certificated Mechanic	C. Certificate No.
City	Pell City State AL	<input checked="" type="checkbox"/> Certificated Repair Station	9HLR596B
Zip	35128 Country USA	<input type="checkbox"/> Certificated Maintenance Organization	

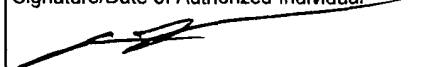
D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual  1/18/2022
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**7. Approval for Return to Service**

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☒ Approved ☐ Rejected

BY	FAA Flt. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee <input checked="" type="checkbox"/>	Repair Station	Inspection Authorization	Other (Specify)

Certificate or Designation No. 9HLR596B	Signature/Date of Authorized Individual  1/18/2022
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### NOTICE

*Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.*

#### 8. Description of Work Accomplished

*(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)*

USA N316DF

1/18/2022


Nationality and Registration Mark

Date

1. Removed Bendix/King KG 102A P/N 060-0015-00, Bendix/King KMT 112 P/N 071-1052-00, Bendix/King KA 51B P/N 071-1242-01, Bendix/King KI 525A P/N 066-3046-07, United Instruments Turn Coordinator P/N 9010.
2. Installed Installed Garmin GMU 11 P/N 011-0434-01, Garmin GTP 59 P/N 011-00978-00, Garmin GI 275 ADAHRS P/N 011-04489-10, Garmin GI 275 Battery P/N 011-04528-00. The GI 275 replaced the KCS 55A System for heading information and for course and heading control to the KFC 2200 Autopilot. No structural alterations were required outside the approvals contained within the STC.
3. An analysis has been conducted using the basis of type certification and no major changes to the type design has occurred.
4. The installation was accomplished IAW Garmin STC SA02658SE, STC Installation Manual No. 190-02246-10 Rev. 11.
5. All work has been accomplished in accordance with the above mentioned STC and installation manual.
6. No certified properties; which could adversely impact continued safe flight and landing operations for which the aircraft is approved, have been exceeded.
7. The installation does not substantially deviate from the manuals as referenced in the STC.
8. The STC Flight Manual Supplement No. 190-02246-12 Rev. 7 was installed in the POH.
9. A post installation ground check has been conducted in accordance with the above referenced installation manuals checkout procedures and proper operation was confirmed.
10. Weight and balance was re-calculated.
11. The equipment list has been revised.
12. The electrical load analysis is satisfactory.
13. The appropriate logbook entries have been completed.
14. The Instructions for Continued Airworthiness will be made a part of the permanent aircraft records.

-----END-----

☐ Additional Sheets Are Attached

 US Department of Transportation Federal Aviation Administration		<b>MAJOR REPAIR AND ALTERATION</b> <b>(Airframe, Powerplant, Propeller, or Appliance)</b>		OMB No. 2120-0020 Exp: 01/31/2023		Electronic Tracking Number	
		For FAA Use Only					

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

<b>1. Aircraft</b>	Nationality and Registration Mark <b>N316DF</b>		Serial No. <b>TH-1817</b>	
	Make <b>RAYTHEON AIRCRAFT CO</b>		Model <b>58</b>	Series

<b>2. Owner</b>	Name (As shown on registration certificate) <b>ORBIE A THACKER</b>		Address (As shown on registration certificate)	
	Address <b>PO BOX 217</b>			
	City <b>WELLINGONT</b> State <b>AL</b>			
	Zip <b>36279-0217</b> Country <b>USA</b>			

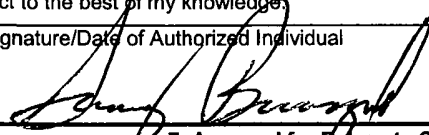
3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	AIRFRAME	RAYTHEON AIRCRAFT CO	(As described in Item 1 above)	TH-1817
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency	
Name <b>AIR SERVICES INC</b>		<input type="checkbox"/> U. S. Certificated Mechanic <input type="checkbox"/> Manufacturer	
Address <b>400 REGIONAL AIRPORT RD</b>		<input type="checkbox"/> Foreign Certificated Mechanic     C. Certificate No.	
City <b>CARROLLTON</b> State <b>GA</b>		<div style="font-size: 2em; font-weight: bold;">Z4AR547Y</div>	
Zip <b>30117</b> Country <b>USA</b>			
		<input checked="" type="checkbox"/> Certified Repair Station Z4AR547Y <input type="checkbox"/> Certified Maintenance Organization	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

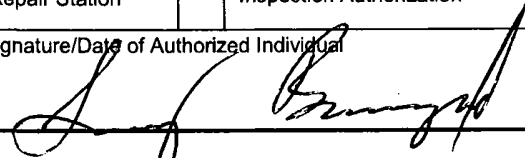
Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual  <b>3-1-2021</b>
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7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is

☒ Approved     ☐ Rejected

BY	FAA Flt. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee <input checked="" type="checkbox"/>	Repair Station	Inspection Authorization	Other (Specify)

Certificate or Designation No. <b>Z4AR547Y</b>	Signature/Date of Authorized Individual  <b>3-1-2021</b>
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### NOTICE

*Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.*

#### 8. Description of Work Accomplished

*(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)*

N316DF

Mar 01, 2021

Nationality and Registration Mark

Date

Replaced LH outboard leading edge skin assembly PN 000-110029-3. All worked performed in accordance with AC43.13-1B, Chapter 4, Section 4, Paragraph 4-57 (pages 4-14 thru 4-24), Table 4-8 (pages 4-17 and 4-18), Fighre 4-6 (page 4-21). Skin replaced at manufacturer production joints using original fastener pattern. -----

----- E N D -----

☐ Additional Sheets Are Attached



US Department  
of Transportation  
Federal Aviation  
Administration

**MAJOR REPAIR AND ALTERATION**  
**(Airframe, Powerplant, Propeller, or Appliance)**

Form Approved  
OMB No. 2120-0020  
2/28/2011

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark USA N316DF	Serial No. TH-1817	
	Make Beechcraft	Model 58	Series N/A
2. Owner	Name (As shown on registration certificate) THACKER ORBIE A	Address (As shown on registration certificate) Address PO BOX 217	
		City WELLINGTON	State AL
		Zip 36279-0217	Country USA

**3. For FAA Use Only**

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	_____	(As described in Item 1 above)	_____
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

**6. Conformity Statement**

A. Agency's Name and Address		B. Kind of Agency	
Name Holder Aviation, Inc.		<input type="checkbox"/> U. S. Certificated Mechanic	<input type="checkbox"/> Manufacturer
Address 420 Airport Road		<input type="checkbox"/> Foreign Certificated Mechanic	C. Certificate No.
City Pell City	State AL	<input checked="" type="checkbox"/> Certificated Repair Station	9HLR596B
Zip 35128	Country USA	<input type="checkbox"/> Certificated Maintenance Organization	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual  11/25/2020
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**7. Approval for Return to Service**

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☒ Approved ☐ Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee <input checked="" type="checkbox"/>	Repair Station	Inspection Authorization	Other (Specify)

Certificate or Designation No. 9HLR596B	Signature/Date of Authorized Individual  11/25/2020
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### NOTICE

*Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.*

#### 8. Description of Work Accomplished

*(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)*

USA N316DF

Nationality and Registration Mark

11/25/2020

Date

1. Removed Bendix/King KAS 297 P/N 065-0046-02, Bendix/King KEA 346 P/N 066-03062-0008, Bendix/King KI 256 P/N 060-0017-01.
2. Installed Garmin GI 275 P/N 011-04489-20; Garmin GI 275 Battery P/N 011-04528-00. The GI 275 replaced the KI 256 for autopilot attitude and flight director functions. It replaced the KEA 346 for altitude encoding functions. No structural alterations were required outside the approvals contained within the STC.
3. An analysis has been conducted using the basis of type certification and no major changes to the type design has occurred.
4. The installation was accomplished IAW Garmin STC SA02658SE, STC Installation Manual No. 190-02246-10 Rev. 5.
5. All work has been accomplished in accordance with the above mentioned STC and installation manual.
6. No certified properties; which could adversely impact continued safe flight and landing operations for which the aircraft is approved, have been exceeded.
7. The installation does not substantially deviate from the manuals as referenced in the STC.
8. The STC Flight Manual Supplement No. 190-02246-12 Rev. 2 was installed in the POH.
9. A post installation ground check has been conducted in accordance with the above referenced installation manuals checkout procedures and proper operation was confirmed.
10. Weight and balance was re-calculated.
11. The equipment list has been revised.
12. The electrical load analysis is satisfactory.
13. The appropriate logbook entries have been completed.
14. The Instructions for Continued Airworthiness will be made a part of the permanent aircraft records.

-----END-----

☐ Additional Sheets Are Attached





US Department  
of Transportation  
Federal Aviation  
Administration

**MAJOR REPAIR AND ALTERATION**  
**(Airframe, Powerplant, Propeller, or Appliance)**

Form Approved  
OMB No. 2120-0020  
11/30/2007

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark <b>N316DF</b>	Serial No. <b>TH-1817</b>	
	Make <b>Beech</b>	Model <b>Beech 58</b>	Series
2. Owner	Name (As shown on registration certificate) <b>THACKER ORBIE A</b>	Address (As shown on registration certificate) Address <b>511 BUCKNER CIR</b>	
		City <b>ANNISTON</b> State <b>AL</b>	Zip <b>36205-4412</b> Country <b>USA</b>

**3. For FAA Use Only**

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME		(As described in Item 1 above)	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	POWERPLANT	Continental Motors	IO-550-C	686478 686477
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

**6. Conformity Statement**

A. Agency's Name and Address		B. Kind of Agency	
Name <b>RAM Aircraft, Limited Partnership</b>		<input type="checkbox"/> U. S. Certificated Mechanic	<input type="checkbox"/> Manufacturer
Address <b>7505 Karl May Drive</b>		<input type="checkbox"/> Foreign Certificated Mechanic	C. Certificate No.
City <b>Waco</b> State <b>Texas</b>		<input checked="" type="checkbox"/> Certificated Repair Station	Airframe Class III, Powerplant Class I
Zip <b>76708</b> Country <b>United States</b>		<input type="checkbox"/> Certificated Maintenance Organization	<b>VA1R551K</b>

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <b>Robert Franklin 10/24/18</b> <i>Robert Franklin</i>
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**7. Approval for Return to Service**

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☒ Approved ☐ Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee <input checked="" type="checkbox"/>	Repair Station	Inspection Authorization	Other (Specify)

Certificate or Designation No. <b>VA1R551K</b>	Signature/Date of Authorized Individual <b>Robert Franklin 10/24/18</b> <i>Robert Franklin</i>
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### NOTICE

*Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.*

#### 8. Description of Work Accomplished

*(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)*

N 316 DF

Nationality and Registration Mark

10/24/18

Date

Left and right engine modified by installation of p/n S539800M30 starter adapter spring I/A/W Aircraft Specialties Services, Inc. S539800 Spring Installation Instructions No. 1101-1 dated February 15, 2000 or later FAA approved revision per STC SE09846SC.

Installed new Hartzell FAA-PMA ALV9610 alternators. See new empty weight and balance in POH.

Pertinent details of the above installations are on file under Project No. 8880.

---END---

☐ Additional Sheets Are Attached



US Department  
of Transportation  
Federal Aviation  
Administration

**MAJOR REPAIR AND ALTERATION**  
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1. Aircraft	Nationality and Registration Mark USA N316DF	Serial No. TH-1817		
	Make Beech	Model 58	Series N/A	
2. Owner	Name (As shown on registration certificate) Laser Fabrication and Machine Company, Inc.		Address (As shown on registration certificate) Address 14055 U S 431	
			City Wellington	State AL
			Zip 36279	Country USA


3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME		(As described in Item 1 above)	
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency	
Name Holder Aviation, Inc.		<input type="checkbox"/> U. S. Certificated Mechanic	<input type="checkbox"/> Manufacturer
Address 7300 Old Acton Road		<input type="checkbox"/> Foreign Certificated Mechanic	C. Certificate No.
City Moody	State AL	<input checked="" type="checkbox"/> Certificated Repair Station	9HLR596B
Zip 35004	Country USA	<input type="checkbox"/> Certificated Maintenance Organization	


D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual  10/26/2016
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7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☐ Approved ☐ Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee <input checked="" type="checkbox"/>	Repair Station	Inspection Authorization	

Certificate or Designation No. 9HLR596B	Signature/Date of Authorized Individual  10/26/2016
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## NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

### 8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

USA N316DF

Nationality and Registration Mark

10/26/2016

Date

1. Removed KT 70 Transponder P/N 066-01141-0101.
2. Installed Garmin GTX 345 ADS-B In and Out Transponder P/N 011-03302-00. The GTX 345 was interfaced to existing equipment using the wiring from the removed equipment. Additional wiring was installed to connect the GTX 345 to the GNS 430W for ADS-B position and display of ADS-B data. No structural alterations were required.
3. An analysis has been conducted using the basis of type certification and no major changes to the type design has occurred.
4. The installation was accomplished I A W Garmin AML STC SA01714WI Installation Manual NO. 190-00734-10 Rev. 6.
5. All work has been accomplished in accordance with the above mentioned STC and installation manual.
6. No certified properties; which could adversely impact continued safe flight and landing operations for which the aircraft is approved, have been exceeded.
7. The installation does not substantially deviate from the manuals as referenced in the STC.
8. This installation is in compliance with 14 CFR 23.1301.
9. The structural installation is in compliance with 14 CFR 23.561.
10. This STC does not require a Flight Manual Supplement.
11. A post installation ground check has been conducted in accordance with the above referenced installation manuals checkout procedures and proper operation was confirmed.
12. The aircraft weight and balance has been recalculated.
13. The equipment list has been revised.
14. The electrical load analysis is satisfactory.
15. The appropriate logbook entries have been completed.
16. The attached Instructions for Continued Airworthiness will be made a part of the permanent aircraft records.

-----END-----

☐ Additional Sheets Are Attached



US Department  
of Transportation  
Federal Aviation  
Administration

**MAJOR REPAIR AND ALTERATION**  
**(Airframe, Powerplant, Propeller, or Appliance)**

Form Approved  
OMB No. 2120-0020  
11/30/2007

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark USA N316DF	Serial No. TH-1817	
	Make Beechcraft	Model B58	Series
2. Owner	Name (As shown on registration certificate) Thacker, Alvin	Address (As shown on registration certificate) Address 2154 Gilbert Ferry Road	
		City Ohatchee State AL	Zip 36271 Country

**3. For FAA Use Only**

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME		(As described in Item 1 above)	
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

**6. Conformity Statement**

A. Agency's Name and Address		B. Kind of Agency	
Name Southern Avionics & Communications, Inc		<input type="checkbox"/> U. S. Certificated Mechanic	<input type="checkbox"/> Manufacturer
Address MOBILE DOWNTOWN AIRPORT		<input type="checkbox"/> Foreign Certificated Mechanic	C. Certificate No.
City MOBILE State AL		<input checked="" type="checkbox"/> Certificated Repair Station	HW4R427M LMTD INST
Zip 36615 Country USA		<input type="checkbox"/> Certificated Maintenance Organization	RADIO I,II,III

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual January 30, 2015 John D. Theobald <i>John D. Theobald</i>
--	--

**7. Approval for Return to Service**

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☒ Approved ☐ Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee <input checked="" type="checkbox"/>	Repair Station	Inspection Authorization	

Certificate or Designation No. HW4R427M	Signature/Date of Authorized Individual January 30, 2015 John D. Theobald <i>John D. Theobald</i>
--	--

### NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

#### 8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

USA N316DF

01/30/2015

Nationality and Registration Mark

Date

THIS 337 IS FOR RECORDATION PURPOSES ONLY

REMOVED: IN 182A RADAR INDICATOR @ STATION 50.75  
KX165 NAV/COMM @ STATION 51.25  
KLN 90B GPS @ STATION 50.75  
KA91 GPS ANTENNA @ STATION 84.0

INSTALLED: GTN-750 NAV/COM/GPS/WAAS P/N 011-02282-00 @ STATION 51.5  
GA-35 ANTENNA P/N 013-00235-00 @ STATION 84

THE GARMIN GTN-750 SYSTEM AND GA35 WAAS GPS ANTENNA ARE INSTALLED IN ACCORDANCE WITH GARMIN INSTALLATION MANUAL P/N 190-01007-A3, REV 8, DATED NOVEMBER 2014.

THE GTN-750 IS APPROVED FOR INSTALLATION IN THIS AIRCRAFT UNDER STC # SA02019SE-D ISSUED TO GARMIN INTERNATIONAL INC. 18 MARCH 2011 AND AMENDED 19 DECEMBER 2012.

THE GARMIN GTN-750 IS INTERFACED TO THE AUDIO PANEL, AUTO PILOT, SHADIN DIGIDATA, ARGUS 5000, WX-1000E AND KI525A HSI USING STANDARD INTERFACING TECHNIQUES ACCORDING TO MANUFACTURER'S INSTRUCTIONS. THE NEWLY INSTALLED EQUIPMENT IS COMPATIBLE WITH ALL OTHER EQUIPMENT, SYSTEMS AND PREVIOUS ALTERATIONS.

THIS INSTALLATION DOES NOT DEVIATE SUBSTANTIALLY FROM THE INSTALLATION MANUAL AS REFERENCED IN THE ABOVE LISTED STC.

AN ELECTRICAL LOAD ANALYSIS WAS CONDUCTED AND FOUND THAT MAX LOAD OF THE AIRCRAFT ELECTRICAL SYSTEM DOES NOT EXCEED 80% OF CAPACITY.

POST INSTALLATION CHECKS HAVE BEEN CONDUCTED IN ACCORDANCE WITH THE ABOVE REFERENCED INSTALLATION MANUAL CHECKOUT PROCEDURES. PROPER OPERATION WAS CONFIRMED AND EQUIPMENT HAD NO ADVERSE EFFECT ON ANY OTHER EQUIPMENT OR SYSTEMS INSTALLED IN THE AIRCRAFT.

ALL WORK HAS BEEN ACCOMPLISHED IN ACCORDANCE WITH THE ABOVE REFERENCED INSTALLATION MANUAL AND AC 43.13-1B CHAPTERS 11 & 12 AND AC 43.13-2B CHAPTERS 1, 2 & 3.

WEIGHT AND BALANCE/EQUIPMENT LIST HAS BEEN AMENDED. LOG BOOK ENTRIES HAVE BEEN MADE.

THE MANUFACTURER'S FAA APPROVED AIRPLANE FLIGHT MANUAL FOR THE GTN 750 P/N 190-01007-A2, REV 4, DATED 25 NOVEMBER 2014 HAS BEEN INCLUDED IN THE FAA APPROVED AIRCRAFT FLIGHT MANUAL.

THE MANUFACTURER'S FAA APPROVED INSTRUCTIONS FOR CONTINUED AIRWORTHINESS FOR THE GTN-750 P/N 190-01007-A1, REV 7, DATED NOVEMBER 2014 WILL BE MADE PERMANENT PART OF THE AIRCRAFT RECORDS.

\*\*\*\*\*END\*\*\*\*\*

☐ Additional Sheets Are Attached

United States of America  
Department of Transportation - Federal Aviation Administration

# Supplemental Type Certificate

Number SA02019SE-D

This certificate issued to

Garmin International, Inc.  
1200 East 151<sup>st</sup> Street  
Olathe, KS 66062

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 23 \* of the Federal Aviation Regulations.

Original Product--Type Certificate Number: \* See attached Federal Aviation Administration (FAA)  
Make: Approved Model List (AML) SA02019SE-D for approved  
Model: aircraft models and applicable airworthiness regulations.

Description of Type Design Change: Installation of Garmin GTN 6XX/7XX Navigation System in accordance with FAA approved Master Drawing List, 005 00533-C0, Revision 1, approved March 18, 2011 or later FAA approved revision. The Master Drawing List identifies applicable FAA approved Airplane Flight Manual Supplements and System Maintenance Manual (including Instructions for Continued Airworthiness).

*Limitations and Conditions:*

- 1) Compatibility of this design change with other previously approved modifications must be determined by the installer; installation of this change should not introduce any adverse effect on the aircraft.
- 2) A copy of this certificate and associated AML, plus the ICA and applicable AFMS, as called out by the applicable Master Drawing List (reference above), must be maintained as part of the permanent records for the modified aircraft.
- 3) 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.

(See Continuation Sheet on Page 3)

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: March 26, 2009

Date reissued:

Date of issuance: March 18, 2011

Date amended: December 19, 2012  
November 25, 2014



By direction of the Administrator

A handwritten signature in black ink, appearing to read "Michael Warren".

(Signature)

Michael Warren, ODA STC Unit Administrator  
ODA-240087-CE, Garmin International, Inc.

(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.

INSTRUCTIONS: The transfer endorsement below may be used to notify the appropriate FAA Regional Office of the transfer of this Supplemental Type Certificate.

The FAA will reissue the certificate in the name of the transferee and forward it to him.

---

## TRANSFER ENDORSEMENT

Transfer the ownership of Supplement Type Certificate Number \_\_\_\_\_

To (Name of Transferee) \_\_\_\_\_

(Address of Transferee) \_\_\_\_\_  
(Number and street)

\_\_\_\_\_  
(City, State and Zip code)

From (Name of Grantor) \_\_\_\_\_  
(Print or type)

(Address of Grantor) \_\_\_\_\_  
(Number and street)

\_\_\_\_\_  
(City, State and Zip code)

Extent of Authority (if licensing agreement): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date of Transfer: \_\_\_\_\_

Signature of Grantor (In Ink): \_\_\_\_\_

---

*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.*



United States of America  
Department of Transportation - Federal Aviation Administration

**Supplemental Type Certificate**  
**(Continuation Sheet)**

*Number* **SA02019SE-D**

*Issued:* March 18 2011

*Reissued:*

*Amended:* December 19, 2012, November 25, 2014

*Certification Basis:*

Based on 14 CFR 21.115 and 21.101, and the FAA policy for significant changes in FAA Order 8110.48, the applicant elected to comply with Title CFR 14 Part 23, dated February 1, 1965, including Amendments 23-1 through 23-61 for the change and all areas affected by the change. The following table lists the Federal Aviation Regulations complied with:

Section	Amdt	Section	Amdt
23.301(a)	23-48	23.1322(a)(b)(c)(d)(e)	23-43
23.303	23-0	23.1329(h)	23-49
23.305 All	23-45	23.1331(a)(b)(1)	23-43
23.307(a)	23-0	23.1351(a)	23-49
23.337(a)(b)(c)	23-48	23.1353(h)	23-49
23.561(a)(b)(3)(e)	23-48	23.1357(a)(b)(d)	23-43
23.601	23-0	23.1359(c)	23-49
23.603 All	23-23	23.1365(a)(b)(d)(e)	23-49
23.607(b)	23-48	23.1367(a)(b)(c)(d)	23-0
23.611	23-48	23.1381(a)(b)(c)	23-0
23.613(a)(b)	23-45	23.1431(a)(b)(d)(e)	23-49
23.627	23-0	23.1501(a)(b)	23-21
23.771(a)	23-14	23.1523 All	23-34
23.773(a)(2)	23-45	23.1525 All	23-45
23.777(a)(b)	23-51	23.1529 All	23-26
23.1301(a)(b)(c)(d)	23-20	23.1541(a)(2)(b)	23-21
23.1306(b)	23-61	23.1555(a)(b)(e)(2)	23-50
23.1307	23-49	23.1559(c)	23-50
23.1308(b)(c)	23-57	23.1581(a)(b)(c)(f)	23-50
23.1309(a)(b)(c)(1)(e)	23-49	23.1583(h)(m)	23-50
23.1311(a)(1-4)(6)(7)	23-49	23.1585(j)	23-50
23.1321(a)(c)(e)	23-49		

Note 1) For installations of this STC, as amended November 25, 2014 or later, the certification basis has been updated to include the regulations listed below. The added regulations are for changes associated with installation of Flight Stream 210 LRU.  
23.853(a)(d)(3)(v)(f) Amdt 23-62

-----END-----

*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.*

11

11



US Department  
of Transportation  
Federal Aviation  
Administration

**MAJOR REPAIR AND ALTERATION**  
(Airframe, Powerplant, Propeller, or Appliance)

Form Approved  
OMB No. 2120-0020

For FAA Use Only

Office Identification

HOU FSDOT.F

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act of 1958).

1. Aircraft	Make	Model
	RAYTHEON AIRCRAFT COMPANT	58
	Serial No. TH-1817	Nationality and Registration Mark N316DF
2. Owner	Name (As shown on registration certificate) RAYTHEON AIRCRAFT COMPANY	Address (As shown on registration certificate) P.O. BOX 85 WICHITA, KS. 67201

3. For FAA Use Only

4. Unit Identification

Unit	Make	Model	Serial No.	5. Type	
				Repair	Alteration
AIRFRAME	(As described in Item 1 above)				X
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

6. Conformity Statement

A. Agency's Name and Address RAYTHEON AIRCRAFT SERVICES 8402 NELMS HOUSTON, TEXAS 77061	B. Kind of Agency	C. Certificate No. XA1R605K
	<input type="checkbox"/> U.S. Certificated Mechanic	
	<input type="checkbox"/> Foreign Certificated Mechanic	
	<input checked="" type="checkbox"/> Certified Repair Station	
	<input type="checkbox"/> Manufacturer	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Date JUNE 2, 1997	Signature of Authorized Individual HARRY BAUDER <i>Harry Bauder</i>
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7. Approval for Return To Service

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☒ APPROVED ☐ REJECTED

BY	FAA Flt. Standards Inspector	Manufacturer	Inspection Authorization	Other (Specify)
	FAA Designee	<input checked="" type="checkbox"/> Repair Station	Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection 6-2-97		Certificate or Designation No. XA1R605K	Signature of Authorized Individual MICHAEL J. HARPER JR. <i>Michael Harper Jr.</i>	

### NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

#### 8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

RAYTHEON AIRCRAFT COMPANY  
MODEL 58 N316DF S/N TH-1817

#### INSTALLED THE FOLLOWING EQUIPMENT:

1. B.F.GOODRICH WX-1000E STORMSCOPE PROCESSOR P/N 78-8060-5941-2  
AT F.S. 199.0
2. B.F.GOODRICH WX-1000 STORMSCOPE DISPLAY P/N 78-8060-5900-8  
AT F.S. 55.0
3. B.F.GOODRICH STORMSCOPE ANTENNA P/N 78-8051-9200-8 AT F.S. 229.0
4. SHADIN FUEL/AIR DATA COMPUTER P/N 912802 AT F.S. 56
5. SHADIN OAT PROBE P/N 681201-1 AT F.S. 103.0
6. TELEX PC4 ICS SYSTEM P/N 70650-000 AT F.S. 56.0
7. MID CONTINENT MD26-28 CONVERTER AT F.S. 201.0

THE FOLLOWING WAS USED AS GUIDELINES FOR THE INSTALLATION:  
SHADIN INSTALLATION MANUAL P/N 912802 REV C DATED NOV. 1995;  
TELEX INSTALL DOCUMENT P/N 4279-3; B.F.GOODRICH INSTALLATION  
MANUAL P/N 78-8051-9150-5 REV 01 DATED 8-10-96; RAYTHEON  
AIRCRAFT SERVICES DRAWINGS #2278, 2279 AND 2280 DATED 5-28-97;  
A.C. 43.13-1A CHAPTER 11; A.C. 43.13-2A CHAPTER 2, 3 AND 11.

THE EQUIPMENT LIST WAS REVISED.  
THE WEIGHT AND BALANCE C.G. WAS AMENDED

\*\*\*\*\*NOTHING FOLLOWS\*\*\*\*\*

☐ Additional Sheets Are Attached



# APPLICATION FOR AIRWORTHINESS CERTIFICATE

INSTRUCTIONS — Print or type. Do not write in shaded areas; these are for FAA use only. Submit original only to an authorized FAA Representative. If additional space is required, use an attachment. For special flight permits complete Sections II and VI or VII as applicable.

I. AIRCRAFT DESCRIPTION	1. REGISTRATION MARK <b>N316DF</b>	2. AIRCRAFT BUILDER'S NAME (Make) <b>RAYTHEON AIRCRAFT CO.</b>	3. AIRCRAFT MODEL DESIGNATION <b>58</b>	4. YR. MFR. <b>1997</b>	FAA CODING <b>7150003</b>
	5. AIRCRAFT SERIAL NO. <b>TH-1817</b>	6. ENGINE BUILDER'S NAME (Make) <b>Continental</b>	7. ENGINE MODEL DESIGNATION <b>IO-550-C</b>		<b>17042</b>
	8. NUMBER OF ENGINES <b>2</b>	9. PROPELLER BUILDER'S NAME (Make) <b>McCauley</b>	10. PROPELLER MODEL DESIGNATION <b>3AF32C512C</b>		11. AIRCRAFT IS (Check if applicable) <input checked="" type="checkbox"/> IMPORT

II. CERTIFICATION REQUESTED	APPLICATION IS HEREBY MADE FOR: (Check applicable items)												
	A	1	<input checked="" type="checkbox"/>	STANDARD AIRWORTHINESS CERTIFICATE (Indicate category)			<input checked="" type="checkbox"/>	NORMAL	UTILITY	ACROBATIC	TRANSPORT	GLIDER	BALLOON
	B	SPECIAL AIRWORTHINESS CERTIFICATE (Check appropriate items)											
		2		LIMITED									
		5		PROVISIONAL (Indicate class)									
		3		RESTRICTED (Indicate operation(s) to be conducted)									
		4		EXPERIMENTAL (Indicate operation(s) to be conducted)									
		8		SPECIAL FLIGHT PERMIT (Indicate operation to be conducted, then complete Section VI or VII as applicable on reverse side)									
		1		CLASS I									
		2		CLASS II									
	1		AGRICULTURE AND PEST CONTROL		2		AERIAL SURVEYING		3		AERIAL ADVERTISING		
	4		FOREST (Wildlife conservation)		5		PATROLLING		6		WEATHER CONTROL		
	7		CARRIAGE OF CARGO		0		OTHER (Specify)						
	1		RESEARCH AND DEVELOPMENT		2		AMATEUR BUILT		3		EXHIBITION		
	4		RACING		5		CREW TRAINING				MKT. SURVEY		
	0		TO SHOW COMPLIANCE WITH FAR										
	1		FERRY FLIGHT FOR REPAIRS, ALTERATIONS, MAINTENANCE OR STORAGE										
	2		EVACUATE FROM AREA OF IMPENDING DANGER										
	3		OPERATION IN EXCESS OF MAXIMUM CERTIFICATED TAKE-OFF WEIGHT										
	4		DELIVERING OR EXPORT		5		PRODUCTION FLIGHT TESTING						
	6		CUSTOMER DEMONSTRATION FLIGHTS										
C	6		MULTIPLE AIRWORTHINESS CERTIFICATE (Check ABOVE "Restricted Operation" and "Standard" or "Limited," as applicable.)										

III. OWNER'S CERTIFICATION	A. REGISTERED OWNER (As shown on certificate of aircraft registration)		IF DEALER, CHECK HERE <input checked="" type="checkbox"/>	
	NAME <b>RAYTHEON AIRCRAFT COMPANY</b>		ADDRESS <b>P.O. Box 85 Wichita, Kansas 67201</b>	
	B. AIRCRAFT CERTIFICATION BASIS (Check applicable blocks and complete items as indicated)			
	<input checked="" type="checkbox"/>	AIRCRAFT SPECIFICATION OR TYPE CERTIFICATE DATA SHEET (Give No. and Revision No.) <b>3A16, Rev. 77</b>	<input checked="" type="checkbox"/>	AIRWORTHINESS DIRECTIVES (Check if all applicable AD's complied with and give latest AD No.) <b>ISSUE 97-10</b>
		AIRCRAFT LISTING (Give page number(s)) <b>N/A</b>	<input checked="" type="checkbox"/>	SUPPLEMENTAL TYPE CERTIFICATE (List number of each STC incorporated) <b>SA1781CE-D, SA1524CE-D, SA00248WI-D</b>
C. AIRCRAFT OPERATION AND MAINTENANCE RECORDS				
<input checked="" type="checkbox"/>	CHECK IF RECORDS IN COMPLIANCE WITH FAR 91.417	TOTAL AIRFRAME HOURS <b>5:55</b>	3	EXPERIMENTAL ONLY (Enter hours flown since last certificate issued or renewed) <b>N/A</b>

D. CERTIFICATION — I hereby certify that I am the registered owner (or his agent) of the aircraft described above, that the aircraft is registered with the Federal Aviation Administration in accordance with Section 501 of the Federal Aviation Act of 1958, and applicable Federal Aviation Regulations, and that the aircraft has been inspected and is airworthy and eligible for the airworthiness certificate requested.

DATE OF APPLICATION <b>5-21-97</b>	NAME AND TITLE (Print or type) <b>R.M. Workman - Section Manager Flight Inspection</b>	SIGNATURE 
---------------------------------------	---	---------------

IV. INSPECTION AGENCY VERIFICATION	A. THE AIRCRAFT DESCRIBED ABOVE HAS BEEN INSPECTED AND FOUND AIRWORTHY BY: (Complete this section only if FAR 21.183(d) applies)					
	2	FAR PART 121 OR 127 CERTIFICATE HOLDER (Give Certificate No.)	3	CERTIFICATED MECHANIC (Give Certificate No.)	6	CERTIFICATED REPAIR STATION (Give Certificate No.)
	5	AIRCRAFT MANUFACTURER (Give name of firm)				
	DATE	TITLE			SIGNATURE	

V. FAA REPRESENTATIVE VERIFICATION	(Check ALL applicable blocks in items A and B)		<input checked="" type="checkbox"/>	THE CERTIFICATE REQUESTED		
	A. I find that the aircraft described in Section I or VII meets requirements for		4	AMENDMENT OR MODIFICATION OF CURRENT AIRWORTHINESS CERTIFICATE		
	B. Inspection for a special flight permit under Section VII was conducted by:		FAA INSPECTOR		FAA DESIGNEE	
			CERTIFICATE HOLDER UNDER		FAR 65   FAR 121, 127 or 135   FAR 145	
	DATE <b>5-21-97</b>	DISTRICT OFFICE <b>WICHITA MIDO</b>	DESIGNEE'S SIGNATURE AND NO  <b>Robert Alliband, DOA, PC#8</b>	FAA INSPECTOR'S SIGNATURE		

<b>VII. SPECIAL FLIGHT PERMIT PURPOSES OTHER THAN PRODUCTION FLIGHT TEST</b>		<b>VIII. AIRWORTHINESS DOCUMENTATION</b> <small>(FAA use only)</small>													
<b>F. CERTIFICATION</b> — I hereby certify that I am the registered owner (or his agent) of the aircraft described above, that the aircraft is registered with the Federal Aviation Administration in accordance with Section 501 of the Federal Aviation Act of 1958, and applicable Federal Aviation Regulations, and that the aircraft has been inspected and is airworthy for the flight described.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>A.</b> Operating Limitations and Markings in Compliance with FAR 91.9</td> <td style="width: 50%;"><b>X</b></td> </tr> <tr> <td><b>B.</b> Current Operating Limitations Attached</td> <td></td> </tr> <tr> <td><b>C.</b> Data, Drawings, Photographs, etc. (Attach when required)</td> <td></td> </tr> <tr> <td><b>D.</b> Current Weight and Balance Information Available in Aircraft</td> <td><b>X</b></td> </tr> <tr> <td><b>E.</b> Major Repair and Alteration, FAA Form 337 (Attach when required)</td> <td></td> </tr> <tr> <td><b>F.</b> This Inspection Recorded in Aircraft Records</td> <td><b>X</b></td> </tr> </table>		<b>A.</b> Operating Limitations and Markings in Compliance with FAR 91.9	<b>X</b>	<b>B.</b> Current Operating Limitations Attached		<b>C.</b> Data, Drawings, Photographs, etc. (Attach when required)		<b>D.</b> Current Weight and Balance Information Available in Aircraft	<b>X</b>	<b>E.</b> Major Repair and Alteration, FAA Form 337 (Attach when required)		<b>F.</b> This Inspection Recorded in Aircraft Records	<b>X</b>
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<b>B.</b> Current Operating Limitations Attached															
<b>C.</b> Data, Drawings, Photographs, etc. (Attach when required)															
<b>D.</b> Current Weight and Balance Information Available in Aircraft	<b>X</b>														
<b>E.</b> Major Repair and Alteration, FAA Form 337 (Attach when required)															
<b>F.</b> This Inspection Recorded in Aircraft Records	<b>X</b>														
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<b>NAME AND TITLE</b> (Print or type)	<b>DATE</b>														
<b>SIGNATURE</b>															

<b>VI. PRODUCTION FLIGHT TESTING</b>																																																			
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UNITED STATES OF AMERICA  
DEPARTMENT OF TRANSPORTATION—FEDERAL AVIATION ADMINISTRATION

**STANDARD AIRWORTHINESS CERTIFICATE**

1. NATIONALITY AND REGISTRATION MARKS  <b>N316DF</b>	2. MANUFACTURER AND MODEL <b>RAYTHEON AIRCRAFT COMPANY</b>  <b>58</b>	3. AIRCRAFT SERIAL NUMBER  <b>TH-1817</b>	4. CATEGORY  <b>NORMAL</b>
---	--	--	----------------------------------

5. AUTHORITY AND BASIS FOR ISSUANCE

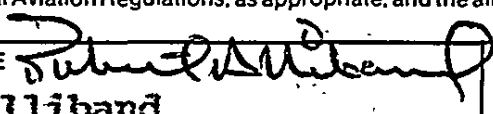
This airworthiness certificate is issued pursuant to the Federal Aviation Act of 1958 and certifies that, as of the date of issuance, the aircraft to which issued has been inspected and found to conform to the type certificate therefor, to be in condition for safe operation, and has been shown to meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention on International Civil Aviation, except as noted herein.

Exceptions:

**NONE**

6. TERMS AND CONDITIONS

Unless sooner surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator, this airworthiness certificate is effective as long as the maintenance, preventative maintenance, and alterations are performed in accordance with Parts 21, 43, and 91 of the Federal Aviation Regulations, as appropriate, and the aircraft is registered in the United States.

DATE OF ISSUANCE  <b>5-21-97</b>	FAA REPRESENTATIVE  <b>Robert Alliband</b>	DESIGNATION NUMBER  <b>DOA, PC#8</b>
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Any alteration, reproduction, or misuse of this certificate may be punishable by a fine not exceeding \$1,000, or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE FEDERAL AVIATION REGULATIONS.

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OCT 19 1999

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION <b>MAJOR REPAIR AND ALTERATION</b> (Airframe, Powerplant, Propeller, or Appliance) <i>JLL</i>				Form Approved Budget Bureau No. 04-R060.1 <b>FOR FAA USE ONLY</b> OFFICE IDENTIFICATION <b>AEA-FSDO-23</b>	
INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (for subsequent revision thereof) for instructions and disposition of this form.					
1. AIRCRAFT	MAKE RATHEON AIRCRAFT		MODEL BEECH 58 BARON		
	SERIAL NO. TH-1817		NATIONALITY AND REGISTRATION MARK N316DF		
2. OWNER	NAME (As shown on registration certificate) IMAGE AIR INC.		ADDRESS (As shown on registration certificate) 920 CORPORATE LANE, CHESAPEAKE, VA 23320		
	3. FOR FAA USE ONLY				
The data identified herein complied with applicable airworthiness requirements and is approved only for the above described aircraft subject to conformity inspection by a person authorized in FAR-43.7. This approval is only for this aircraft make, model and serial number.					
APPROVING INSPECTOR <i>[Signature]</i> <b>AEA-FSDO-23</b> DATE <u>10/5/99</u>					
4. UNIT IDENTIFICATION					5. TYPE
UNIT	MAKE	MODEL	SERIAL NO.	REPAIR	ALTERATION
AIRFRAME	***** (As described in item 1 above) *****				XX
POWERPLANT					
PROPELLER					
APPLIANCE	TYPE				
	MANUFACTURER				
6. CONFORMITY STATEMENT					
A. AGENCY'S NAME AND ADDRESS		B. KIND OF AGENCY		C. CERTIFICATE NO.	
KITCHENER AERO AVIONICS LTD. P.O. BOX 69, HGR 9, WATERLOO REG. APR7 BRESLAU, ONTARIO CANADA NOB 1MO		<input type="checkbox"/> U.S. CERTIFICATED MECHANIC <input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC <input checked="" type="checkbox"/> CERTIFICATED REPAIR STATION (FOREIGN) <input type="checkbox"/> MANUFACTURER		TRANSPORT CANADA AMO # 1-77	
D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.					
DATE OCTOBER 05, 1999		SIGNATURE OF AUTHORIZED INDIVIDUAL <i>Kevin Burch</i> 			
7. APPROVAL FOR RETURN TO SERVICE					
Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is <input type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	INSPECTION AUTHORIZATION	OTHER (Specify)	
	FAA DESIGNEE	XX FOREIGN REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		
DATE OF APPROVAL OR REJECTION OCT 07 1999		CERTIFICATE OR DESIGNATION NO. AMO # 1-77	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>Kevin Burch</i> 		

FAA Form 337 (7-87)

(8320)

**NOTICE**

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. DESCRIPTION OF WORK ACCOMPLISHED (if more space is required, attach sheets. Identify with aircraft nationality and registration mark and date work completed.)

Ref: Kitchener Aero Avionics Drawing # KAAV99-N316DF-1

Re: The installation of a Eventide Argus 5000CE Moving map Display in accordance with the following data.

**Equipment Removed:**

- King KI 227 ADF Indicator

**Equipment Installed:**

- Eventide Argus 5000CE Moving map Display (TSO C113)

**Approved Data:**

- FAA STC # SA00545NY, dated January 14, 1997 (Initial STC used as reference)

**Specified Data:**

- Argus 5000/7000CE Display, Install Manual, P/N 141000, Rev. Nov. 1996
- (Equipment, Systems & Installations)
- (Electronic Display Installations)
- (System Design Analysis)
- (Circuit Protective Device Accessibility)
- (Aircraft Metal Work)
- (Aircraft Hardware)
- (Aircraft Weight & Balance)
- (Aircraft Electrical Systems)
- (Aircraft Avionics Systems)
- (Avionics Equipment Ground Checks)
- (Static Loads)
- (Radio & Antenna Installations)
- (Adding or Relocating Instruments)
- (Pressure Vessel Wiring)

**Installation Details: General**

- New circuit breakers are Klixon 7277-2-X, located on the avionics bus.
- Avionics wiring per Mil W-22759/16 and Mil C27500.

Dwg. # KAAV99-N316DF-1







**AMENDMENT # 2 TO WEIGHT & BALANCE  
AND EQUIPMENT LIST DATED: May 17, 1997**

**MANUFACTURER:** Ratheon Aircraft Services  
**MODEL:** Beech 58 Baron  
**SERIAL NUMBER:** TH-1817  
**REGISTRATION:** N3316DF  
**OWNER/OPERATOR:** Image Air Inc.  
920 Corporate Lane, Chesapeake, VA. 23320


	<u>WEIGHT</u>	<u>ARM</u>	<u>MOMENT</u>
<b><u>LICENSED EMPTY WEIGHT:</u></b> From Amendment # 1, dated June 02, 1997	3989.95	78.40	312801.30
<b><u>EQUIPMENT REMOVED:</u></b>  King KI 227 ADF Indicator	-1.00	57.00	-57.00
<b><u>EQUIPMENT INSTALLED:</u></b>  Eventide Argus 5000CE Moving Map	4.00	56.00	224.00
<b><u>TOTALS:</u></b>	<u>3992.95</u>	<u>78.38</u>	<u>312968.30</u>

<b>GROSS WEIGHT:</b>	<b>(Max TakeOff)</b>	5,500.00 lbs.
<b>NEW LICENSED EMPTY WEIGHT:</b>		3992.95 lbs.
<b>DISPOSABLE LOAD:</b>		1507.05 lbs.
<b>NEW EMPTY WEIGHT C of G:</b>		78.38 Inches Aft Of Datum

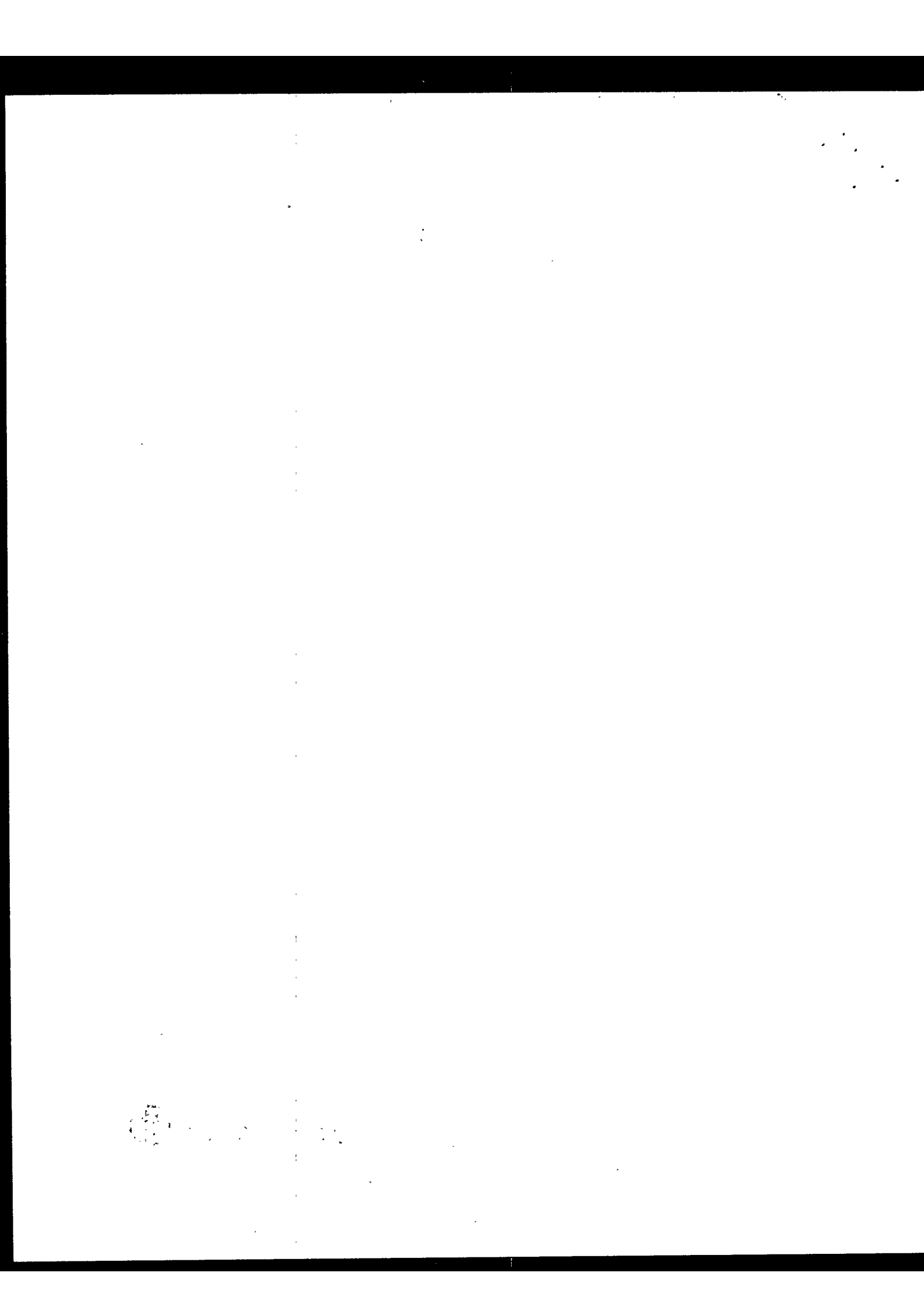
**INSTALLATION PER:** DRAWING # KAAV99-N316DF-1  
KAAV W/O # 37914

I certify that the maintenance described above has been performed in accordance with the applicable standards of airworthiness.

**DATE:** October 05, 1999

  
\_\_\_\_\_  
Kevin Birch AMO 1-77





United States of America  
 Department of Transportation — Federal Aviation Administration  
**Supplemental Type Certificate**

JAN 20 1997

*Number* SA00545NY

*This certificate, issued to* Eventide Inc.  
 One Alsan Way  
 Little Ferry, NJ 07643

*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 3/23 of the* Civil Air/ Federal Aviation Regulations.

*Original Product — Type Certificate Number:* 3A12  
*Make:* Cessna Aircraft Company  
*Model:* 172N

*Description of Type Design Change:*

Installation of an Argus 5000/CE Moving Map Display in accordance with Eventide Avionics Div., Dwg. No. 140001, Rev. 1, dated October 7, 1996.

*Limitations and Conditions:*

1. The Eventide Avionics, Airplane Flight Manual Supplement, Doc. No. 143000, Rev. N/A, for the Cessna Model C-172N, FAA approved January 14, 1997 is required with this modification.

(See STC Continuation Sheet Page 2)

*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:* September 5, 1996

*Date received:*

*Date of issuance:* January 14, 1997

*Date amended:*



*By direction of the Administrator*

*Michael J. Maurer*  
 (Signature)

Michael J. Maurer  
 Manager, Systems & Flight Test Branch  
 New York 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.





JAN 20 1997

United States of America  
Department of Transportation—Federal Aviation Administration  
**Supplemental Type Certificate**  
(Continuation Sheet)

*Number*

SA00545NY

Date of issuance: January 14, 1997

## Limitations and Conditions (Cont.)

2. This approval should not be incorporated in any aircraft of these specific models on which other previously approved modifications are incorporated, unless it is determined that the interrelationship between this change and any of those previously incorporated approved modifications will not introduce any adverse effect upon the airworthiness of the aircraft.

...END...

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

FAA FORM 5110-2-1 (10-89)

*This certificate may be transferred in accordance with FAR 21.47.*





**FAA APPROVED FLIGHT MANUAL SUPPLEMENT  
ARGUS 5000CE MOVING MAP SYSTEM  
FMS # KAAV99-N316DF-1**

**REG:** N316DF  
**TYPE:** Beech 58 Baron  
**S/N:** TH1817

Sections 1, 2, 3, 4, & 5 of this document comprise the Approved Flight Manual Supplement. Compliance with Section 2, Limitations, is mandatory.

The information contained in this document supplements the Approved Flight Manual only in the areas listed herein. For Limitations, Procedures, and Performance information not contained in this Supplement, consult the Approved Flight Manual and other applicable Approved Flight Manual Supplements.

This Supplement must be attached to the Approved Flight Manual for the aircraft with the subject design change incorporated.

**ARGUS 5000CE FMS**

**FAA APPROVED:**

10/5/99

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FAA APPROVED FLIGHT MANUAL SUPPLEMENT  
ARGUS 5000CE MOVING MAP SYSTEM  
FMS # KAAV99-N316DF-1

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ARGUS 5000CE FMS

FAA APPROVED:

10/5/99

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**FAA APPROVED FLIGHT MANUAL SUPPLEMENT  
ARGUS 5000CE MOVING MAP SYSTEM  
FMS # KAAV99-N316DF-1**

**SECTION 1: GENERAL**

**1.1 SYSTEM OVERVIEW:**

The Argus 5000CE Moving Map is a colour CRT Moving Map Display System which Receives Lat/Long position and active waypoint information from the KLN 90B IFR GPS System. The 5000CE Moving Map System as installed in N316DF can display ADF Bearing and Magnetic Heading.

**1.2 SCOPE OF APPROVAL:**

The Argus 5000CE Moving Map System is to be used as a Supplemental instrument for VFR navigation only except in accordance with the following Approved uses:

- NDB Approaches when in the *ADF Mode*
- IFR Enroute Navigation when receiving information from the IFR Approved KLN 90B GPS Navigation System

**1.3 CONFIGURATION:**

The Argus 5000CE Moving Map System installed in N316DF consists of:

- |                            |                       |
|----------------------------|-----------------------|
| • Argus 5000CE Moving Map  | (LH Instrument Panel) |
| • KLN 90B IFR GPS System   | (Center Radio Rack)   |
| • KR 87 ADF System         | (Center Radio Rack)   |
| • KI 525A HSI              | (LH Instrument Panel) |
| • ADF ON/OFF Select Switch | (LH Instrument Panel) |

**1.4 POWER:**

- Power for the Argus 5000CE Moving Map System is supplied from a 3 'ARGUS circuit breaker located on the Avionics 28VDC bus, on the RH Avionics circuit breaker panel.

ARGUS 5000CE FMS

FAA APPROVED: 

10/5/99

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**FAA APPROVED FLIGHT MANUAL SUPPLEMENT  
ARGUS 5000CE MOVING MAP SYSTEM  
FMS # KAAV99-N316DF-1**

**SECTION 2:      LIMITATIONS**

- 2.1 The Eventide Argus 5000/5000CE Reference Manual P/N 141000, dated Nov. 1996, or later applicable revision, must be available to the flightcrew when using the Argus 5000CE.
- 2.2 The Revision Status of the Argus Reference Manual must match the Software Version of the Argus 5000CE, annunciated on the Self-Test Page. (Software Version 5.0x or later applicable revision, where 'x' is the minor Software Revision level)
- 2.3 The Argus 5000CE map graphics display modes are not to be used in conjunction with other instruments while conducting approaches to or departures from landing facilities.
- 2.4 The Argus 5000CE is not intended to substitute or replace aeronautical charts and manuals required by law for VFR and IFR flight operations.
- 2.5 The Argus 5000CE Approval for IFR flight operations is predicated upon the IFR Approval of the GPS System that drives the Argus. All GPS System *Limitations* pertaining to IFR Flight must be observed when operating the Argus 5000CE under IFR. Refer to the KLN 90B Approved Flight manual Supplement.
- 2.6 The pilot must verify all waypoints and MSL vertical clearance data for accuracy by reference to current publications.
- 2.7 This Flight Manual Supplement does not supercede the Approved Flight Manual Supplement for the GPS Navigation System.
- 2.8 The Argus 5000CE must not be used for navigation information after the database expiration date displayed in the *Approvals* message.
- 2.9 The Argus is Approved for conducting NDB Approaches only in the *ADF MODE*, and only when map orientation is selected to *HEADING*.

ARGUS 5000CE FMS

FAA APPROVED:

10/5/99

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**FAA APPROVED FLIGHT MANUAL SUPPLEMENT  
ARGUS 5000CE MOVING MAP SYSTEM  
FMS # KAAV99-N316DF-1**

**SECTION 3: EMERGENCY PROCEDURES**

- 3.1 Pressing the Argus 5000CE *AUX* and *ARR* buttons simultaneously for at least one second will activate the *EMER* mode. The Argus 5000CE Moving Map Display will display 5 airports which meet the criteria previously selected in the *AMEND* Mode. The range will automatically change to the smallest range which will display all 5 airports. If there are more than 5 airports within the range, all airports will be displayed. VOR type nav aids will also be displayed.

**SECTION 4: NORMAL PROCEDURES:**

- 4.1 Normal Operating Procedures for the Argus 5000CE are contained in the Argus 5000/5000CE Reference Manual, Eventide P/N 141000, dated Nov. 1996, or later applicable revision.
- 4.2 POWER-UP/PRE-FLIGHT TEST:**

Upon initial power-up of the Argus 5000CE, the *APPROVAL* message is displayed, followed by the message that "Aeronautical Charts Must Be Available as Required By Law", the Date and Time, Argus Serial Number, and Software Version. The Database Serial Number, Configuration, *EFFECTIVE* Date, and *EXPIRATION* Date are also displayed.

ARGUS 5000CE FMS

FAA APPROVED:

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FAA APPROVED FLIGHT MANUAL SUPPLEMENT  
ARGUS 5000CE MOVING MAP SYSTEM  
FMS # KAAV99-N316DF-1

**SECTION 4:**      **NORMAL PROCEDURES:**      *continued*

**4.3 ADF MODE Operating Procedures:**      (NDB Approach Operations)

- a) The **ADF MODE** is automatically displayed following the initial messages after power-up of the Argus 5000CE.
- b) The Argus 5000CE must be oriented by the aircraft's slaved compass system for NDB Approach operations. **HEADING/TRACK** orientation may be selected in the **DISPLAY FEATURES** page of the **AMEND** Sub-Mode.
- c) The RMI Pointer Select Switch must be selected to **ADF (ON)**.

**4.4 POSITION VERIFICATION:**

The Argus 5000CE may be used to verify the position of the aircraft in relation to the computed Lat/Long position from the GPS Navigation System. This reasonableness check must be performed prior to using the Argus for navigation. Use the following method:

- Select either the **DEParture** or **ENRoute** mode to the 1nm or 2nm range to allow the actual checkpoint facility to appear on the screen.
- If the symbolic aircraft does not appear within 1.7nm of that facility, the Argus may not be used for navigation, and the GPS System accuracy should be checked.

**SECTION 5:**      **PERFORMANCE:**

No Change.

ARGUS 5000CE FMS

FAA APPROVED:

10/5/99

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