Left Engine

ENGINE RECORD

Manufacturer: Pratt & Whitney **Model:** R-985-AN-14B
Serial No: JP-204753 **Type Certificate:** 5E-1
This engine is currently installed in aircraft:

Min. Octane Fuel: 80/87 Aviation * **Spark Plug Gap:** .015 - .018 in. *
Oil Grade Summer: 120 wt. Winter: 100 wt.
Magneto Time: 25° BTC **Point Setting:** Bosch .008 - .010 in.
Firing Order: 1-3-5-7-9-2-4-6-8 Bendix N\A
Recommended Overhaul at _____ **Hours.** *
Crankshaft Serial No.: 8683 **Cam Serial No.:** D803
*** see Pratt & Whitney Maintenance Manual P\N 118611**

NOTES

CAUTION

RUN THIS ENGINE WITH NON-DETERGENT OIL 100-120 UNTIL RINGS COMPLETELY SEAT.
NONCOMPLIANCE NULLIFIES WARRANTY.
WARRANTY VOID, IF ENGINE IS RUN WITH AUTOMOTIVE FUEL.

In the absence of manufactures specific operating instructions please note the following recommendations:

1) Avoid Idling engine at lower Manifold Pressures for extended periods of time, for at least 35 hrs of operation.
2) Use full power at take-off to Facilitate proper cylinder cooling.
3) Maintain a least 1" of manifold pressure for every 100-RPM on extended descents.
4) Cruise Power - Maximum spread of 10 or less on Manifold to RPM. i.e. 2000 RPM = 30" Hg., 1900 RPM = 29" Hg,
5) Avoid shock-cooling Cylinder before and during shut down.

COVINGTON AIRCRAFT ENGINES, INC.
OKMULGEE OKLAHOMA 74447
SHOP No. CP2R750K

DATE	TOTAL TIME IN SERVICE	TOTAL TIME SINCE OVERHAUL	TACH OR RECORDING METER TIME	DESCRIPTION OF WORK PERFORMED – SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK

COVINGTON AIRCRAFT

FAA Approved Repair Station No. CP2R750K EASA.145.4356
Hwy. 75 N. & Airport Road / P.O. Box 1344
Okmulgee, OK 74447 Ph: 918-756-8320 Fax: 918-756-3424

Date:	Engine Model:	Engine S/N:	TSOH:	EST. Total Time:
June 20, 2023	R-985-AN-14B	JP-204753	0:00	
Crankshaft S/N:	**Crankshaft P/N:**	**Cam S/N:**	**Cam P/N:**	
8683	261280	D803	9903	

OVERHAULED IN ACCORDANCE WITH PRATT & WHITNEY OVERHAUL MANUAL P\N 123440 AND COVINGTON PROCESSES. C/W A.D. NOTE 56-06-02, 57-05-04, 66-14-04, 68-09-01, & 78-08-07. ENGINE TEST RUN - TEST OK. "NEW PISTONS".

MAINTENANCE RELEASE:

This certifies that the work specified above was carried out in accordance with Federal Aviation Regulations and current manufacturer's specifications. In respect to the work performed, the engine/component is approved for return to service.

Pertinent details of the repair are on file at this repair station under work order No: **16235**

Authorized Signature: Date: June 20, 2023

04 Jan 2024	N 611WP: Engine Serial # JP 204753 (Left)	Hobbs Time: 410.5	TTIS: 6860.4	TSMOH: 0.0

Work Performed: Installed engine overhauled by Covington Radial Engines under work order 16236 and completed 100 Hour Inspection. Cylinder/Compressions: 1/78, 2/76, 3/78, 4/77, 5/78, 6/77, 7/76, 8/77, 9/77. Removed, stripped, and inspected motor mount. Motor mount treated with Stewart Systems Steel Conversion Coating E7500, primed with Stewart System EcoPoxy Primer E7620, Smoke Gray, and top coated with Stewart Systems EcoPoly Top Coat, E22301, Smoke Gray. Replaced bonding straps, replaced all attachment hardware, replaced shock mounts with one Lord part Number J-5385-1, and two Lord Part Number J-5384-1. Stripped, inspected, and repainted engine cowling mounts using Stewart System EcoPoxy Primer E7620, Smoke Gray, and top coated with Stewart Systems EcoPoly Top Coat, E22802, Metallic Silver. All exhaust components Inspected according to AC43.13-1B, Sec 8-45 thru 8-49c, cleaned according to AC43.13-1B, Sec 4-77-b, and welded, if required, according to AWS D17.1 by Acorn Welding, a Hartzell Company. See individual work orders for specific details. Replaced all low-pressure hoses with Mil Spec 6000 hose. Replaced all high-pressure hoses with Aeroquip 303 fabricated according to AC43.13-1B, Dated 9/18/98 Chapter 9-30 (d), Eaton Aerospace Hose Assembly Instructions, TF100-16E, April 2013, and leak tested at twice the service pressure for the specific system/component. Replaced AN-900 crush washers on Hydromatic Propeller Valve Adapter. Deactivated propeller alcohol system by removing firewall-propeller lines, capping firewall line, and deactivating system circuit breaker. Serviced engine with Aeroshell W100 mineral oil. Reinstalled propeller according to Hamilton Standard Service Manual No. 140, Aug 1947. Complied with AD-78-07-08 by visual inspection, next due at 510.5. AD 68-09-01 next due at Hobbs 2010.5, TSMO 1600.0. All work accomplished according to 14 CFR 43, Appendix D, T.O. 1C-45G-2, 1 Mar 60 (C-45H Maintenance Manual), T.O. 1C-45B-6, 8/15/58), and Pratt and Whitney Maintenance Manual Part No. 118611, Sep 1979. Operational checks satisfactory. I certify this engine was inspected in accordance with a 100 hour inspection and found to be in an airworthy condition.

Accessories Installed: Propeller Governor, Hamilton Standard (Ratier) Part Number 4B2-P8, Serial Number 10406, Overhauled by S&T Aircraft Accessories, CC2R737K under work order number 65713, 14 Apr 2023. Vacuum Pump, Pesco Products, Type 3-12, Part Number 3P-207-JE, Serial Number PE033697, Overhauled by S&T Aircraft Accessories, CC2R737K, under work order number 65910, 05 Jun 2023. Tachometer Generator, General Electric AN5531-2, Part Number CM7AAN, Serial Number 43-1004682, Control Number DA23-204-AMC-04-38T, Overhauled by S&T Aircraft Accessories, CC2R737K, under work order number 65573, 02 Mar 2023. Fuel Pump, Part Number TF900-5, Serial Number 488715W, Overhauled by S&T Aircraft Accessories, CC2R737K, under work order number 65784, 26 Apr 2023. Magnetos, American Bosch, Right Magneto Part Number SB9RU3, Serial Number B55696, overhauled by Covington Aircraft engines under work order 10055. Left Magneto Part Number SB9RU-3, Serial Number BB5890, overhauled by Covington Aircraft Engines under work order 10038. Carburetor, Bendix Stromberg Model NA-R9B, Part Number A-30250-2, Serial Number 5710598. Starter, Eclipse Aviation Type 756, Model 21, E80, Serial Number 13529, Style C. Oil Filter, Airwolf KFC-K015-E remote oil filter assembly (STC SA01282NY), see FAA Form 337 for details. Exhaust Gaskets, Sol Company "SOLCO" gaskets (STC SE5141NM), see FAA Form 337 for details. Generator, Bendix Aviation Corporation, Stock Number AF4213-30E181, Drawing Number, 30E16-1-A, Serial Number R-3121 V, 30 Volt, 100 Amp.

Signature: Roger Sharp, A&P 2540171

US Department of Transportation
Federal Aviation Administration

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

OMB No. 2120-0020
Exp: 5/31/2018

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	Serial No.	
N 611WP	AF-875	
Make	**Model**	**Series**
Beechcraft	C-45	H

2. Owner

Name *(As shown on registration certificate)*	Address *(As shown on registration certificate)*
NOT THE CAF LLC	Address 440 Toro Pass Road
	City Wimberly State Texas
	Zip 78676 Country USA

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☐	AIRFRAME	Beechcraft	*(As described in Item 1 above)*	AF-875
☐	☒	POWERPLANT	Pratt & Whitney	R-985	JP-204753
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address	B. Kind of Agency		C. Certificate No.
Name Roger Sharp	☒	U. S. Certificated Mechanic	☐ Manufacturer
Address 4359 Mather	☐	Foreign Certificated Mechanic	
City Kyle State Texas	☐	Certificated Repair Station	
Zip 78640 Country USA	☐	Certificated Maintenance Organization	2540171

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 ☐	Signature/Date of Authorized Individual	16 DEC 2023

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	☐	Repair Station	X	Inspection Authorization		Other *(Specify)*

Certificate or Designation No.	Signature/Date of Authorized Individual	16 Dec 2023
3105217		

FAA Form 337 (10/06)

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 611WP	16 Dec 2023
Nationality and Registration Mark	Date

1. Introduction: STC SE5141NM modifies the exhaust system on Pratt & Whitney R-985 engines.
2. Description: These SOLCO gaskets replace the existing copper cylinder-exhaust stack gaskets.
3. Control, operation information, or special procedures, if any: Not applicable.
4. Servicing Information: Not applicable.
5. Maintenance Instructions: Not applicable.
6. Troubleshooting Information: Not applicable.
7. Removal and replacement information: Contained in the STC.
8. Diagrams: SOL-985 included in the STC.
9. Special inspection requirements: Not applicable.
10. Application of protective treatments: Not applicable.
11. Data: Installation instructions included in the STC.
12. List of special tools: None.
13. For commuter category aircraft: Not applicable.
14. Recommended overhaul periods: This part is life-limited at 1600 hours, or removal whichever occurs first.
15. ALS: No additional airworthiness limitations.
16. Maintenance Information acceptable to the FAA: Contained in the STC.

----------LAST ITEM----------

☐ Additional Sheets Are Attached

US Department of Transportation
Federal Aviation Administration

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

OMB No. 2120-0020
Exp: 5/31/2018

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	Serial No.	
N 611WP	AF-875	
Make	**Model**	**Series**
Beechcraft	C-45	H

2. Owner

Name *(As shown on registration certificate)*	Address *(As shown on registration certificate)*
NOT THE CAF LLC	Address 440 Toro Pass Road
	City Wimberly State Texas
	Zip 78676 Country USA

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☐	AIRFRAME	Beechcraft	*(As described in Item 1 above)*	AF-875
☐	☒	POWERPLANT	Pratt & Whitney	R-985	JP-204753
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address	B. Kind of Agency		C. Certificate No.
Name Roger Sharp	☒	U. S. Certificated Mechanic	☐ Manufacturer
Address 4359 Mather	☐	Foreign Certificated Mechanic	
City Kyle State Texas	☐	Certificated Repair Station	
Zip 78640 Country USA	☐	Certificated Maintenance Organization	2540171

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 ☐

Signature/Date of Authorized Individual

16 DEC 2023

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		Repair Station	X	Inspection Authorization		Other *(Specify)*

Certificate or Designation No. 3105217

Signature/Date of Authorized Individual

16 DEC 2023

FAA Form 337 (10/06)

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 611WP	16 Dec 2023
Nationality and Registration Mark	Date

1. Introduction: STC SA01282NY adds an oil filter to engine oil system.
2. Description: This modification adds an oil filter with replaceable filter elements between the engine oil outlet and the oil cooler.
3. Control, operation information, or special procedures, if any: Not applicable.
4. Servicing Information: Not Applicable.
5. Maintenance Instructions: Contained in Airwolf Filter Corporation, AFC-K000-ICA, 25 Oct 2013.
6. Troubleshooting Information: Not applicable.
7. Removal and replacement information: Contained in the STC.
8. Diagrams: See Airwolf Installation Drawing AFC-D-0050.
9. Special inspection requirements: Not applicable.
10. Application of protective treatments: Not applicable.
11. Data: Installation instructions included in the STC.
12. List of special tools: None.
13. For commuter category aircraft: Not applicable.
14. Recommended overhaul periods: None.
15. ALS: No additional airworthiness limitations.
16. Maintenance Information acceptable to the FAA: Contained inAFC-K000-ICA, 25 Oct 2013.

----------LAST ITEM----------

☐ Additional Sheets Are Attached

1. Approving National Aviation Authority / Country: FAA/UNITED STATES	2. AUTHORIZED RELEASE CERTIFICATE FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG	3. Form Tracking Number: COVR 0620231

4. COVINGTON AIRCRAFT

4. Organization Name and Address: Covington Aircraft Engines, Inc.
201 E. Airport Rd., Okmulgee, OK 74447
Repair Station # CP2R750K

5. Work Order, Contract or Invoice no.
16235

6. Item	7. Description	8. Part Number	9. Quantity	10. Serial/ Batch Number	11. Status/Work
1	AIRCRAFT ENGINE	Pratt & Whitney Wasp JR. R-985-AN-14B	1	JP-204753	OVERHAULED
2	MAGNETO-BOSCH SB9RU-3/C-3	AN-9511	1	BB-101194	OVERHAULED
3	MAGNETO-BOSCH SB9RU-3/C-3	AN-9511	1	BB-7071	OVERHAULED

12. Remarks:

WORK DONE: Overhauled and Test Run in accordance with Pratt and Whitney Overhaul Manual Part No. 123440 Rev. October 1979, Applicable Instructions, and Covington Processes for continued Airworthiness or other data acceptable to or approved by the Administrator. C/W all mandatory A.D.'s and S.B's

A COMPLETE DISCRIPTION OF WORK PERFORMED IS RECORDED UNDER THE WORK ORDER REFERENCE IN BLOCK 5
Certifies that the work specified in Block 11/12 was carried out in accordance with EASA Part 145 and in respect to that work the[product/article] is considered ready for release to service under EASA Part 145 approval no. EASA. 145.4356

Limited life parts must be accompanied by maintenance history including total time/total cycles/time since new.

13a. Certifies the Items Identified Above Were Manufactured In Conformity to:	14a.
☐ Approved Design Data and are in a Condition for Safe Operation. ☐ Non-Approved Design Data Specified in Block 12.	☑ CFR 43.9 Return to Service ☑ Other Regulations Specified in Block 12 Certifies that unless otherwise specified in block 12, the work identified in Block 11 and described in Block 12, was accomplished inaccordance with Title 14, Code of Federal Regulations, Part 43 and in respect to that work, the items are approved for return to service.

13b. Signature	13c. FAA Authorization No.	14b. Authorized Signature	14c. Certificate Number
			CP2R750K
13d. Name (*Typed or Printed*)	13e. Date (dd/mmm/yyyy):	14d. Name (*Typed or Printed*) Logan Simmons	14e. Date (dd/mmm/yyyy): 20/JUN/2023

User / Installer Responsibility

It is important to understand that the existence of this Document alone does not automatically constitute authority to install the part/component/assembly.
Where the user/installer performs work in accordance with the national regulations of an Airworthiness Authority different than the Airworthiness Authority of the country specified in block 1 it is essential that the user/installer ensures that his/her Airworthiness Authority accepts parts/ components/assemblies from the Airworthiness Authority of the country specified in block 1.
Statements in block 13a and 14a do not constitute installation certification. In all cases aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.
The FAA Form 8130-3 and JAA Form One are equivalent. Other countries such as Canada also have equivalent acceptance documents.

*Installer must cross check eligibility with applicable technical data

1. Approving Civil Aviation Authority/Country: FAA/UNITED STATES	2. AUTHORIZED RELEASE CERTIFICATE FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG	3. Form Tracking Number: COVR050231
4. COVINGTON AIRCRAFT — 4. Organization Name and Address: COVINGTON AIRCRAFT ENGINES, INC., HWY. 75N & Airport Rd., OKMULGEE, OK 74447 REPAIR STATION # CP2R750K		5. Work Order/Contract/Invoice Number: 10046

6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status/Work:
1	Magneto-Bosch SB9RU-3/C-3	AN-9511	1ea.	BB 7071	Overhauled

12. Remarks:

Work Done: Overhauled in accordance with applicable Instructions, and Covington Processes for continued Airworthiness or other data acceptable to or approved by the Administrator. C/W all mandatory A.D.'s and S.B's

Certifies that the work specified in Block 11/12 was carried out in accordance with EASA 145 and in respect to that work, the aircraft component is considered ready to release to service under EASA acceptance certificate EASA.145.4356

Limited life parts must be accompanied by maintenance history including total time/total cycles/time since new.

13a. Certifies the items identified above were manufactured in conformity to:	14a. ☐ 14 CFR 43.9Return to Service ☑ Other regulation specified in Block 12
☐ Approved design data and are in condition for safe operation. ☐ Non-approved design data specified in Block 12.	Certifies that unless otherwise specified in block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.

13b. Signature	13c. Approval/Authorization No.:	14b. Authorized Signature:	14c. Approval/Certificate No.: CP2R750K
13d. Name (Typed or Printed)	13e. Date (dd/mmm/yyyy)	14d. Name (Typed or Printed) Logan Simmons	14e. Date (dd/mmm/yyyy) 01/MAY/2023

User/Installer Responsibilities

It is important to understand that the existence of this Document alone does not automatically constitute authority to install the aircraft engine/propeller/article. Where the user/installer performs work in accordance with the national regulations of an Airworthiness Authority different than the Airworthiness Authority of the country specified in block 1, it is essential that the user/installer ensures that his/her Airworthiness Authority accepts aircraft engine(s)/propeller(s)/article(s) from the Airworthiness Authority of the country specified in block 1. Statements in block 13a and 14a do not constitute installation certification. In all cases aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.

FAA Form 8130-3 (02-14)

1. Approving Civil Aviation Authority/Country: FAA/UNITED STATES	2. AUTHORIZED RELEASE CERTIFICATE FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG	3. Form Tracking Number: COVR0314236
4. COVINGTON AIRCRAFT — 4. Organization Name and Address: COVINGTON AIRCRAFT ENGINES, INC., HWY. 75N & Airport Rd., OKMULGEE, OK 74447 REPAIR STATION # CP2R750K		5. Work Order/Contract/Invoice Number: 10043

Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status/Work:
1	Magneto-Bosch SB9RU-3/C-3	AN-9511	1ea.	BB 101194	Overhauled

12. Remarks:

Work Done: Overhauled in accordance with applicable Instructions, and Covington Processes for continued Airworthiness or other data acceptable to or approved by the Administrator. C/W all mandatory A.D.'s and S.B's

Certifies that the work specified in Block 11/12 was carried out in accordance with EASA 145 and in respect to that work, the aircraft component is considered ready to release to service under EASA acceptance certificate EASA.145.4356

Limited life parts must be accompanied by maintenance history including total time/total cycles/time since new.

13a. Certifies the items identified above were manufactured in conformity to:	14a. ☐ 14 CFR 43.9Return to Service ☑ Other regulation specified in Block 12
☐ Approved design data and are in condition for safe operation. ☐ Non-approved design data specified in Block 12.	Certifies that unless otherwise specified in block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.

13b. Signature	13c. Approval/Authorization No.:	14b. Authorized Signature:	14c. Approval/Certificate No.: CP2R750K
13d. Name (Typed or Printed)	13e. Date (dd/mmm/yyyy)	14d. Name (Typed or Printed) Logan Simmons	14e. Date (dd/mmm/yyyy) 14/MAR/2023

User/Installer Responsibilities

It is important to understand that the existence of this Document alone does not automatically constitute authority to install the aircraft engine/propeller/article. Where the user/installer performs work in accordance with the national regulations of an Airworthiness Authority different than the Airworthiness Authority of the country specified in block 1, it is essential that the user/installer ensures that his/her Airworthiness Authority accepts aircraft engine(s)/propeller(s)/article(s) from the Airworthiness Authority of the country specified in block 1. Statements in block 13a and 14a do not constitute installation certification. In all cases aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.

FAA Form 8130-3 (02-14)

COVINGTON AIRCRAFT ENGINES, INC.

FAA Approved Engine Overhaul Shop No. CP2R750K
Pratt & Whitney
R-985 / Wasp Jr. & R-1340 / Wasp Series
Highway 75N & Airport Road
P.O. Box 1344
Okmulgee, OK 74447

WARRANTY

Engine Type: R-985-AN-14B **Serial No.:** JP-204753

Date: June 20, 2023 **Customer:** Roger Sharp

This engine is warranted against failure for 100 hours or 120 days, whichever comes first. In the event of failure during this period, remove engine and ship prepaid back to Covington Aircraft Engines, Okmulgee, Oklahoma, for warranty. This warranty covers only this engine against defective materials and workmanship by Covington Aircraft Engines' employees. This warranty does not cover property damage or injuries caused due to engine failure or any accident related to this engine.

This Warranty is Void

1. If propeller strikes any object causing loss of R.P.M. or sudden stoppage.
2. If any cylinder or magneto is removed off this engine except for defectiveness during operation on this engine.
3. If nose case or rear section is removed without permission from Covington Aircraft Engines.
4. If oil tank is not flushed.
5. If oil cooler isn't changed; when previous engine failed.
6. If engine is ran over 30 seconds without oil pressure.
7. Because of faulty installation.
8. If engine runs out of oil during operation.
9. If the engine is not operated in accordance with Pratt & Whitney Specifications.
10. If oil screen is not cleaned within the first 25 hours and recorded in the Engine log.
11. If engine is hydraulic locked.

COVINGTON AIRCRAFT ENGINES, INC.

FAA Repair Station No. CP2R750K
EASA.145.4356 - DNA Approval No. 1B-207
Okmulgee, Oklahoma 74447

W.O.: 16235
DATE: 6/20/2023

Customer: Roger Sharp Address:

City: State: Zip:

Type Engine: R-985-AN-14B Serial No.: JP-204753 TSO: 0.00 EST:

Type of Work: Overhaul T.T.:

WORK TO BE DONE

Overhaul in accordance with Pratt and Whitney Overhaul Manual P\N 123440 and applicable Covington processes. A.D. 56-06-02 C\W, A.D. 96-15-02 C\W when applicable A.D. 99-11-02 C\W,. Mandatory S.B.'s C\W.

WORK ACCOMPLISHED

PARTS OVERHAULED	MECHANIC	INSPECTOR
Front Section	NICK BUELL	
Main Crankcase	NICK BUELL	
Crankshaft	NICK B.	
Masterod	NICK BUELL	
Pistons	DOUG ASHLEY	
Cylinders	JIMMY FLOYD	
Super Charger Section	ROY BAILEY	
Rear Section	TYLER B.	
Harnesses	JOSH BOUGHMAN	
Final Assembly	JOSH BOUGHMAN	
Magneto-Right: Bosch SB9RU-3/C-3 S/N BB-101194	BLAINE ABBOTT	
Magneto-Left: Bosch SB9RU-3/C-3 S/N BB-7071	BLAINE ABBOTT	
Carburetor S/N		
TEST RUN	LOGAN SIMMONS	
N.D.T INSPECTION:		
Magnetic Particle Inspeciton	HUNTER PEAVLER	
Fluorecent Penetrant Inspection	HUNTER PEAVLER	

Date Completed: 6/5/2023

ENGINE S/N: JP-204753 **WORK ORDER No.: 16235**

FRONT SECTION:

Guides:	OK	Thrust Brg Liner:	OK
Tappets:	OK	Thrust Bearing:	NEW
Rollers:	9 NEW EX.	Thurst Spacer:	OK
Pins:	NEW	Data Plate:	OK
Frt Ring Carrier:	+25+25W NEW	Prop Reg Valve:	OK
Oil Seal Rings:	+10+25W NEW	Prop Oil Feed Pipe:	OK
Thrust Nut:	OK	Oil Manifold:	OK
Oil Slinger:	OK	Studs:	OK
Thrust Plate:	ORIGINAL	Plugs:	OK
Remarks:			

MAIN CRANKCASE:

Mating No (Front):	111J	Cam Red Gear Nut:	OK
(Rear):	111J	Oil Press Fitting:	OK
Liner (Front):	OK	Crankcase Bolts:	OK
(Rear):	OK	Lifting Links:	OK
Cyl Pads:	OK	Threads:	OK
Cam Red Gear Bush:	OK	C\Case Studs:	OK
Cam Red Gear:	OK	Cyl Studs:	OK
Remarks:			

CAM:

Track:	OK	Dr Gear Bearing Cl:	OK
Gear Teeth:	OK	Oil Feed Bracket:	OK
Bearing:	OK	Cam.Oil Seal Rings:	NEW
Cam Dr Gear:	OK	Rings Cam Cl:	OK
Spacer:	OK		
Remarks:	S/N: D803		

CRANKSHAFT:

C\S MB Assy:	OK	Ser No (Front):	8683
Run Out: Thrust:	.002	(Rear):	8683
End:	.004	Splines (Prop Hub):	OK
Crank Pin:	-2	(Crank Pin):	OK
Dia Frt (Horiz):	2.496	Dia Rear (Horiz):	2.496
(Vert):	2.496	(Vert):	2.496
Main Bearing (Front):	OK	Flyweight Liners:	NEW
(Rear):	OK	Dynamic Dampers:	OK
C\Shaft Bolt:	OK	Damper Screws:	OK
C\Shaft Plugs:	OK	Spring Drive: Bolt:	OK
Rear Gear:	OK	Springs:	OK
Spr Drive Plate-Fixed:	OK	Buttons:	OK
Spr Drive Plate-Floating:	OK	Type:	14-B
Remarks:			

Inspector: Logan Simmons **Approved:**

ENGINE S/N: JP-204753 **WORK ORDER No: 16235**

MASTER ROD:

Bearing:	RPR	Bearing Time:	RPR
Diameter:	2.501	Bushing (Piston Pin):	NEW
Clearance:	.005	Knuckle Pin Holes:	OK
Knuckle Pin Locks:	OK	Oil Passages:	OK
Lock Screws:	OK		

Remarks:

LINK RODS	1	2	3	4	N\A	6	7	8	9
KNUCKLE PIN BUSHINGS	NEW	-	-	-		-	-	-	-
PISTON PIN BUSHINGS	NEW	-	-	-		-	-	-	-
PISTON PIN PLUGS	OK	-	-	-		-	-	-	-
KNUCKLE PIN HOLES	OK	-	-	-		-	-	-	-
KNUCKLE PINS	R/C C	C	C	+1E		+1E	C	B	B
PISTON PINS	1	2	3	4	5	6	7	8	9
354954	NEW	-	-	-	-	-	-	-	-

Remarks:

Inspector: Logan Simmons Approved:

ENGINE S/N: JP-204753 **WORK ORDER No: 16235**

PISTONS:

PART No: 7ea. ASC 27056 & 2 ea. ASC 40698 Compresion Ratio: 6:1

LOCATION No.	1	2	3	4	5	6	7	8	9
CONDITION	NEW	-	-	-	-	-	-	-	-

RINGS: COMPRESSION: 238446 - NEW TYPE: WEDGE

OIL CONTROL: 17097 - NEW TYPE:

OIL SCRAPER: 13681 - NEW TYPE:

REMARKS:

CYLINDERS:

PART No: TYPE: CHROME STUDS: OK

INT. PORT COUPLING: OK EXH. PORT LINER: OK EXH. PORT FACING: OK

Location No.	1	2	3	4	5	6	7	8	9
Condition	CHROME								
Taper	CHOKE	0.008 TO	0.012						
Out of Round	NONE	OVER	0.003						
Max. Dia.	STD.								
Int. Valves	OK STD.								
I.V. Head Thickness	OK								
Int. Bush/Shaft	.002	-	-	-	-	-	-	-	-
Exh. Bush/Shaft	.002	-	-	-	-	-	-	-	-
Int. Guides	NEW	-	-	-	-	-	-	-	-
Exh. Guides	NEW	-	-	-	-	-	-	-	-
Exh. Valves	OK STD.								
Exh. Valve Dia.	0.548 TO	0.5545							
Exh. Valve Stretch	OK								
Valve Seat Int.	NEW	OK	NEW	-	OK	NEW	-	-	-
Exh	NEW	-	-	-	-	-	-	-	-
Sparkplug Bush. F.	OK	-	-	-	-	NEW	-	OK	NEW
R.	OK	NEW	-	OK	NEW	-	-	OK	NEW

Rockers:	OK	Pushrod Cover Glands:	OK
Rocker Shaft:	OK	Deflector Inserts:	OK
Rocker Bearings:	NEW	Rocker Shaft Inserts:	OK
Adj Screws:	OK	Primer Fittings:	OK
Adj Screw Nuts:	OK	Inter Cyl Drain Pipes:	OK
Int Locks:	OK	Inner Ear Pipes:	OK
Exh Locks:	OK	Hose Clamps:	OK
Upper Washers:	OK	Rocker Box Studs:	OK
Lower Washers:	OK	Rocker Box Plugs:	OK
Outer Springs:	OK	Rocker Box Covers:	OK
Inner Springs:	OK	Nuts:	OK

REMARKS:

Inspector: Logan Simmons **Approved:**

ENGINE S/N: JP-204753 **WORK ORDER No: 16235**

SUMP:

Main Suction Pipe:	OK	Rocker Drain Fittings:	OK
Rocker Scav Pipe:	OK	Strainer:	OK
Plugs:	OK	Studs:	OK

REMARKS:

MISCELLANEOUS:

Push Rods:	OK	Grommets:	-
Push Rod Covers:	OK	Inter Ear Deflectors:	-
Packing Nuts:	OK	Rivets:	-
Inter Cyl Deflectors:	-	Sump Baffle:	-
Guides:	-	Primer Dist:	OK
Latch Bolts:	-	Primer Lines:	OK
Intake Pipes:	OK	Primer Clamps:	OK
Flanges:	OK	Wing Nuts:	

REMARKS:

COLLECTOR SECTION:

Ratio:	10:1	Floating Gear:		OK
Impeller:	OK	Roller Pins:		NEW
Imp Shaft:	OK	Inner Race:		NEW
Imp Bearings:	Ball - NEW	Floating Gear Washers:		OK
Imp Bearing Cage:	OK	Mag Shaft Bush:	R:	OK
Rear Spacer:	OK		L:	NEW
Bearing Cover:	OK	Mag Bush Hole	R:	OK
Shaft Nuts:	OK		L:	OK
Inter Gear Assy:	OK	Breather:		OK
Inter Brg (FRONT):	NEW	Engine Mounting Lugs:		OK
Inter Brg (REAR):	NEW	Oil Press Pipe:		OK
Inter Brg Cage:	OK	Oil Passage:		OK

REMARKS:

REAR SECTION:

Starter Shaft Bush:	OK	Vac Dr Bushing:	OK
Diameter:	1.125	Vac Dr Bearings:	OK
Starter Shaft:	OK	Oil Press Relief Val	OK
Starter Shaft Brg:	OK	Oil Strainer:	OK
Starter Jaw:	OK	Check Valve:	OK
Fuel Dr Gear:	OK	Oil Press Pipe:	OK
Fuel Dr Bracket:	OK	Oil Drain Pipe:	OK
Vac Dr Gear:	NEW	Mounting Pads:	OK
Vac Dr Housing:	OK	Threads:	OK
Generator Drive:	OK	Studs:	OK
AMP Ratio:	2 to 1 100 AMP		

REMARKS: NEW GENERATOR BEARINGS

Inspector: Logan Simmons **Approved:**

ENGINE S/N: JP-204753 **WORK ORDER No.: 16235**

MAGNETO DRIVES:

	Shaft Bush	Dia. Shaft	Dr. Cover	Packing	Bevel Gr.	Coup Gr.
R	OK	.7475	New Rubber	OK	OK	OK
L	OK	.748	New Rubber	OK	OK	OK

AUXILL. TACH. DRIVES

	V. Sh Bush	V. Sh Type	Sh. Bear.	T Br Dr.	Insert	Coupling
R	OK	OK	OK	OK	OK	OK
L	OK	OK	OK	OK	OK	OK

REMARKS:

OIL PUMP:

Body: **OK**
Drive: **OK**
Dr Gear Shaft: **OK**
REMARKS:

Idler Gears: **OK**
Idler Shaft: **OK**
Keys: **OK**

ACCESSORIES:

Magneto Type: **Bosch SB9RU-3/C-3**
Right S/N: **BB-101194**
Left S/N: **BB-7071**

Carb Model No:
Carb S/N:
Harness: **NEW 7 M.M.**

AIRWORTHINESS DIRECTIVES:

NUMBER	CODE	SUBJECT	C/W	MECHANIC	INSPECTOR
57-05-04	R-985	THRUST NUT THREADS	C/W	NICK BUELL	LOGAN SIMMONS
66-14-04	R-985	CAM REDUCTION DRIVE GEAR	C/W	NICK BUELL	LOGAN SIMMONS
68-09-01	R-985	FLYWEIGHTS AND LINERS	C/W	NICK BUELL	LOGAN SIMMONS
78-08-07	R-985	ULTRASONIC TEST	C/W	HUNTER PEAVLER	LOGAN SIMMONS
56-06-02	R-985	CYLINDER HOLD DOWN STUDS:	C/W	JOSH BOUGHMAN	LOGAN SIMMONS

PRATT AND WHITNEY SERVICE BULLETINS:

1693	R-985	DRAIN PIPE / CYLINDER INTER EAR	C/W	JOSH BOUGHMAN	LOGAN SIMMONS
1730	R-985	HEAVY DUTY PISTON PINS	C/W	JOSH BOUGHMAN	LOGAN SIMMONS
1488	R-985	CRANKSHAFT THREADS (A.D. NOTE)	C/W	NICK BUELL	LOGAN SIMMONS
1767	R-985	FRONT CASE AND STUD ASSEMBLY	C/W	NICK BUELL	LOGAN SIMMONS
621	R-985	BALANCE AND REWORK IMPELLER	C/W	ROY BAILEY	LOGAN SIMMONS
1546	R-985	MASTER ROD BEARING REWORK	C/W	NICK BUELL	LOGAN SIMMONS
1658 B	R-985	PLAIN IMPELLER BEARING	N/A	ROY BAILEY	LOGAN SIMMONS
1000	R-985	TORQUE/ STRETCH VALUES(A.D. NOTE)	C/W	JOSH BOUGMAN	LOGAN SIMMONS
1703	R-985	REWORK OF CYLINDER HEADS	C/W	HUNTER PEAVLER	LOGAN SIMMONS
1758	R-985	FLYWEIGHT AND LINER (A.D. NOTE)	C/W	NICK BUELL	LOGAN SIMMONS

Inspector: Logan Simmons **Approved:**

ENGINE TEST SHEET

Customer: Roger Sharp
Engine model: R-985-AN-14B
Engine S/N: JP-204753

Date 6/5/2023
W.O. No: 16235
Test Cell No: 2

TIME	RPM	MP	OIL TEMP		OIL PRESS			CYLINDER TEMP.				OIL CONS
			IN	OUT	MN	NO	RT	No 2	No 5	No 6	No 9	
10 MIN	1000	20.4	121	135	81.5	78	83	272	267	291	267	
10MIN	1200	20.7	148	162	81	73	85	298	289	332	293	
10 MIN	1300	22.0	159	172	82	74	86	322	316	361	313	
10 MIN	1600	24.6	176	189	82	74	86	346	342	399	335	
CHECK OIL SCREEN												
15 MIN	1800	27.1	150	171	90	80	94	359	356	419	344	
15 MIN	1900	28.8	171	195	86.5	78	91	383	388	353	371	
15 MIN	1900	28.5	171	198	86.5	74	90	393	394	461	375	
15 MIN	2000	29.6	172	199	87	75	91	399	401	467	381	
5 MIN	2100	32.3	178	205	88	74	92	399	403	470	385	
15 MIN	2000	29.9	178	206	86	73	90	397	404	471	384	1/8QT
1 MIN	2250	36.1	166	200	92	79	96	403	417	482	393	
1 MIN	600	20.3	167	181	32	28	31	299	298	333	288	

Thrust Plate: Seal

REMARKS:

MAG DROP:	LEFT	RIGHT
RPM: **2000**	100	80

OIL FLOW:	LBS PRESS	TEMP:
RPM: **2000**	85	185°F

Ambient Temperature:	78°F
Bar Press:	29.9
Oil Type and Weight:	AEROSHELL 120

Test Run by: **LOGAN SIMMONS**

Checked by: **LOGAN SIMMONS**

Oil Screen Checked by: **LOGAN SIMMONS**

MAINTENANCE RELEASE

The aircraft engine identified above was repaired and inspected in accordance with current Regulations of the Federal Aviation Administration and is approved for return to service. Pertinent detail of the repair are on file at this repair station under:

Work Order Number *16235* Date *6/5/2023* Signed _____

COVINGTON AIRCRAFT ENGINES, INC.

FAA Approved Repair Station No. CP2R750K - EASA.145.4356 - DNA Approval No. 1B-207
Hwy. 75 N. and Airport Rd.

P.O. Box 1344 Okmulgee, OK 74447

Phone (918)756-8320 Fax (918)756-0923

4

AIRCRAFT CYLINDERS OF AMERICA, INC.
1006 EAST INDEPENDENCE ST.
TULSA, OKLAHOMA 74106-5310
918/582-1785
FAA APPROVED REPAIR
STATION #HT2R884K

CYL. TYPE R-985
INV.# F6626 CYL. # 112
CUSTOMER Cov
CUST. #

The above Aircraft component was repaired & inspected in accordance with FAA regulations and was found airworthy. This unit may require further inspection before its return to service. Only work detailed below is covered by this release.

1. Channel Chrome Only
2.
3.
4.

Signed
Date

MAINTENANCE RELEASE

ACA FORM 103-3

3

AIRCRAFT CYLINDERS OF AMERICA, INC.
1006 EAST INDEPENDENCE ST.
TULSA, OKLAHOMA 74106-5310
918/582-1785
FAA APPROVED REPAIR
STATION #HT2R884K

CYL. TYPE R-985
INV.# F6626 CYL. #
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CUST. #

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Date

MAINTENANCE RELEASE

ACA FORM 103-3

2

AIRCRAFT CYLINDERS OF AMERICA, INC.
1006 EAST INDEPENDENCE ST.
TULSA, OKLAHOMA 74106-5310
918/582-1785
FAA APPROVED REPAIR
STATION #HT2R884K

CYL. TYPE R-985
INV.# CYL. #
CUSTOMER Cov
CUST. #

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Signed
Date

MAINTENANCE RELEASE

ACA FORM 103-3

1

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1006 EAST INDEPENDENCE ST.
TULSA, OKLAHOMA 74106-5310
918/582-1785
FAA APPROVED REPAIR
STATION #HT2R884K

CYL. TYPE
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CUSTOMER Cov
CUST. #

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4.

Signed
Date

MAINTENANCE RELEASE

ACA FORM 103-3

P.D. COV-538

NAME OF COMPONENT		
985 MASTER ROD BEARING		
PART NUMBER 32983 (-2)	QUANTITY 1	UNIT EA
MANUFACTURER Pratt & Whitney		
OWNER Covington Aircraft		
APPLICABLE SPECIFICATIONS: RPK 2011-07		
WORK ACCOMPLISHED: Repair Silver and Lead Indium Plate.		

The designated work accomplished was performed in accordance with current regulations of the Federal Aviation Agency and applicable manufacturer's specifications and is approved for return to service.

Pertinent details of the work accomplished are on file at this Repair Station under Shop Order

No.: 74444.03

Date: 9-21-22

Signed: [signature] for

UNITED PLATING WORKS, INC.
FAA REPAIR STATION NO. FA2R813K
4118 NORTH MINGO ROAD
TULSA, OKLAHOMA 74116

9

AIRCRAFT CYLINDERS OF AMERICA, INC.
1006 EAST INDEPENDENCE ST.
TULSA, OKLAHOMA 74106-5310
918/582-1785
FAA APPROVED REPAIR
STATION #HT2R884K

CYL. TYPE
INV.# CYL. #
CUSTOMER
CUST. #

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Signed

8

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1006 EAST INDEPENDENCE ST.
TULSA, OKLAHOMA 74106-5310
918/582-1785
FAA APPROVED REPAIR
STATION #HT2R884K

CYL. TYPE R-985
INV.# F6626 CYL. # 110
CUSTOMER Cov
CUST. #

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1. Channel Chrome Only
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Signed
Date 2-16-23

7

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1006 EAST INDEPENDENCE ST.
TULSA, OKLAHOMA 74106-5310
918/582-1785
FAA APPROVED REPAIR
STATION #HT2R884K

CYL. TYPE R-985
INV.# F6626 CYL. #
CUSTOMER
CUST. #

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6

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5

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Signed
Date

MAINTENANCE

4

CAUTION

1. USE CAST IRON RINGS FOR CHANNEL TYPE CHROME AND NU-CHROME CYLINDERS.
2. USE CHROME RINGS FOR STANDARD STEEL AND OVERSIZE STEEL CYLINDERS.
3. DO NOT HONE OR BEAD BLAST THE NU-CHROME CYLINDER BORES.
4. NU-CHROME CYLINDERS ARE CHROMED TO STANDARD AND THE POROSITY IS MECHANICALLY INDUCED.
5. All chromimum plated cylinder bores have natural or mechanical porosity. For this reason, all plated cylinder bores must be cleaned after rework, i.e. after reaming, seat grinding, or valve lapping, use solvent followed by detergent and warm water, rinse, and air dry.

BREAK IN PROCEDURE

1. *Fill engine with non-detergent oil.*
2. *Remove top spark plugs and crank engine at 10 second intervals until oil pressure shows on gauge.*
3. *Install plugs and start engine. Idle at 12/1400 RPM for 2 minutes, with a 15 minute cooling period, for 3 times.*
4. *Make mag check using cruise power 20 seconds, correct as necessary, inspect engine.*
5. *Fly for 30-40 minutes using high cruise power to determine oil consumption.*
6. *The change to A/D oil may be made any time after oil consumption has stabilized.*

3

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THE COMPONENT IDENTIFIED ON THE REVERSE SIDE WAS REPAIRED TO THE EXTENT INDICTED BELOW:

☐ COMPLETE REPAIR

☑ PARTIAL REPAIR

FURTHER REPAIR AND/OR INSPECTION OF THE COMPONENT MUST BE PERFORMED BEFORE RELEASE TO SERVICE.

SIGNED: _____ DATE: 9/21/22

UNITED PLATING WORKS, INC.
FAA REPAIR STATION NO. FA2R813K
4118 NORTH MINGO ROAD
TULSA, OKLAHOMA 74116

9

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6

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BREAK IN PROCEDURE

1. *Fill engine with non-detergent oil.*
2. *Remove top spark plugs and crank engine at 10 second intervals until oil pressure shows on gauge.*
3. *Install plugs and start engine. Idle at 12/1400 RPM for 2 minutes, with a 15 minute cooling period, for 3 times.*
4. *Make mag check using cruise power 20 seconds, correct as necessary, inspect engine.*
5. *Fly for 30-40 minutes using high cruise power*

5

CAUTION

1. USE CAST IRON RINGS FOR CHANNEL TYPE CHROME AND NU-CHROME CYLINDERS.
2. USE CHROME RINGS FOR STANDARD STEEL AND OVERSIZE STEEL CYLINDERS.
3. DO NOT HONE OR BEAD BLAST THE NU-CHROME CYLINDER BORES.
4. NU-CHROME CYLINDERS ARE CHROMED TO STANDARD AND THE POROSITY IS MECHANICALLY INDUCED.
5. All chromimum plated cylinder bores have natural or mechanical porosity. For this reason, all plated cylinder bores must be cleaned after rework, i.e. after reaming, seat grinding, or valve lapping, use solvent followed by detergent and warm water, rinse, and air dry.

BREAK IN PROCEDURE

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4. *Make mag check using cruise power 20 seconds, correct as necessary, inspect engine.*

186

1. Approving Civil Aviation Authority/Country:	2.	3. Form Tracking Number:
FAA/UNITED STATES	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG**	80725

4. Organization Name and Address:	5. Work Order/Contract/Invoice Number:
METAL IMPROVEMENT COMPANY // 1450 AVENUE "S" GRAND PRAIRIE , TEXAS 75050	0210002784

6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status/Work:
1	Master Rod	R-985	8	K21210,A30,RE6520,J15158,RE11825 J2509B,REK10901,RE15547	REPAIR

12. Remarks:

PART HAS BEEN SHOT PEENED ONLY IAW AMS2430 Rev U and MIL-S-13165C

THIS PART HAS BEEN SHOT PEEN & INSPECTED FOR FULL COVERAGE & CONFORMATIES PERTAINING TO SHOT PEEN PROCESS ONLY AND IS AIRWORTHY ONLY WITH RESPECT TO THE WORK PERFORMED.

NOTE: FURTHER MAINTENANCE PROCESSES /WORK MAY BE REQUIRED BEFORE INSTALLATION.

13a. Certifies the items identified above were manufactured in conformity to:	14a. ☒ 14 CFR 43.9 Return to Service ☐ Other regulation specified in Block 13
☐ Approved design data and are in condition for safe operation. ☐ Non-approved design data specified in Block 13.	Certifies that unless otherwise specified in block 13, the work identified in Block 12 and described in Block 13 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.

13b. Authorized Signature:	13c. Approval/Authorization No.:	14b. Authorized Signature:	14c. Approval/Certificate No.: VF1R556K
13d . Name (Typed or Printed):	13e. Date (dd/mmm/yyyy):	14d. Name (Typed or Printed):	14e. Date (dd/mmm/yyyy):

User/Installer Responsibilities

It is important to understand that the existence of this document alone does not automatically constitute authority to install the part/component/assembly.

Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness accepts aircraft engine(s)/propeller(s)/article(s) from the airworthiness authority of the country specified in Block1.

Statements in Blocks 13a and 14a do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.

1. Approving Civil Aviation Authority/Country:	2.	3. Form Tracking Number:
FAA/UNITED STATES	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG**	79675

4. Organization Name and Address:	5. Work Order/Contract/Invoice Number:
METAL IMPROVEMENT COMPANY // 1450 AVENUE "S" GRAND PRAIRIE , TEXAS 75050	0210002479

6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status/Work:
1	Master Rod	R-985	4	K24047, RE14944,RE7459,A333,RE12541	
2	Master Rod	R-1340	2	RE14693	REPAIR
3	Link Rod	985	150		

12. Remarks:

PART HAS BEEN SHOT PEENED ONLY IAW AMS2430 Rev U and MIL-S-13165C

THIS PART HAS BEEN SHOT PEEN & INSPECTED FOR FULL COVERAGE & CONFORMATIES PERTAINING TO SHOT PEEN PROCESS ONLY AND IS AIRWORTHY ONLY WITH RESPECT TO THE WORK PERFORMED.

NOTE: FURTHER MAINTENANCE PROCESSES /WORK MAY BE REQUIRED BEFORE INSTALLATION.

13a. Certifies the items identified above were manufactured in conformity to:	14a. ☒ 14 CFR 43.9 Return to Service ☐ Other regulation specified in Block 13
☐ Approved design data and are in condition for safe operation. ☐ Non-approved design data specified in Block 13.	Certifies that unless otherwise specified in block 13, the work identified in Block 12 and described in Block 13 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.

13b. Authorized Signature:	13c. Approval/Authorization No.:	14b. Authorized Signature:	14c. Approval/Certificate No.:
		Ana Escalante	VF1R556K
13d. Name (Typed or Printed):	**13e. Date (dd/mmm/yyyy):**	**14d. Name (Typed or Printed):**	**14e. Date (dd/mmm/yyyy):**
		Ana Escalante	15/SEP/2022

User/Installer Responsibilities

It is important to understand that the existence of this document alone does not automatically constitute authority to install the part/component/assembly.

Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness accepts aircraft engine(s)/propeller(s)/article(s) from the airworthiness authority of the country specified in Block1.

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78-08-07 PRATT & WHITNEY: Amendment 39-3175. Applies to Pratt & Whitney Aircraft Wasp, Jr. and R-985 model engines.

Compliance required as indicated, unless already accomplished.

To prevent cylinder head separation from barrel, perform the following in accordance with Pratt & Whitney Aircraft Service Bulletin No. 1785 or later FAA-approved revision.

1. Visually inspect cylinder heads in accordance with Part B of the bulletin as follows:

A. Cylinders not ultrasonically inspected, inspect within 50 hours time in service after effective date of the AD, and thereafter at intervals not to exceed 100 hours time in service.

B. Cylinders ultrasonically inspected, inspect within 150 hours time in service after effective date of the AD, and thereafter at intervals not to exceed 150 hours time in service.

2. Remove visibly cracked cylinders and cylinders with black combustion leakage from service before further flight.

3. After the effective date of this AD, inspect all cylinder assemblies, prior to installation on an engine, by the ultrasonic test procedure in Part A of Service Bulletin 1785 or equivalent method approved by the Chief, Engineering and Manufacturing Branch, FAA, New England Region.

4. Remove from service cylinders which show cracks in excess of the limits of Part A, Section IV, of the bulletin.

NOTE: Cylinders which have been ultrasonically tested are stamped "UT" and the last two digits of year inspected over the intake port.

The manufacturer's service bulletin identified and described in this directive is incorporated herein and made a part hereof pursuant to 5 U.S.C. 552(a)(1). All persons affected by this directive who have not already received this document from the manufacturer may obtain copies upon request to Pratt & Whitney Aircraft, Division of United Technologies Corp., 400 Main Street, East Hartford, Connecticut 06108. This Document may also be examined at Federal Aviation Administration, New England Region, 12 New England Executive Park, Burlington, Massachusetts 01803, and FAA Headquarters, 800 Independence Avenue SW., Washington, DC 20591.

This supersedes AD 76-20-01, Amendment 39-2728.

This amendment becomes effective May 2, 1978.

78-08-07 PRATT & WHITNEY: Amendment 39-3175. Applies to Pratt & Whitney Aircraft Wasp, Jr. and R-985 model engines.

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B. Cylinders ultrasonically inspected, inspect within 150 hours time in service after effective date of the AD, and thereafter at intervals not to exceed 150 hours time in service.

2. Remove visibly cracked cylinders and cylinders with black combustion leakage from service before further flight.

3. After the effective date of this AD, inspect all cylinder assemblies, prior to installation on an engine, by the ultrasonic test procedure in Part A of Service Bulletin 1785 or equivalent method approved by the Chief, Engineering and Manufacturing Branch, FAA, New England Region.

4. Remove from service cylinders which show cracks in excess of the limits of Part A, Section IV, of the bulletin.

NOTE: Cylinders which have been ultrasonically tested are stamped "UT" and the last two digits of year inspected over the intake port.

The manufacturer's service bulletin identified and described in this directive is incorporated herein and made a part hereof pursuant to 5 U.S.C. 552(a)(1). All persons affected by this directive who have not already received this document from the manufacturer may obtain copies upon request to Pratt & Whitney Aircraft, Division of United Technologies Corp., 400 Main Street, East Hartford, Connecticut 06108. This Document may also be examined at Federal Aviation Administration, New England Region, 12 New England Executive Park, Burlington, Massachusetts 01803, and FAA Headquarters, 800 Independence Avenue SW., Washington, DC 20591.

This supersedes AD 76-20-01, Amendment 39-2728.

This amendment becomes effective May 2, 1978.

FAA APPROVED
SR-3B-1

Pratt & Whitney Aircraft

SERVICE BULLETIN

RECIPROCATING ENGINES

No. 1785

TITLE: CYLINDER-HEAD, ULTRASONIC AND VISUAL INSPECTION OF

MODELS AFFECTED: R-985, Wasp Jr., All Models

REFERENCES: (1) R-985 Wasp Jr., Overhaul Manual, Part No. 123440, Page 112, Revised March, 1975.

(2) Service Bulletin 1720, Cylinder Head Repair and Rework.

(3) Federal Aviation Administration AD 76-20-01. - 78-08-07

(4) Service Bulletin 1744F, Engine Parts - Time Limitations.

PUBLICATIONS AFFECTED: (1) This bulletin accomplishes the intent of References (1), (3), and (4).

(2) R-985 Wasp Jr. Engine Overhaul Manual, Part No. 123440, Inspection Section.

(3) R-985 Wasp Jr. Engine Maintenance Manual, Part No. 118611, Periodic Inspection.

REASON FOR BULLETIN: Service experience indicates that some R-985 Wasp Jr. cylinder heads, which due to rebarreling or cylinder barrel chromium plating, have operated for longer than normal expected usage (Reference (4) or later), can develop a circumferential root crack in the inner first or second blind threads which contact the end of cylinder barrel. This crack can propagate in fatigue around cylinder head and radially outward until a major portion of head fails in tension and is liberated. It is estimated that 1 to 2 percent of high time cylinder heads contain a crack and that, through use of this special inspection procedure, they may be identified and removed from service before failure can result. The critical area, or crack origin, is almost always primarily located approximately 30 degrees from the rear spark plug toward the exhaust or left side of cylinder assembly. Inspections should be more concentrated in this area. It is the intent of this bulletin to:

(1) Provide instructions for ultrasonic inspection of inner cylinder head threads, at each overhaul.

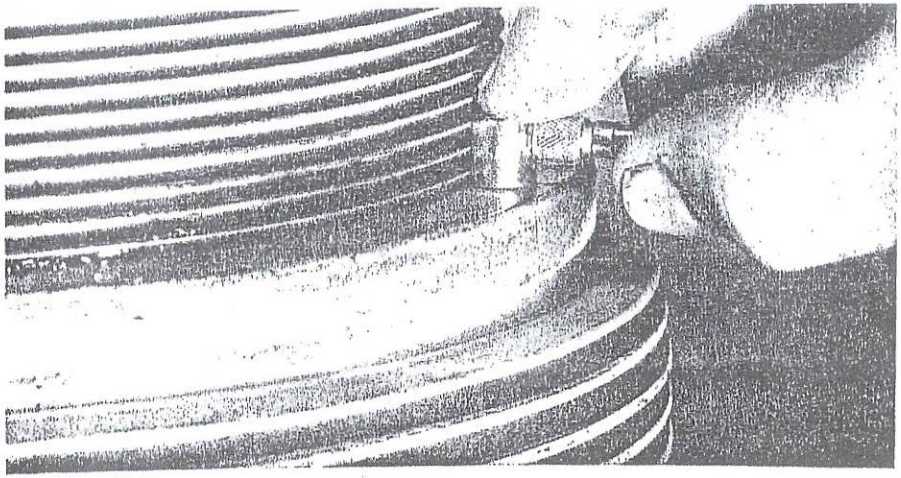
(2) Provide instruction for visual inspection, at each periodic maintenance interval.

Distribution Code
2651

PRATT & WHITNEY AIRCRAFT Division of UNITED TECHNOLOGIES

November 1, 1977

Printed in United States of America



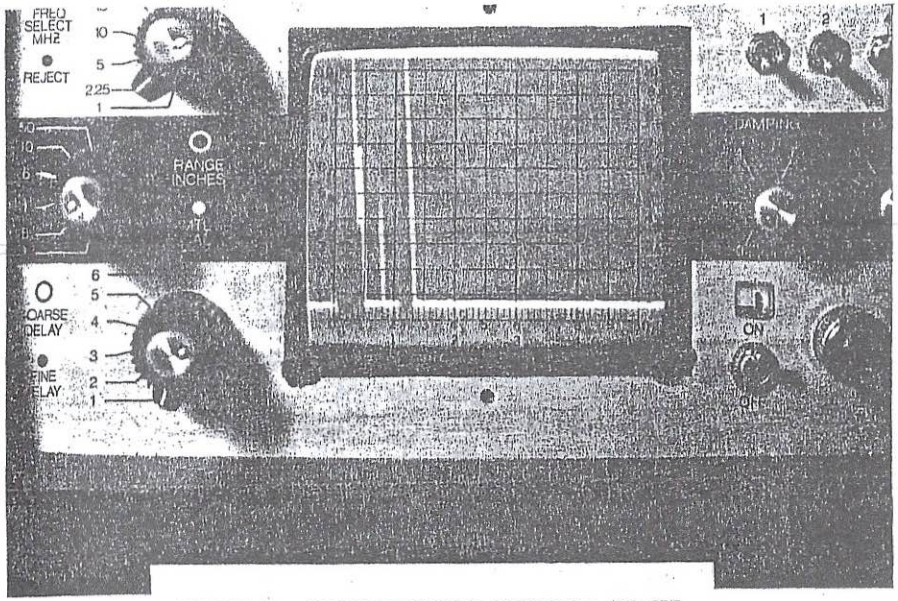


FIGURE 4: PROPER TRANSDUCER PLACEMENT; AND CRT PRESENTATION INDICATING PROPER COUPLING.

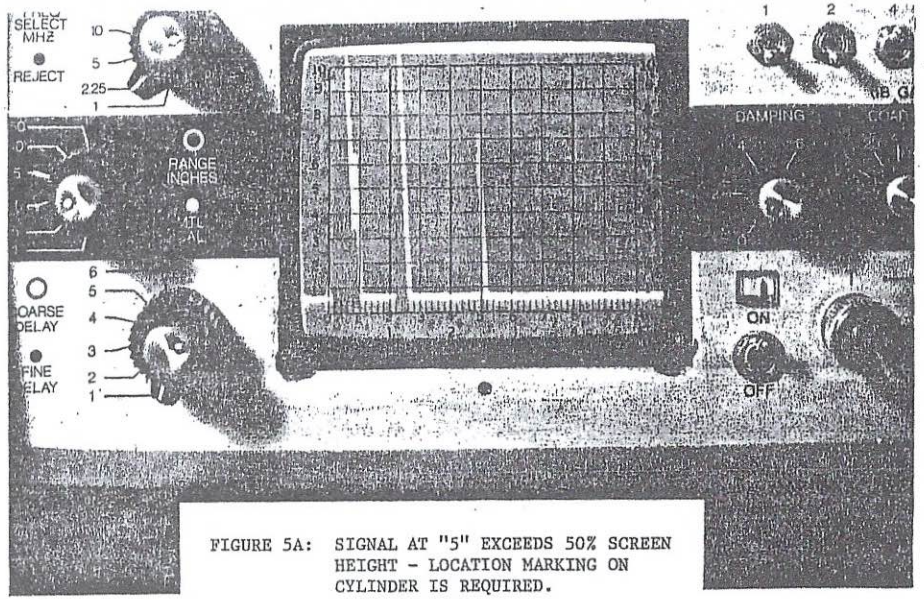


FIGURE 5A: SIGNAL AT "5" EXCEEDS 50% SCREEN HEIGHT - LOCATION MARKING ON CYLINDER IS REQUIRED.

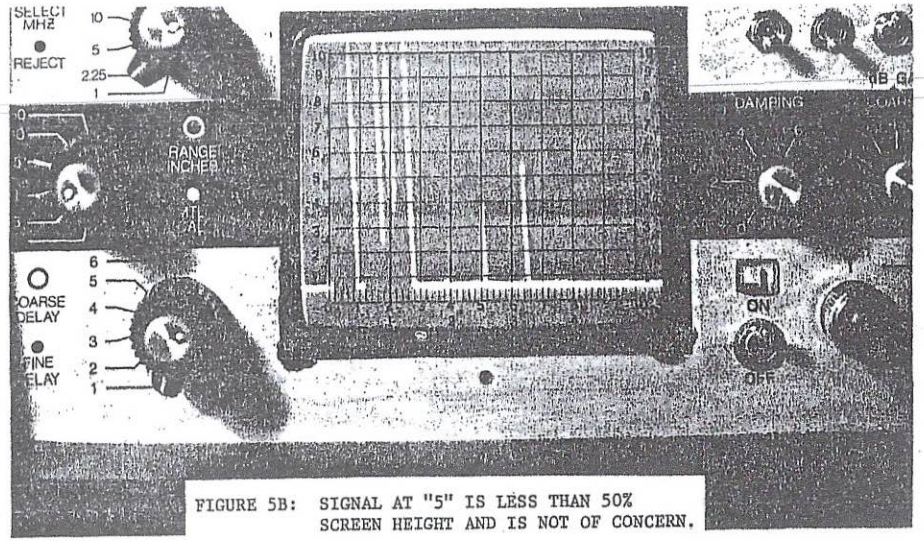


FIGURE 5B: SIGNAL AT "5" IS LESS THAN 50% SCREEN HEIGHT AND IS NOT OF CONCERN.

PERIODIC INSPECTION

Service inspection and associated maintenance include periodic inspection, cleaning, lubricating, adjusting, and all maintenance work associated with the routine inspection of the engine.

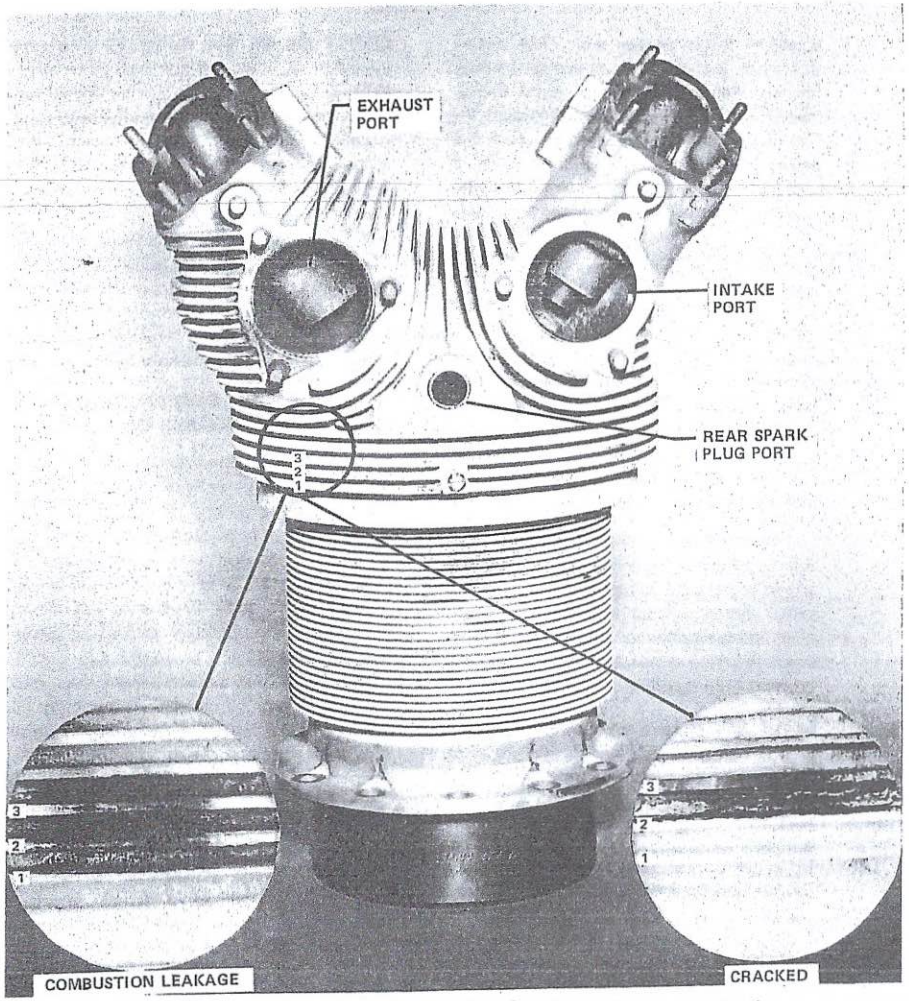
When an engine is new or has just been overhauled, it should be given a thorough check no later than 30 hours after it has been installed in the aircraft. In the following periodic inspection schedule, it is suggested that "A" represents a 50 hour inspection period, "B," 100 hour, "C," 200 hour, and "D," the midpoint period between overhauls. Experience and the type and conditions of operation should establish an actual hourly inspection period breakdown similar to that given above, for each operator. Any periodic inspection should be performed each time the interval established for that inspection has elapsed. The term "Inspect" denotes visual inspection unless otherwise noted.

PERIODIC INSPECTION

Nature of Inspection	Preflight	A	B	C	D	Remarks
GENERAL						
Inspect engine and accessory section for failures, and fuel or oil leaks.	✓					On some installations it may be desirable to remove sections of cowling.
Inspect engine cowling for security of fasteners.	✓					
Inspect propeller governor for oil leaks.		✓				Evidence of oil leakage at the governor mounting pad may indicate warpage of the governor base, or governor mounting pad stud failure. If any stud is found to be broken, replace all four studs. It is essential that the governor mounting pad nuts be drawn down evenly and tightened to the recommended torque.
Inspect the propeller shaft thrust bearing cover for oil leakage.		✓				Leakage at the thrust bearing cover necessitates further investigation to determine source of leakage (Improper pinch fit of thrust cover to case, cracked oil slinger, cracked crankshaft). Check thrust bearing nut for tightness.
Remove, clean, and inspect engine and accessory cowling.		✓				
Inspect for loose nuts and broken lockwire.		✓				Frequently indicated by signs of oil or fuel leakage.
Inspect drain plugs and covers for proper lockwiring.		✓				

Nature of Inspection	Preflight	A	B	C	D	Remarks
Inspect the generator for security and condition.			✓			Inspect condition of generator brushes and commutator.
FUEL AND INDUCTION SYSTEM						
Drain fuel screens and tank drains.	✓					Examine for presence of metal particles, water, and/or foreign matter. The presence of metal particles demands investigation of source.
Remove, inspect, and clean all main fuel screens.		✓				Examine for presence of metal particles, water, and/or foreign matter. The presence of metal particles demands investigation of source.
Remove and inspect the carburetor fuel screen.		✓				Examine screen for damage and presence of foreign matter. Clean, install, and lockwire as required.
Inspect air intake ducts for security, condition, and for obstructions.		✓				
Inspect the entire fuel system from the tank to the carburetor for leaks, under pressure.		✓				Fuel booster pump on.
Inspect the priming system for evidence of leakage, security, and condition.		✓				
Inspect all fuel line supports and clamps for security and condition.		✓				Inspect for bends, cracks, leaks, and signs of abrasion or interference with other parts.

Nature of Inspection	Preflight	A	B	C	D	Remarks
Inspect the carburetor for leaks at the parting surfaces, and hold-down nuts for tightness.		✓				
Inspect intake pipes for leaks, security, and condition.		✓				Refer to Intake Pipe Inspection, Repair and Replacement chapter.
Inspect the fuel pump for signs of leakage, security, and condition.		✓				



Visually inspect area between Fins No. 2 and 3 in the 90° quadrant between rear spark plug and exhaust manifold. Using a strong light, and extra care at point 30° from spark plug check for cracks and discoloration caused by leakage of exhaust gases. Replace cylinder assembly if cracks or discoloration are detected.

(7-1) Checking for Cracks

to assure delivery of enough electric energy to overcome the resistance at the sparkplug gap. All other conditions being ideal, an engine will perform only as satisfactorily as do the sparkplugs which are in it. The proper handling and installation of sparkplugs has proven to be one of the most important factors contributing to smooth engine performance both on the ground and in flight.

Experience has shown that proper recognition and identification of sparkplug discrepancies are of the utmost importance, since some apparently faulty sparkplugs require cylinder assembly replacement while others require substitution by a satisfactory sparkplug.

As a result of inaccurate descriptive terminology and misinterpretation, considerable confusion at both overhaul and maintenance activities has resulted in removal from service of numerous satisfactory sparkplugs. Also, in some cases, cylinder assemblies which have suffered distress from overheating and/or detonation have been mistakenly continued in service, leading to more serious failure.

It is the purpose of this section to define several basic conditions which may be found and to make appropriate recommendations for the action to be taken for each. It is not intended to discuss all possible discrepancies which may be encountered such as cracked nose ceramic, shielding barrel insulation failures, etc., as they do not impose a recognition problem and the action to be taken is clear.

SILVER RUN-OUT OF FINE WIRE ELECTRODE-TYPE SPARKPLUGS — When a fine wire electrode type sparkplug is subjected to pre-ignition and detonation, the excessive combustion temperature may cause the silver spindle of the center electrode to flow toward the firing end of the electrode. Small globules of silver are usually formed at or near the junction of the nose ceramic and the center electrode. Silver run-out is attended by other combustion chamber distress and, therefore, it is recommended that the affected cylinders be replaced.

COPPER RUN-OUT OF MASSIVE ELECTRODE-TYPE SPARKPLUGS — This difficulty is usually the result of pre-ignition and detonation where by abnormally high combustion chamber temperatures causes the copper core of the center electrode assembly to melt and flow. In most cases the copper will bridge the electrode gap, rendering the plug inoperative.

Visual inspection of the plug will disclose copper loss and concavity of the center electrode if the plug is so designed that the copper core is normally exposed. In sparkplugs which incorporate a nickel-steel capped center electrode, this type of failure is characterized by a minute perforation of the cap and the presence of copper outside of the steel cap.

When the foregoing is encountered, other attendant combustion chamber difficulties have been regularly noted. Hence, replacement of the affected cylinder assemblies is recommended.

CENTER ELECTRODE CORE EROSION — Sparkplugs in which the copper core of the center electrode is exposed to combustion will exhibit erosion of the soft copper. The concavity seldom progresses to a depth which seriously affects the sparkplug rating. Erosion to a depth of 3/32 inch is acceptable, provided that the sparkplug is satisfactory in other respects. Should the erosion exceed the foregoing limit, replace the sparkplug.

INTERGRANULAR CORROSION — In the initial stages, intergranular corrosion of the center electrode nickel alloy sheath is detectable by linear cracks of the sheath and diametric expansion of the center electrode. As the condition progresses, the sheath may crumble, leaving some of the copper core

protruding beyond the sheath. The deterioration will be more pronounced in cylinders which operate at higher temperatures. This is considered to be a sparkplug fault and substitution of a satisfactory plug is required.

CENTER ELECTRODE TIP SCALE — The formation of scale on the end of the center electrode assembly has been confused at times, with copper run-out. The carbon-lead scale appears as a bulbous formation attached to the end of the center electrode, seldom protruding beyond its normal diameter.

In the usual quantities, such hemispherical scale is of no consequence to normal sparkplug operation. Usual abrasive cleaning of the plug will detach the formation. As a precaution, such plugs may be cleaned prior to reinstallation, or they may be replaced. No other corrective or precautionary measures need be undertaken.