	AEROVIAS DEL CONTINENTE AMERICANO S AEROVIAS DEL CONTINENTE AMERICANO S 8901005776 AVENIDA CALLE 26 59-15 BOGOTA COLOMBIA CDO-001	W/O 101851564 Original	Station BOG	Registration HK-4999 AT7 ATR72 -212A
Type S SCHED	Origin EOD Doc: ENGINEERING ORDER DETAIL	ATA 72 ENGINE GENERAL	Position ENGLH LEFT ENGINE	Zone N/A	Barcode WO101851564R2

Partnumber	Description	Serialnumber
PW127N	ENGINE ATR72	PCE-ED1034

Due Date	Due at TAH	Due at TAC
N/A	10401	N/A

Type	Reference	Description
DO	EOD-AT7-72-0005-R00/EOD(RV.00)	

Description Step 1 — CRISTIAN CAMILO CAMACHO TELLEZ (44684CC), 11.Nov.2019

MANDATORY: PERFORM EOD- EOD-AT7-72-0005-R00 COMPONENT (ENGINEERING ORDER DETAIL) REV. 00
PARTNO : PW127N / SERIALNO : PCE-ED1034
ENGINE ATR72
POS: ENGLH

POWERPLANT - HPT, COMBUSTION CHAMBER AND SMALL EXIT DUCT BSI

Action Step 1-1

IN ACCORDANCE WITH JIC 74-21-62 RAI 70000-007 REV.24, REV DATE: 01-NOV-2019 THE IGNITER PLUGS WERE REMOVED.

IN ACCORDANCE WITH JIC 74-21-62 RAI 70000-007 REV 24, REV DATE: 01-NOV-2019 THE IGNITER PLUGS WERE INSTALLED

IN ACCORDANCE WITH EOD- A77-0005-R00 REV.00 THE POWERPLANT - HPT, COMBUSTION CHAMBER AND SMALL EXIT DUCT BSI, WAS ACCOMPLISHED

DD MMM YYYY	MECHANIC	SUPERVISOR	INSPECTOR
03-APR-2020	J. ARBOLEDA TEA 6992	N/A	V. Agamista AIT-CDO-118-0003

Component Changes

PN Off	SN Off	Label	Position	PN On	SN On	Description	Certificate

	ENGINEERING ORDER	EO No EOD-AT7-72-0005R00	Page 1 / 9

Subject: ENGINE – HP TURBINE, COMBUSTION CHAMBER AND SMALL EXIT DUCT
Issued By: MA_PPE (POWER PLANT MANAGEMENT)
Original Date: 20-Jan-2017
Rev No: 00
Rev Date: 20-Jan-2017

Compliance:	MANDATORY
Reason for	N/A
Repetitive:	YES, EVERY 1000FH TO PW127N & 1500 TO PW127M
Affected Manuals:	N/A

Effectivity:

A/C Type	Description	Range	Serialno From	Serialno To
PW127N	PW127 ENGINE FOR ATR72	ALL SERIAL NUMBERS	ALL	ALL
PW127M	PW127 ENGINE FOR ATR72	ALL SERIAL NUMBERS	ALL	ALL

Planning Data:

Estimated Mhr	4.0 Hours
Special Req.	
Planning Rec.	ACCOMPLISH EVERY 1000FH PW127N or 1500FH PW127M

Modification plan	☐ On attrition	☐ Campaign	Test Flight	☐ Yes	☒ No	
Controlled comp.	☐ Yes	☒ No	Power run	☐ Yes	☒ No	
RII	☐ Yes	☒ No	Idle run	☐ Yes	☒ No	
Trial inst.	☐ Yes	☒ No	Defueling req	☐ Yes	☒ No	
			Ext. Hydr.	☐ Yes	☒ No	

MAT Info

Parts Required	☒ Yes	☐ No		
Interch. Affect.	☐ Yes	☒ No		
W&B affected	☐ Yes	☒ No	Weight(in KG):0.0 Moment:0.0	El. Load af. ☐ Yes ☒ No

Improvement of	
Distribution	
Type of	NOT APPLICABLE
Type of Change	NOT APPLICABLE
ATA-Chapter	72 (ENGINE)

Approval

Prepared By	Checked by	Quality Division (If Applicable)
Andrés Orjuela	Mónica Medina S.	N/A
JOSE ANDRES ORJUELA	MONICA MEDINA	
Date: 20-Jan-2017	Date: 20-Jan-2017	Date:

FORM: F-ENG-013A

ENGINEERING ORDER

EO No EOD-AT7-72-0005R00 | Page 1 / 9

Subject: ENGINE - HP TURBINE, COMBUSTION CHAMBER AND SMALL EXIT DUCT
Issued By: MA_PPE (POWER PLANT MANAGEMENT)
Original Date: 20-Jan-2017
Rev No: 00
Rev Date: 20-Jan-2017

Compliance:	MANDATORY
Reason for	N/A
Repetitive:	YES, EVERY 1000FH TO PW127N & 1500 TO PW127M
Affected Manuals:	N/A

Effectivity:

A/C Type	Description	Range	Serialno From	Serialno To
PW127N	PW127 ENGINE FOR ATR72	ALL SERIAL NUMBERS	ALL	ALL
PW127M	PW127 ENGINE FOR ATR72	ALL SERIAL NUMBERS	ALL	ALL

Planning Data:

Estimated Mhr	4.0 Hours
Special Req.	
Planning Rec.	ACCOMPLISH EVERY 1000FH PW127N or 1500FH PW127M

Modification plan	☐ On attrition	☐ Campaign	Test Flight	☐ Yes	☒ No	
Controlled comp.	☐ Yes	☒ No	Power run	☐ Yes	☒ No	
RII	☐ Yes	☒ No	Idle run	☐ Yes	☒ No	
Trial inst.	☐ Yes	☒ No	Defueling req	☐ Yes	☒ No	
			Ext. Hydr.	☐ Yes	☒ No	

MAT Info

Parts Required	☒ Yes	☐ No		
Interch. Affect.	☐ Yes	☒ No		
W&B affected	☐ Yes	☒ No	Weight(in KG):0.0 Moment:0.0	El. Load af. ☐ Yes ☒ No

Improvement of	
Distribution	

Type of	NOT APPLICABLE
Type of Change	NOT APPLICABLE
ATA-Chapter	72 (ENGINE)

Approval

Prepared By	Checked by	Quality Division (If Applicable)
Andrés Oruela	Mónica Medina S.	N/A
JOSE ANDRES ORUELA	MONICA MEDINA	
Date 20-Jan-2017	Date 20-Jan-2017	Date

FORM: F-ENG-013A

SUBJECT: ENGINE - HP TURBINE, COMBUSTION CHAMBER AND SMALL EXIT DUCT

TEXT: Detailed borescope inspection of the HP turbine vanes, HP turbine shroud segments, combustion chamber and small exit duct in accordance with the ATR 72-212A Annex 9 Maintenance Program requirements.

REMARKS: This EOD full fills the requirements of MPD task 720000-SDI-18000-1.

CARRY OUT TEXT: In accordance with EM 72-00-00 – Engine General – Inspection / Check – 1 – 9. Borescope Inspection. Use numeral N. Combustion Chamber Liner Assembly, HP Turbine Vane Ring Segments and HP Turbine Blades.

PARTNO	DESCRIPTION	UM	QTY.REQ./REQ.
3010880	Gasket	EA	2/100%
3016598	Keywasher	EA	1/0%
AS3209-127	Packing	EA	1/100%
AS3209-131	Packing	EA	1/100%
CH34687A	Igniter Plug	EA	1/0%
MS9489-06	Bolt	EA	1/0%
PWC34913	Holding fixture	EA	1/100%
PWC34910-804	Guide tube	EA	1/100%
PWC34910-800	Guide tube	EA	1/100%
BORESCOPE	Borescope	EA	1/100%

SIGN-OFF TREE

DOCUMENT-NUMBER	DOC-TYPE	REVISION	COMPLIANCE	ISSUED BY
EOD-AT7-72-0005	EOD	00	MANDATORY	POWER PLANT MANAGEMENT

REFERENCES

DOCUMENT-NUMBER	DOC-TYPE	REVISION	ISSUED BY	STATUS
TC 720000-SDI-180000-1	MP - TC	-	AVIANCA	ACTIVE
JIC 720000-PRO-10000-001	JIC	-	ATR	ACTIVE
EM CHAPTER 72-00-00	EM	-	PWC	ACTIVE
EM CHAPTER 72-01-20	EM	-	PWC	ACTIVE

JIC:

Tittle: HP TURBINE, COMBUSTION CHAMBER AND SMALL EXIT DUCT

Area:

ATA: 72

A/C: ALL

Special Codes:

Job Instruction Card for Document Effectivity / EOD-AT7-72-0005R00

ITEM ONE-

Panels:

Zones:

References:

Materials:

Tools:

1.GENERAL - WARNINGS AND CAUTIONS

	MECH	INSP
NOTE: Read this EOD completely and make sure that you understood all instructions of this EOD. If you find any discrepancy in this EOD or if there are any step that is not clear consult the engineer that originated this EOD **WARNING:** Follow all warning and cautions given on the EMM 72-00-00 INSPECTION/CHECK-1 and -2, EMM 72-01-20, JIC 74-21-62 RAI 10000 001 and JIC 72-00-00 PRO 10000 001 **WARNING:** Install warning notice in flight compartment indicating that work is being performed in engines **CAUTION:** Ensure foreign objects do not fall into the engine. **CAUTION:** Ensure engine temperature is below 60°C (140°f). **CAUTION:** Do not use force when inserting the guide tube. **CAUTION:** Withdraw the fiberscope tip before rotating the turbine rotor **WARNING:** Wear goggles when removing/installing lockwire. **WARNING:** Gloves must be worn to protect skin when decontaminating areas containing gaskets or packings which have decomposed due to high temperatures. Hydrofluoric acid is produced when the material decomposes. Medical treatment is required as soon as possible if the acid touches bare skin.	J. ALMEIDA 19874 5A	V. [signature] AIT-CDO-118-0003

A. GENERAL - WARNINGS AND CAUTIONS

	MECH	INSP
WARNING: Residual voltage in ignition exciter may be dangerously high. Ensure ignition system is off at least six minutes before starting removal procedure. Always disconnect coupling nuts at ignition exciter end first. Always use insulated tools to remove cable coupling nuts. Do not touch output connectors or coupling nuts with bare hands. **CAUTION:** Do not allow igniter cable braiding or ferrules to rotate when turning coupling nut. **CAUTION:** Always replace an igniter that has been dropped. Internal damage may not be evident at testing. **WARNING:** Ensure ignition system is off before starting installation. **CAUTION:** Silver goop (PWC06-023) must not come in contact with the intercompressor case or impellers. These components are made from titanium, which is liable to crack when in contact with silver goop. **WARNING:** Electrical connector contact is made of toxic material. Prolonged handling may cause skin irritation. Use gloves when handling part. **WARNING:** Do not allow any lubricant to come in contact with central conductors of connectors. Contact with conductors may result in a high-resistance path, which could generate heat and oxidation.	J. ARBOCEDA 14874JA	V. Organista AIT-CDO-118-0003

B. WORK INSTRUCTIONS

2. ENGINE PREPARATION	MECH	INSP
2.1. Prepare the engine for the borescope inspection in accordance with JIC 72-00-00 PRO 10000 001. 2.2. Remove the igniter plugs in accordance with JIC 74-21-62 RAI 10000 001. **CAUTION: ENSURE FOREIGN OBJECTS DO NOT FALL INTO THE ENGINE.** 2.3. Clamp the holding fixture P/N PWC34913 to a convenient surface. **CAUTION: ENSURE ENGINE TEMPERATURE IS BELOW 60°C (140°F).**	J. ARBOCEDA 14874JA	V. Organista AIT-CDO-118-0003

B. WORK INSTRUCTIONS

2. ENGINE PREPARATION	MECH	INSP
2.4. Insert the fiberscope into the igniter port and secure the eyepiece to the holding fixture **(Refer to Figure 1).** 2.5. Inspect the combustion chamber liner assembly for damage following criteria found in EMM 72-00-00 INSPECTION/CHECK-02, using different ports for complete coverage. **CAUTION: DO NOT USE FORCE WHEN INSERTING THE GUIDE TUBE.** 2.6. Remove fiberscope and insert guide tubes into igniter ports as follows: 2.6.1. Right (view from rear) igniter port: Insert guide tube P/N PWC34910-804 into port in an upward direction, turning it counterclockwise until fully installed. 2.6.2. Left (view from rear) igniter port: Insert guide tube P/N PWC34910-804 into port in a downward direction, turning it counterclockwise until fully installed. 2.7. Insert the fiberscope into the guide tube and inspect the HP turbine vane ring segments for damage following criteria found in EMM 72-00-00 INSPECTION/CHECK-02. Use different igniter ports to obtain complete coverage. 2.8. Remove the starter-generator drive cover as follows **(Refer to Figure 2):** 2.8.1. Unlock and remove bolts (1) and keywashers (2) 2.8.2. Remove cover (3) using lever (PWC37823). 2.8.3. Remove and discard packings (4) P/N AS3209-131 and (5) P/N AS3209-127. 2.8.4. Install a 3/8 in. (9.5 mm) square-drive socket extension. **NOTE: Borescope inspection of the HP turbine blades should be carried out using one igniter port and using the manual drive to rotate the HP rotor.** 2.9. Insert the tip of the fiberscope between the vane ring segments and inspect the HP turbine blades for damage following criteria found in EMM 72-00-00 INSPECTION/CHECK-02. **CAUTION: WITHDRAW THE FIBERSCOPE TIP BEFORE ROTATING THE TURBINE ROTOR.** 2.10. Inspect the remaining HP turbine blades following criteria found in EMM 72-00-00 INSPECTION/CHECK-02, using the socket extension to rotate the turbine rotor.	J. Arboleda 14874 JA	V. Agustin AIT-CJO-118-0003

B. WORK INSTRUCTIONS

2. ENGINE PREPARATION	MECH	INSP
2.11. Remove fiberscope, rigid guide tube and holding fixture. 2.12. If damages are found and repetitive inspections are required in accordance with EMM 72-00-00 INSPECTION/CHECK-02 please: - Fill the blank spaces below. - Report to Power Plant Engineering coordination by means of Query or Email – jose.orjuela@avianca.com. - Generate a report in the Aircraft Maintenance Logbook specifying the damage, the EMM reference and the next inspection/removal limit at the same time generate a QUERY assigned to POWER PLANT ENGINNERING GROUP. Inspect ☐ / Remove Engine ☐ in N/A FC ☐ / FH ☐ (If applicable)	J. Arboleda 14874 54	V. Orjuela AIT-CVO-118-0003
2.13. Install igniters in accordance with JIC 74-21-62 RAI 10000 001. 2.14. Remove socket extension and install the starter-generator drive cover as follows **(Refer to Figure 2).** 2.14.1. Lubricate packings (4) -P/N AS3209-131- and (5) -P/N AS3209-127- and install on cover (3). 2.14.2. Install cover, keywashers (2) -P/N 3016598- and bolts (1) -P/N MS9489-06. Torque bolts 36 to 40 lb.in. (4.07-4.52 Nm) and lock keywashers. 2.15. Return aircraft to service following instructions of JIC 72-00-00 PRO 10000 001.	J. Arboleda 14874 54	V. Orjuela AIT-CVO-118-0003

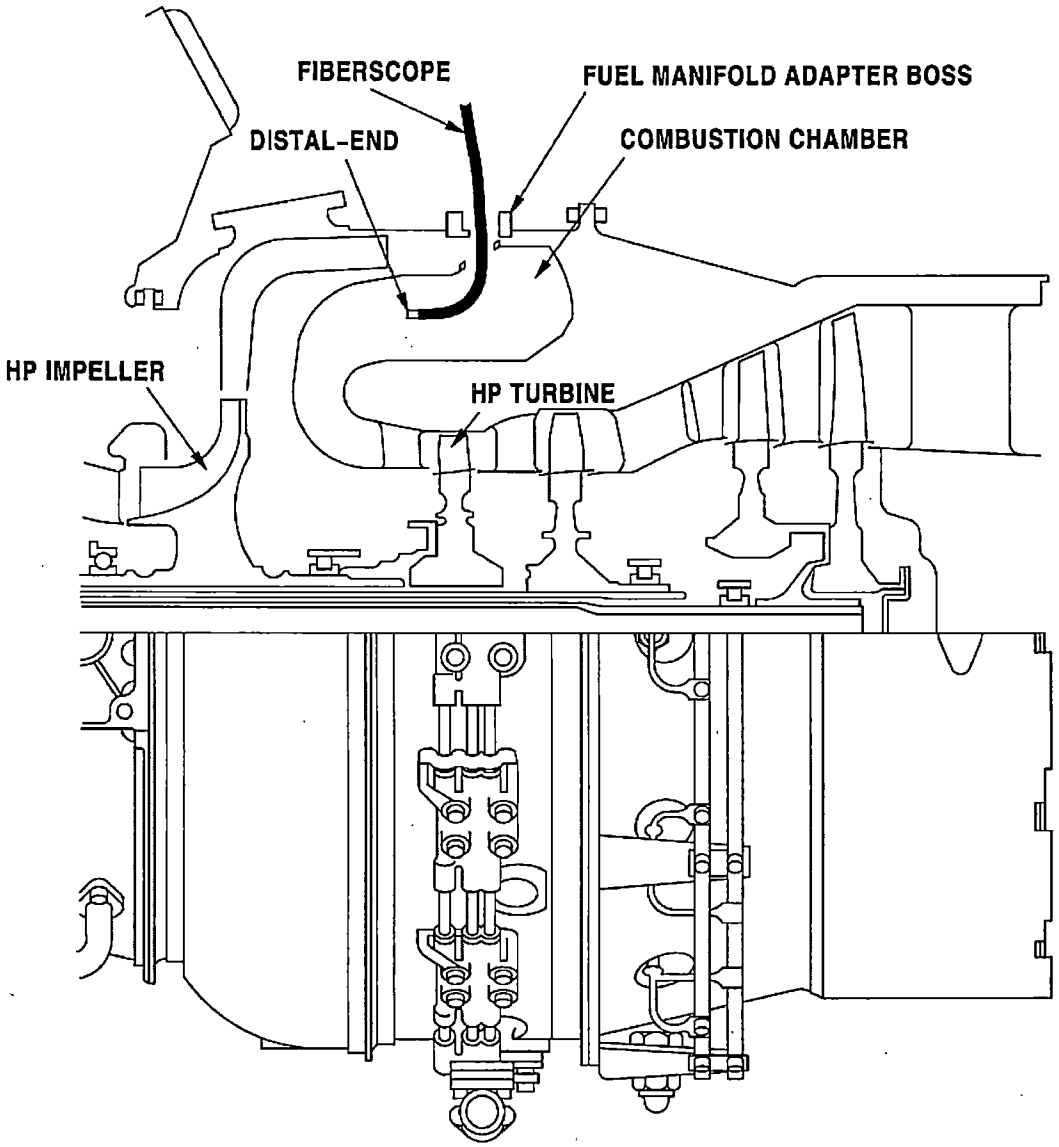


Figure No. 1: Combustion Chamber Liner Assembly – Boroscope Inspection

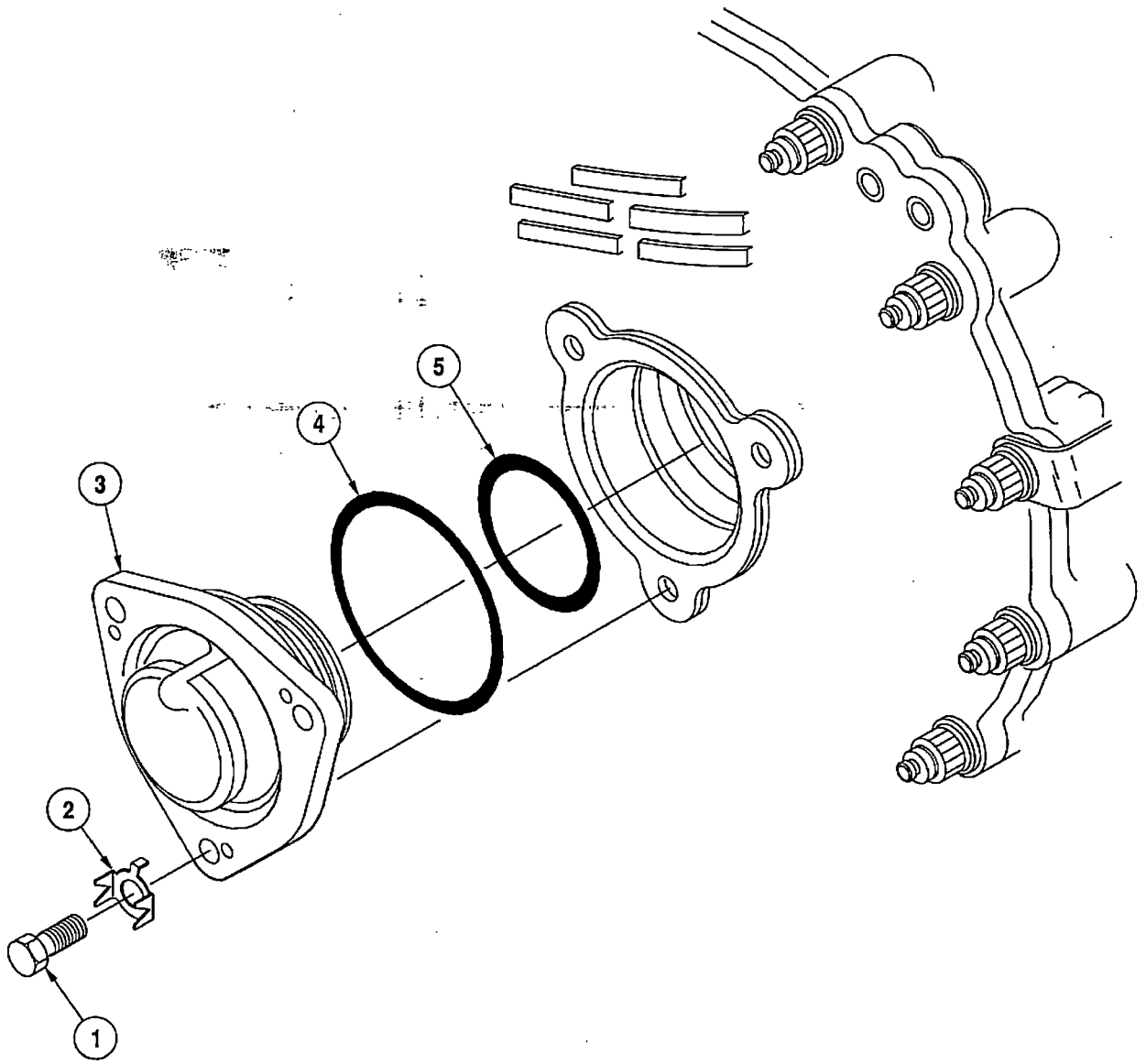


Figure No. 2: Starter Generator Drive Cover – Removal / Installation

RECORD OF ACCOMPLISHMENT

ACCOMPLISHMENT ON

☐ A/C ☒ Engine ☐ Units	MODEL : PW127N / PW127M A/C REGISTRATION: HK-4999 SERIAL NUMBER: PCE-ED1034	STATION: BOG

FOUND ON CONDITION REPORT (Use additional sheets if necessary)

A. General Data

1. Any Discrepancy (ies) found? YES:___ NO:X. If response is YES, please provide specific Work Order (s) Number (s) as applicable.

a) N/A
b) N/A
c) N/A

2. Is this EOD a **Major alteration / repair?** YES: ___ NO: _X_. If response is YES please send a copy to the Quality Control Manager immediately after work accomplishment

B. Accomplishment of this EOD fulfill the requirements of: The Task Card 720000-SDI-18000-1 incorporated into ATR72 – 212A Maintenance Program.

EOD-AT7-72-0005-R00/ EOD (Rev00).

C. Used Calibrated Tools

Description	Tool P/N	Tool S/N	Calibration Date	Calibration Due Date

D. WORK RESULTS

- Was the HP Turbine, Combustion Chamber and Small Exit Duct borescope inspection completed without deviations, discrepancies or complications during the entire process? YES X, NO_____.

Satisfactory

E. REMARKS: NONE

Technician Signature:	J. ARBOLEDA	Inspector Signature (if applicable)		Completion Date
Technician Full Name:	JONATHAN ARBOLEDA	Inspector Full Name:	Victor Organista	Day Month Year
License No.:	TLA 6992	License No.:	AIT-CSO-118-0003	03/APR/2020

	QUALITY DIVISION	NDT FACILITY	1. NDT REPORT# JT0117-20

2. AUTHORITY: ☑ **UAEAC (CDF-003)** ☐ **FAA (CRS MU1Y335C)** ☐ **FAA (CRS MU1Z335K)** ☐ **OTHER:**

3. CUSTOMER:	**AVIANCA**	**4. WORK ORDER:**	**101851564**	**5. BASE:**	BOG

6. NDT METHOD: VISUAL INSPECTION (IVR)

7. REFERENCE DOCUMENT:	AVIANCA EOD-AT7-72-0005 REV 00 AND PRATT AND WHITNEY MM ENGINE REV 61, INSPECTION / CHECK-2, 72-00-00

8. A/C REG:	HK-4999	**9. MODEL:**	ATR72-212A	**10. S/N:**	1126

11. COMPONENT DESCRIPTION:	LH-ENGINE

12. COMPONENT P/N:	PW127N	**13. S/N:**	PCE-ED1034	**14. QTY:**	-1-

PRELIMINARY INSPECTION: Before beginning the inspection verify that not exist discrepancies according to QCM/MPI, as apply.

IN PROCESS INSPECTION: (FAA-AC 145-9A CHAPTER 5.10. Item as revised)

15. INSPECTION PROCESS: Perform the equipment and material quality control according to reference document supply by the OEM and/or AVIANCA NDTM. Perform the inspection according to reference document supply by the OEM and/or AVIANCA NDTM.

EQUIPMENT	MANUFACTURER/MODEL:	OLYMPUS	
	P/N: IV9000N-BX	S/N: Y801370	
	Boroscope Block S/N: 20573	Boroscope Block Calibration Due Date: 04 NOV 2020	

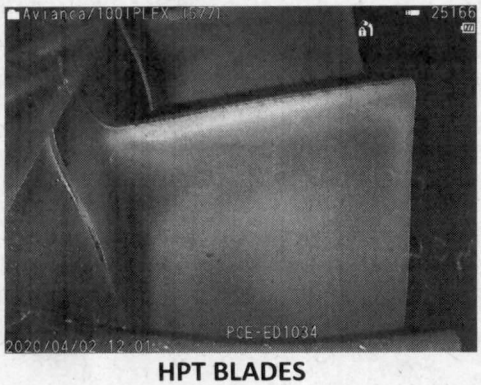
Visible Light Lamp Model:	N/A	Intensity:	N/A Fc

16. REMARKS:

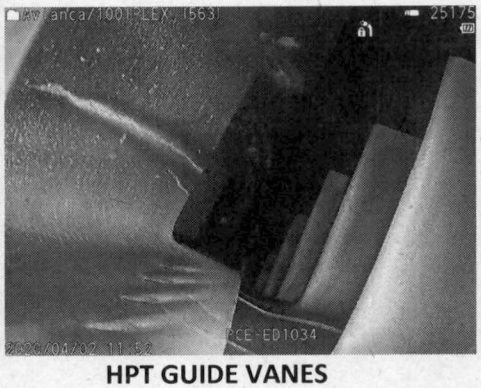
BOROSCOPE INSPECTION WAS ACCOMPLISHED TO HPT (BLADES, SHROUDS AND VANES RING SEGMENTS), COMBUSTION CHAMBER AND SMALL EXIT DUCT.

- HPT (Blades and Shrouds): No damages were found.
- HPT Guide Vanes: Cracks at Trailing edge, Acceptable in accordance MM.
- Combustion Chamber: Missing coating loss. Acceptable in accordance MM
- Small Exit Duct. No Damages were found.

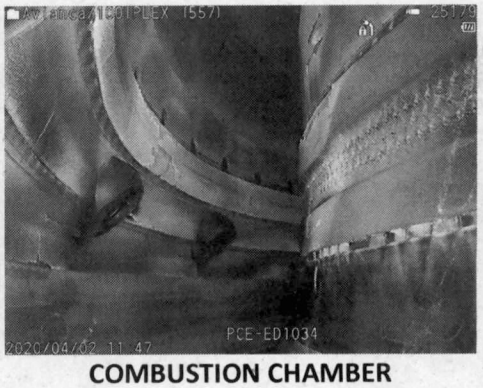
CONCLUSION: NO ACTION REQUIRED



HPT BLADES



HPT GUIDE VANES



COMBUSTION CHAMBER

CERTIFICATION STATEMENT: Avianca Certifies that the NDT performed in the component described in Block 11, 12 and 13 was accomplished according to NDT Reference Documents specified in Block 7, Aviation Regulation and NDT Written Practice.

FINAL INSPECTION: Before close the inspection verify that not exist discrepancies according to QCM/MPI, as apply.

17. NDT INSP:	JOHANNA TORRES	**18. SIGN / STAM:**	J. TORRES NDT-AVA 32	**19. DATE:** 02 APR 2020	**20. M. HOUR**	- 2.0H -