TMC
ENGINE CENTER, INC.
WWW.TMC.AERO

ENGINE MINIPACK

CFM56-3C1 - ESN 857701 - 2,762 CR
CONDITION: SERVICEABLE - CONTINUED TIME
RECORDS: FULL BTB TRACE & NIS
INCLUDES: STAND & QEC
LOCATION: MIAMI
PRICE: UPON REQUEST
AVAILABLE: NOW - READY TO SHIP
TESTED: 26 ° EGT AT 20.0K THRUST (CAT A)

TMC Engine Center, Inc
8545 NW 79th Avenue
Medley, FL 33166 USA

Phone: +1-786-337-6650
Fax: +1-786-337-6610

FAA Part-145 Repair Station Number: Z5LR447Y
EASA Part-145 Approval Number: 145.5678

sales@tmcenginecenter.com
www.TMC.aero

1. Approving Civil Aviation Authority/Country:	2.	3. Form Tracking Number:
FAA/United States	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130-3 AIRWORTHINESS APPROVAL TAG**	1219CFM1040-41832

4. Organization Name and Address:	5. Work Order/Contract/Invoice Number:
TMC Engine Center, Inc. **8545 NW 79th AVE** **MAMI, FL 33166** **FAA REPAIR STATION** **No. Z5LR447Y**	CFM1040

6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status/Work:
1	ENGINE	CFM56-3C1	1	857701	REPAIRED

12. Remarks: REPAIRED IAW FAA APPROVED DATA: CFM56-3 ESM CFM-TP.SM. , REV. 77, DTD. 12/15/2019

THE ENGINE WAS DISASSEMBLED TO THE EXTENT NECESSARY TO ACCOMPLISH THE REQUIRED REPAIRS, CLEANED, INSPECTED, REPAIRED AS REQUIRED BY THE CUSTOMER WORKSCOPE, ASSEMBLED, TESTED, AND ACCEPTED IAW CFM56-3 ESM CFMI-TPSM REV 77, DTD. 12/15/2019. ENGINE WAS PRESERVED POST TEST TO 365 DAYS. THE FOLLOWING AD NOTES WERE COMPLIED WITH THIS VISIT: 2002-13-03, 2013-26-01 & 2017-14-08. SEE AD NOTE LISTING, FORM TMC-ENG-07CFM56. ALL WORK PERFORMED IS RECORDED AT THIS FACILITY UNDER TMC WORK ORDER NUMBER: CFM1040. DETAILED INFORMATION OF THE WORK ACCOMPLISHED IS RECORDED IN FAA FORM 337 AND IS IN COMPLIANCE WITH FAR 43.9. THE WORK SPECIFIED IN BLOCK 11 AND 12 WAS CARRIED OUT I/A/W FAR 145.
SEE TMC ENGINE CARRY OVER WORK SHEET PRIOR TO RELEASING ENGINE BACK TO SERVICE.

TRACED TO: ESN - 857701 - CFM56-3C1 **TSN: 41,811.00** **CSN: 22,238**

13a. Certifies the items identified above were manufactured in conformity to:	14a. ☑ 14 CFR 43.9 Return to Service ☐ Other regulation specified in Block 12
☐ Approved design data and are in a 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. Authorized Signature:	13c. Approval Authorization No.:	14b. Authorized Signature:	14c. Approval/Certificate No.: Z5LR447Y
13d. Name (Type or Printed):	13e. Date (dd/mmm/yyyy):	14d. Name (Typed or Printed): JULIO LAU	14e. Date (dd/mmm/yyyy): 20 / DEC / 2019

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 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.

U.S. 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	Serial No.	
	Make	Model	Series
2. Owner	Name (*As shown on registration certificate*)	Address (*As shown on registration Certificate*) Address _____ City _____ State _____ Zip _____ Country _____	

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☐	AIRFRAME	_____	(*As described in Item 1 above*)	_____
☒	☐	POWERPLANT	**CFM INTERNATIONAL**	**CFM56-3C1**	**857701**
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type Manufacturer		

6. Conformity Statement

A. Agency's Name and Address

Name **TMC Engine Center, Inc**
Address **8545 NW 79th Avenue**
City **Medley** State **Florida**
Zip **33166** Country **USA**

B. Kind of Agency

	U.S. Certificated Mechanic	☐ Manufacturer
	Foreign Certificated Mechanic	C. Certificate No.
X	Certified Repair Station	**Z5LR447Y**
	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 ☐

Signature/Date of Authorized Individual

JULIO E. LAU **December 20th, 2019**

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	X	Repair Station		Inspection Authorization		Other (*Specify*)

Certificate or Designation No. **Z5LR447Y**

Signature/Date of Authorized Individual

JULIO E. LAU **December 20th, 2019**

FAA Form 337 (10-06)

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft records. 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.)

Nationality and Registration Mark	Date

Work Order: **CFM1040** , Model: **CFM56-3C1**
Engine Serial Number**: 857701**
Engine Total Time: **41,811;** Engine Total Cycles: **22,238**

CUSTOMER: **SKY TECHNICS**

1. CFM International CFM56-3C1 engine was disassembled and repaired to replace LLP & perform Main Line Bearing Inspection.
2. Performed incoming inspection and inventory.

THE FOLLOWING WAS ACCOMPLISHED:

3. **FAN & BOOSTER MODULE** (ATA 72-21):

   A. It was cleaned & visually inspected.
   B. Performed Fan blade, disk, and hardware re-lubrication prior to installation per SUBTASK 72-00-21-420-058.
   C. Reassembled and balanced the Fan & Booster prior to installation.

4. **NO. 1 & NO. 2 BEARING SUPPORT MODULE** (ATA 72-22):

   A. Performed a Full Workscope and routed the No. 1 and No. 2 Bearings for Cleaning and Inspection. Installed the No. 1 and No. 2 Bearings in Serviceable condition.
   B. Compliance with AD 2002-13-03 on the Fan Shaft.

5. **INLET GEARBOX** (ATA 72-61):

   A. Performed a Full Workscope and installed the No. 3 Bearing in Serviceable condition.

6. **FAN FRAME** (ATA 72-23):

   A. Disassembled as required, cleaned, inspected, repaired & re-assembled.
   B. Replaced 11ea. Skin fillets with NEW units.

7. **HPC ROTOR SECTION** (ATA 72-31, -32, -33):

   A. Visually inspected as an assembly (accessible areas) in-situ.
   B. Complied with AD 2017-08-14(VSV Pull Check).

8. **COMBUSTION CASE ASSY & COMBUSTION CHAMBER** (ATA 72-41, -42):

   A. Disassembled as required, cleaned, inspected, repaired & re-assembled.
   B. Replaced the Combustion Chamber Module with a Serviceable condition assembly.
   C. Installed 20 ea. Bench Checked Fuel Nozzles.

9. **HPT NOZZLE** (ATA 72-51):

   A. Disassembled as required, cleaned, inspected, repaired & re-assembled.
   B. Replaced 8ea. HPT NGV's with Serviceable condition units.

☒ Additional Sheets are Attached

Work Order: **CFM1040** , Model: **CFM56-3C1**
Engine Serial Number**: 857701**

10. **HPT ROTOR** (ATA 72-52):
    A. Disassembled as required, cleaned, inspected, repaired, re-assembled & balanced.
    B. Replaced the HPT Rear Shaft with a Serviceable LLP.
    C. Replaced 2 ea. HPT Blades with Serviceable condition units.
    D. Match Grind of the Blade tips performed.

11. **MOD 12 / LPT STG. 1 NOZZLES** (ATA 72-53):

    A. Disassembled as required, cleaned, inspected, repaired & re-assembled.
    B. Replaced 46 ea. HPT Shrouds with Overhauled condition units and installed a set of Continued Time Serviceable LPT Stage 1 Vanes.
    B. Performed match grind to the HPT shroud for optimal J05 clearance.

12. **LPT MAJOR MODULE** (ATA 72-54, 72-55, 72-56):
    A. Disassembled as required, cleaned, inspected, repaired, re-assembled & balanced.
    B. Installed the No. 4, & No. 5 bearings in Serviceable condition.

13. **AGB MODULE** (ATA 72-62):

    A. Removed, cleaned, inspected & re-installed the Hand Cranking Pad Cover to comply with AD 2013-26-01.

14. THE FOLLOWING AIRWORTHINESS / SERVICE BULLETINS WERE ACCOMPLISHED AT THIS SHOP VISIT:

    A. Complied with Airworthiness Directives: **2002-13-03, 2013-26-01 and 2017-14-08.**

15. Performed "ON WING" Test 10 IAW latest Revision of the B737 AMM for acceptance.

16. Accomplished 365 Day Preservation.

The subject engine was disassembled to the extent necessary to accomplish the repair, cleaned, inspected, repaired as required by the Customer Workscope, re-assembled, tested and found airworthy in accordance with the CFM International CFM56-3 ESM CFMI-TPSM5 REV 77, DTD. 12/15/2019. Pertinent details of the above are on file at this Repair Station under W.O. No. **CFM1040.**

---------- END ----------

TMC Engine Center, Inc.
FAA CRS Z5LR447Y
8545 NW 79th Avenue
Medley, Florida 33166

LIFE LIMITED PARTS STATUS

ENGINE MODEL: CFM56-3C1 **ENGINE SERIAL NUMBER:** 857701 **CUSTOMER:** SKY TECHNICS

ENGINE TOTAL TIME: 41,811 **ENGINE TOTAL CYCLES:** 22,238 **WORK ORDER:** CFM1040

DESCRIPTION	PART NUMBER	SERIAL NUMBER	A CYCLE LIMIT	B CYCLE LIMIT	C CYCLE LIMIT	A CYCLE TOTALS	B CYCLE TOTALS	C CYCLE TOTALS	A CYCLE REMNG	B CYCLE REMNG	C CYCLE REMNG	REPLACED	REMOVED FROM ESN / WO
FAN ROTOR													
FAN DISK	335-014-511-0	J191010	30,000	24,900	20,100		22,238		3,207	**2,662**	2,149		
BOOSTER SPOOL	335-009-306-0	J196624	30,000	30,000	30,000		22,238		7,762	**7,762**	7,762		
FAN SHAFT	335-006-414-0	J191206	30,000	30,000	30,000		22,238		7,762	**7,762**	7,762		
FAN ROTOR													
FRONT SHAFT	1275M37P02	GWN08G2P	20,000	20,000	20,000		7,276		12,724	**12,724**	12,724		
STG. 1-2 SPOOL	1589M66G02	GWN08JGK	20,000	20,000	20,000		7,276		12,724	**12,724**	12,724		
STG. 3 DISK	1590M59P01	XAEF2359	20,000	20,000	20,000		7,276		12,724	**12,724**	12,724		
STG. 4-9 SPOOL	1588M89G03	GWN08GDT	20,000	20,000	15,800		7,276		12,724	**12,724**	10,052		
CDP REAR SEAL	1319M25P02	GFF5C5KN	20,000	18,000	15,000		7,276		11,916	**10,724**	8,937		
HIGH PRESS. TURBINE													
FRONT SHAFT	1385M90P04	XAE78007	20,000	17,300	17,000		7,276		11,588	**10,024**	9,850		
FRONT AIRSEAL	1282M72P05	GWN08E27	20,000	15,800	15,100		7,276		10,790	**8,524**	8,146		
DISK	1475M29P02	GWN08FM5	20,000	18,500	16,600		7,276		12,134	**11,224**	10,071		
REAR SHAFT	**9514M71P07**	**TMTKA901**	25,000	20,000	15,800	12620	2119		9,731	7,785	6,150	**YES**	ESN 721940-3B2
LOW PRESS. TURBINE													
STG. 1 DISK	301-331-125-0	J205188	25,000	25,000	18,800		22,238		2,762	**2,762**	2,077		
STG. 2 DISK	301-331-225-0	J183810	25,000	25,000	25,000		22,238		2,762	**2,762**	2,762		
STG. 3 DISK	301-331-322-0	J192238	25,000	25,000	25,000		22,238		2,762	**2,762**	2,762		
STG. 4 DISK	301-331-427-0	J205652	25,000	25,000	25,000		22,238		2,762	**2,762**	2,762		
LPT SHAFT	301-330-067-0	F017652	30,000	30,000	30,000		22,238		7,762	**7,762**	7,762		
LPT STUB SHAFT	301-330-624-0	J190121	25,000	25,000	20,000		22,238		2,762	**2,762**	2,210		
CONICAL SUPPORT	305-056-116-0	J198090	25,000	25,000	25,000		22,238		2,762	**2,762**	2,762		

Information for all disks not replaced supplied by customer. Documentation and/or trace for disks replaced is on file at TMC Engine Center, Inc. under the referrenced Work Order Number.

Remarks:

ENGINEERING **12/13/2019** DATE

FORM: TMC-ENG-10-1
ISSUE DATE: 12/19/06
REVISION DATE: R0 12/19/06

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

CFM56 AIRWORTHINESS DIRECTIVE COMPLIANCE STATUS

WORK ORDER: CFM1040 CUSTOMER: SKY TECHNICS DATE: 20/DEC/2019

ENGINE MODEL: CFM56-3C1 ENGINE S/N: 857701 TT: 41,811 TC: 22,238

Note: With regards to this document, the following definitions apply:

CW = Complied with at this shop visit.
PCW = Previously Complied With – Received with upgraded configuration
ND = Not Disassembled per Customer Specifications
NA1 = Not Applicable Due to Engine Model
NA2 = Not Applicable Due to Engine Serial Number
NA3 = Not Applicable Due to Part Numbers
NA4 = Not Applicable Due to Part Serial Numbers

A.D. NUMBER EFF. DATE	PWA SERVICE BULLETIN	DESCRIPTION	REPETITIVE INSPECTION YES	NO	COMPLIANCE, STATUS, NEXT INSPECTION, PART NUMBERS / SERIAL NUMBERS INST.
86-08-05R1 39-5339 F1986-066R1	72-205 R3	To prevent engine shutdown from radial drive shaft disengagement. Applies to engine models: 3,and 3B.		X	NA1
89-13-51		Superseded by AD 96-25-11.			Superseded
89-23-06 R1 39-6370 F1989-181R3	72-530	Inspect the forward sump magnetic chip detector. Removal of certain No.3 bearings from service. Applies to engine models: 2, 3, 3B, 3C, 5.		X	NA3 to PN 1461M14P04 S/N MDALG871 installed.
90-20-13 39-6679 F1990-031R2	72-494	Modify the Fan Module Assembly by installing Fan blade dampers P/N 335-105-305-0, axial stops P/N 335-105- 201-0 and bolts P/N J815P056A. Applies to engine models: 3B2, 3C1		X	PCW and verified TSV.
91-02-10 39-6839 F1991-030	72-450 72-162	Install fan splitter fairing, fan stage 1 vane assy and new centering shroud. Applies to engine models: 3, 3B, 3C.		X	PCW and verified TSV.
96-18-16 39-9742 F1997-010R1	72-728 72-338 72-476 72-695	To prevent low cycle fatigue of the LPTR stub shaft and conical support. Applies to engine models: 2, 2A, 2B, 3, 3B, 3C, 5.	X		NA3 per Ukraine International Airlines AD Status dated April 20th, 2011. ND TSV. Inspect at next piece-part exposure.

W/O CFM1040 - ESN 857701

REVIEWED BY:_____ DATE: December 20th, 2019

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

CFM56 AIRWORTHINESS DIRECTIVE COMPLIANCE STATUS

A.D. NUMBER EFF. DATE	PWA SERVICE BULLETIN	DESCRIPTION	REPETITIVE INSPECTION YES	NO	COMPLIANCE, STATUS, NEXT INSPECTION, PART NUMBERS / SERIAL NUMBERS INST.
96-25-11 39-9854 F1989-181R3 01/29/97	72-543 R4 72-737 72-71 72-1203 R10	To prevent fan blade failure that may result in complete loss of power. Applies to engine models: 3B2, 3C1.		X	NA3. TERMINATED to blade P/N's installed as per Ukraine International Airlines LLP Status dated April 20th, 2011.
97-08-01 39-9989 F1994-195		To prevent a low cycle fatigue failure of the fan disk, which could result in an engine failure. Applies to engine models: 3, 3B, 3C		X	PCW as per Ukraine International Airlines LLP Status dated April 20th, 2011.
T97-25-51 12/4/97		Superseded by AD 98-10-11.			Superseded
98-07-02 39-10402 F1998-080R1	72-823 72-825 72-1355R1 72-856	To prevent rubs between the outer cone of the #3 bearing rear stationary air/oil seal and the HPCR Stg 1-2 Spool. Applies to engine models: 2, 3, 3B, 3C.		X	NA3 per Ukraine International Airlines AD Status dated April 20th, 2011. ND TSV.
98-10-11 39-10585 F1997-327	72-863R1 72-865 72-867 72-873R1 72-523R1 72-211R1 72-350R1	To prevent inflight engine shutdowns due to an AGB starter gear shaft, TGB input bevel gear, TGB output bevel gear, AGB gear shaft duster spur assy or AGB intermediate gear assy failure. Applies to engine models: 3, 3B, 3C, 5, 5B, 5C.		X	NA2 to ESN 857701.
98-12-32 39-10523 F1998-096	72-817R1 72-419R2 72-561R1 72-843R1	To prevent the potential for an uncontained failure of the HPTR disk. Applies to engine models: 2, 2A, 2B, 3, 3B, 3C.		X	NA4 to HPT Disk P/N 1475M29P02 S/N GWN08FM5 installed.
T98-18-51 08/28/98		Superseded by AD 98-21-23.			Superseded
98-19-10 39-10752 F1998-198R1	72-877R1	To prevent an AGB starter gear shaft failure, which can result in an inflight Eng shutdown, and on a/c with two affected Eng installed, possible dual inflt shutdown. Applies to engine models: 3, 3B, 3C.		X	NA2 to ESN 857701
99-08-16		Superseded by AD 2000-12-01.			Superseded

W/O CFM1040 - ESN 857701

REVIEWED BY:_____ DATE: December 20th, 2019

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

CFM56 AIRWORTHINESS DIRECTIVE COMPLIANCE STATUS

A.D. NUMBER EFF. DATE	PWA SERVICE BULLETIN	DESCRIPTION	REPETITIVE INSPECTION YES	NO	COMPLIANCE, STATUS, NEXT INSPECTION PART NUMBERS / SERIAL NUMBERS INST.
2000-05-22 39-11632 F2000-018	72-922	Perform an ECI for cracks in the bolt holes of the HPTR front rotating air seals, P/N 1282M72P03, and replace, if necessary, with serviceable parts. Applies to engine models: 2, 2A, 2B, 3, 3B, 3C, 5, 5A, 5B, 5C		X	NA3 to P/N 1282M72P05 S/N GWN08E27 installed.
2000-12-01		Superseded by AD 2002-13-03.			Superseded
2000-15-01 39-11830 F1999-245R1	73-110R2 73-J055R1 73-076R1 73-1126R1 73-136R2 73-056R2 73-073R2	To prevent fuel leakage from between the fuel pump filter and gear housing perform visual inspections of the fuel pump filter cover helicoil inserts & bolts for damage. Applies to engine models: 2, 2A, 2B, 3, 3B, 3C, 5, 5A, 5B, 5C		X	NA3 to Fuel Pump P/N 708600-7 S/N 13512 installed.
2001-04-06 39-12124 F1997-298R4	72-854R1 or 72-854R2	To prevent fan disk failure, perform a local ultrasonic Inspection for cracks in the disk. Applies to engine models: 3, 3B, 3C.		X	NA3. Fan blades with 37 deg. and dampers installed per Ukraine International Airlines AD Status dated April 20th, 2011.
2001-08-51		Superseded by AD 2001-09-17.			Superseded
2001-11-05 39-12246 F2001-240		To prevent bearing failure, replace #4 bearing that has a S/N listed in table 1 of AD and replace with a bearing S/N not on list, within 2000 hours TIS after effective date of AD. Applies to engine models: 2, 25, 3, 3B, 5B, 5C, 7B.		X	NA4 to Bearing P/N 305-355-117-0 S/N RR17345 installed.
2002-13-03 39-12790 F2002-390		To prevent critical life limited rotating engine part failure, within the next 30 days after effective date of AD, revise Airworthiness Limitations Section of Engine Shop Manual. Applies to engine models: 2, 2A, 2B, 3, 3B, 3C, 5, 5B, 5C, 7B.	X		**CW** TSV on Fan Shaft P/N 335-006-414-0 S/N J191206.
2003-02-04		Superseded by AD 2007-03-15.			Superseded
2004-10-13 39-13643 F2004-095	73-0104R3 73-0120R5 73-0126R4	To prevent main fuel pump bearing failure resulting in fuel nozzle clogging and LPT case burn through, remove from service main fuel pumps by P/N installed. Next S/V or pump replacement, but no later than Jan 1, 2007. Applies to engine models: 2C, 3, 5		X	NA3 to Post SB 73-0144 Fuel Pump P/N 708600-7 S/N 13512 installed.
2006-26-01 39-14859 01/03/2007		There have been 12 reports of failed fuel filters. Therefore, replace fuel filter. See AD for engine Model replacement schedule. Applies to engine models: 2, 3, 5, 7B.		X	NA3 per Filter P/N installed.

W/O CFM1040 - ESN 857701

REVIEWED BY:_____ DATE: December 20th, 2019

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

CFM56 AIRWORTHINESS DIRECTIVE COMPLIANCE STATUS

A.D. NUMBER EFF. DATE	REF. SERVICE BULLETIN	DESCRIPTION	REPETITIVE INSPECTION YES	REPETITIVE INSPECTION NO	COMPLIANCE, STATUS, NEXT INSPECTION PART NUMBERS / SERIAL NUMBERS INST.
2009-01-01		Superseded by AD 2010-09-14.			Superseded
2009-11-02 39-15912 06/23/2009 2010-12-03 39-13624	72-1067	AD issued to remove from service HPC 4-9 spools by P/N and S/N listed in table 1 of AD before accumulating 8,900 CSN. Applies to engine models: 2, 3, 5A, 5B, 5C, 7B. Perform an on-wing or in shop inspection of the fan blade and damper for wear every 3,000 CSLI. Applies to engine models: 3 & 3B.		X	NA4 to P/N 1588M89G03 S/N GWN08GDT installed.
2013-02-02		Superseded by AD 2016-14-10.			Superseded
2013-26-01 39-17710 02/03/2014		Perform inspection to verify re-installation of the hand cranking pad cover to prevent loss of engine oil while in flight.	X		**CW** TSV on AGB P/N 335-300-109
2015-18-04 39-18262	72-0964 R1	Report of an un-commanded in-flight shutdown on a CFM56-7B engine following rupture of the 73-tooth gearshaft located in the engine AGB.		X	NA1
2016-14-10 39-18591 11/21/2005		Removed HPT disk P/N 880026 with S/N's GLKBAA9307, GLKBAA9335, GLKBAA9404, GLKBAA9407 and GLKBAA9409 from service before the cycles reflecting on AD 2013-02-02 Applies to engine models: 3, 3B and 3C Series		X	NA3 to installed HPT Disk P/N 1475M29P02 S/N GWN08FM5
2017-14-08 R1 39-14791 11/2/2006	72-1169 R1	Turbofan engines with steel high-pressure compressor (HPC) stator case, P/Ns: 1499M30G01,1499M30G02, 1499M30G03 or 1676M88G01, installed. Applies to engine models: 3, 3B, and 3C	X		**CW** TSV on Case P/N 1499M30G03 S/N GWNMK392. Next inspection due June 27, 2020.

TMC
ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

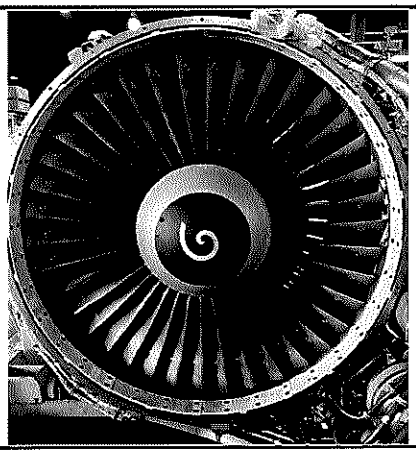
THINK QUALITY! BUILD QUALITY!

EASA # 145.5978
8545 NW 79th Ave. MEDLEY,FL 33166
PH: 786-337-6650 FAX: 786-337-6610

CFM56-3 BORESCOPE REPORT

CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	

Page 1 of 13

FAN BLADES (QTY 38)	
BLADE CONDITION:	
NO VISUAL DAMAGE	
DISPOSITION:	

LOW PRESSURE COMPRESSOR STAGE 2 BLADES (QTY 68)	
BLADE CONDITION:	
NO VISUAL DAMAGE	
DISPOSITION:	

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

THINK QUALITY! BUILD QUALITY!

EASA # 145.5978
8545 NW 79th Ave. MEDLEY,FL 33166
PH: 786-337-6650 FAX: 786-337-6610

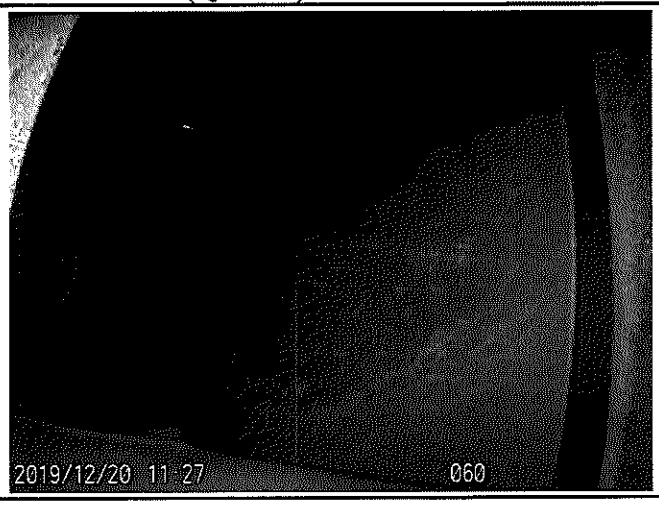
CFM56-3 BORESCOPE REPORT

CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	13

LOW PRESSURE COMPRESSOR STAGE 3 BLADES (QTY 68) PORT S0

BLADE CONDITION:

NO VISUAL DAMAGE

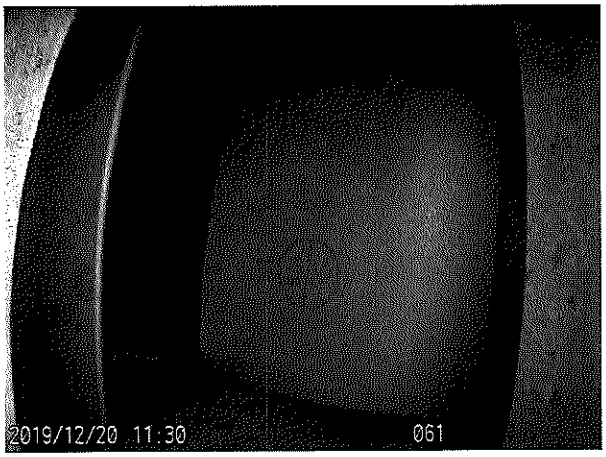


DISPOSITION:

LOW PRESSURE COMPRESSOR STAGE 4 BLADES (QTY 68) PORT S0

BLADE CONDITION:

NO VISUAL DAMAGE



DISPOSITION:

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

THINK QUALITY! BUILD QUALITY!

EASA # 145.5978
8545 NW 79th Ave. MEDLEY,FL 33166
PH: 786-337-6650 FAX: 786-337-6610

CFM56-3 BORESCOPE REPORT

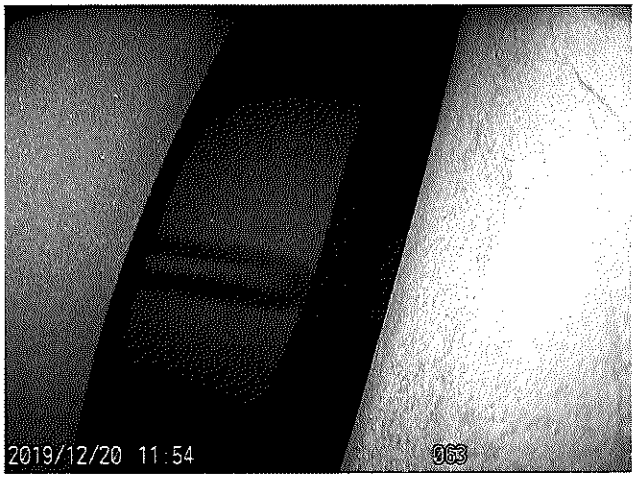
CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	TMC 13 INSP

1ST STAGE HPC BLADES (QTY 38) PORTS S1/S2

BLADE CONDITION:

NO VISUAL DAMAGE.
ENVIROMENTAL BUILD UP THROUGH OUT STAGE

DISPOSITION:

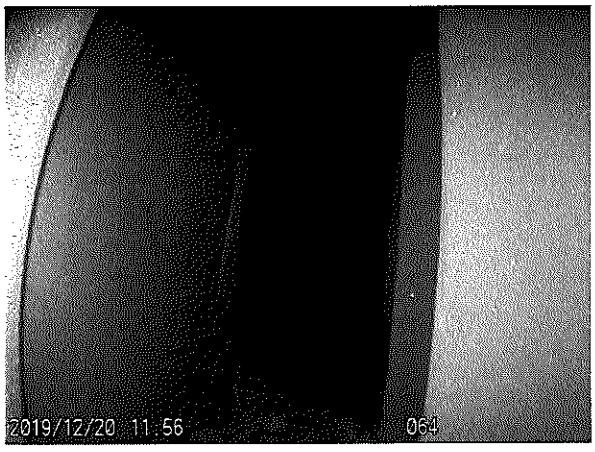


2ND STAGE HPC BLADES (QTY 53) PORTS S2/S3

BLADE CONDITION:

L/E EROSION, NO VISUAL DAMAGE
ENVIROMENTAL BUILD UP THROUGH OUT STAGE

DISPOSITION:



TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

THINK QUALITY! BUILD QUALITY!

EASA # 145.5978
8545 NW 79th Ave. MEDLEY,FL 33166
PH: 786-337-6650 FAX: 786-337-6610

CFM56-3 BORESCOPE REPORT

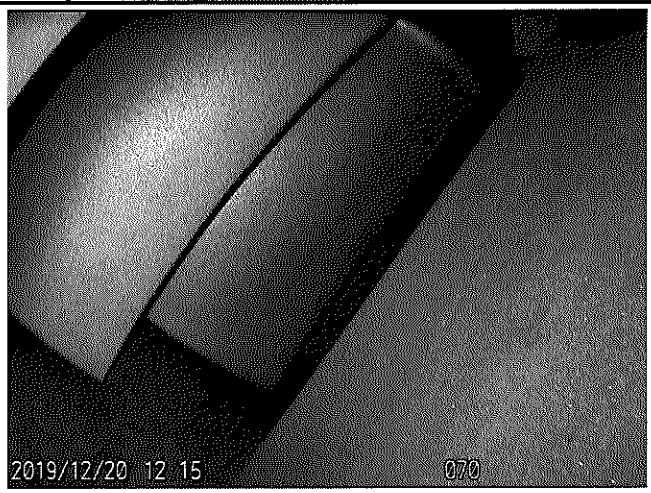
CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	TMC 13 INSP

3RD STAGE HPC BLADES (QTY 60) PORTS S3/S4

BLADE CONDITION:

NO VISUAL DAMAGE
ENVIROMENTAL BUILD UP THROUGH OUT STAGE

DISPOSITION:

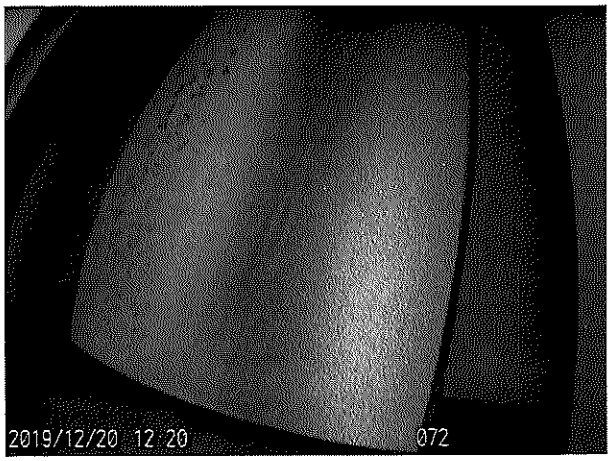


4TH STAGE HPC BLADES (QTY 68) PORTS S4/S5

BLADE CONDITION:

NO VISUAL DAMAGE
ENVIROMENTAL BUILD UP THROUGH OUT STAGE

DISPOSITION:



TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

THINK QUALITY! BUILD QUALITY!

EASA # 145.5978
8545 NW 79th Ave. MEDLEY,FL 33166
PH: 786-337-6650 FAX: 786-337-6610

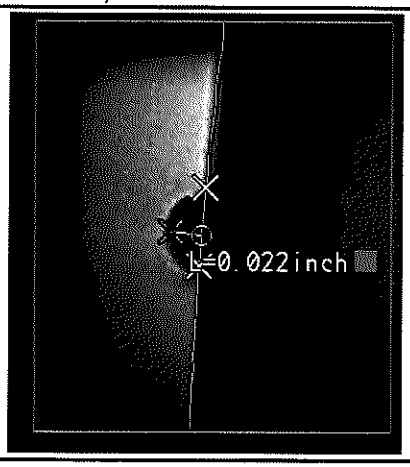
CFM56-3 BORESCOPE REPORT

CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	

5TH STAGE HPC BLADES (QTY 75) PORTS S5/S6

BLADE CONDITION:

L/E EROSION, PREVIOUS BLEND MEAS. 0.022 INCH DEPTH



DISPOSITION:

IN LIMITS IAW AMM 737 72-00-00

6TH STAGE HPC BLADES (QTY 82) PORTS S6/S7

BLADE CONDITION:

NO VISUAL DAMAGE
ENVIROMENTAL BUILD UP THROUGH OUT STAGE

DISPOSITION:

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

THINK QUALITY! BUILD QUALITY!

EASA # 145.5978
8545 NW 79th Ave. MEDLEY,FL 33166
PH: 786-337-6650 FAX: 786-337-6610

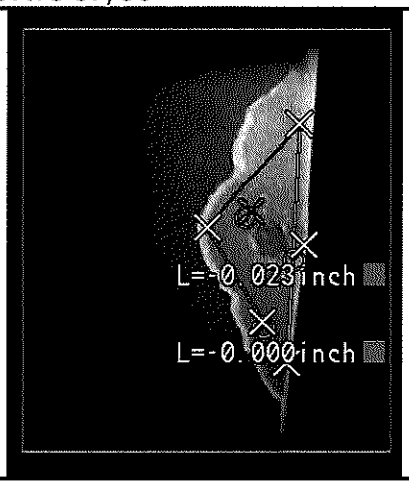
CFM56-3 BORESCOPE REPORT

CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	

7TH STAGE HPC BLADES (QTY 82) PORTS S7/S8

BLADE CONDITION:

L/E EROSION, 1 E/A BLADE T/E WITH DENT MEAS 0.023 INCH DEPTH



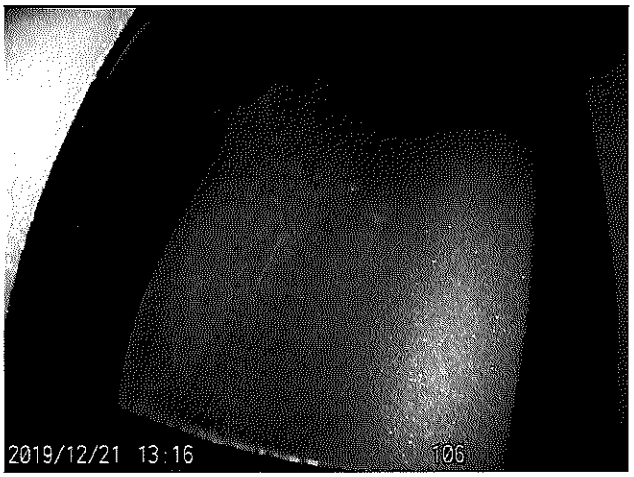
DISPOSITION:

IN LIMITS IAW AMM 737 72-00-00

8TH STAGE HPC BLADES (QTY 80) PORTS S8/S9

BLADE CONDITION:

NO VISUAL DAMAGE
ENVIROMENTAL BUILD UP THROUGH OUT STAGE



DISPOSITION:

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

THINK QUALITY! BUILD QUALITY!

EASA # 145.5978
8545 NW 79th Ave. MEDLEY,FL 33166
PH: 786-337-6650 FAX: 786-337-6610

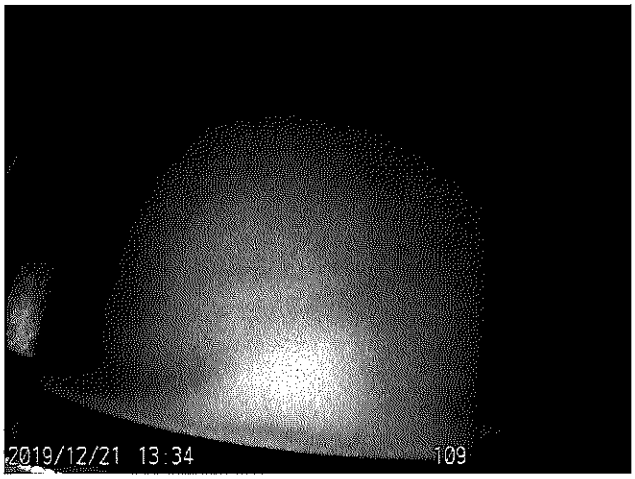
CFM56-3 BORESCOPE REPORT

CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	

9TH STAGE HPC BLADES (QTY 76) PORT S9

BLADE CONDITION:

NO VISUAL DAMAGE
ENVIROMENTAL BUILD UP THROUGH OUT STAGE



DISPOSITION:

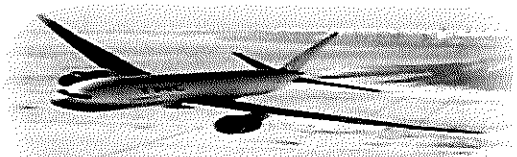
COMBUSTION CHAMBER PORTS S10-S15

CHAMBER CONDITION:

NO VISUAL DAMAGE

DISPOSITION:

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y



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PH: 786-337-6650 FAX: 786-337-6610

CFM56-3 BORESCOPE REPORT

CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	

DISCOURAGER SEALS PORTS S10 – S15	
SEALCONDITION:	
NO VISUAL DAMAGE	
DISPOSITION:	

HPT STAGE 1 NOZZLE GUIDE VANES PORTS S10-S15	
NGV CONDITION:	
NORMAL WEAR **360 DEGREE INSPECTION NOT REQUIRED PER CUSTOMER**	
DISPOSITION:	

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

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CFM56-3 BORESCOPE REPORT

CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	

1ST STAGE HPT TURBINE BLADES (QTY 72) PORTS S10-S11/S17

BLADE CONDITION:

NO VISUAL DAMAGE

DISPOSITION:

LPT STAGE 1 NOZZLE ASSEMBLY PORTS S10-S11/S7

NOZZLE CONDITION:
NO VISUAL DAMAGE
360 DEGREE INSPECTION NOT REQUIRED PER CUSTOMER

DISPOSITION:

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

THINK QUALITY! BUILD QUALITY!

EASA # 145.5978
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PH: 786-337-6650 FAX: 786-337-6610

CFM56-3 BORESCOPE REPORT

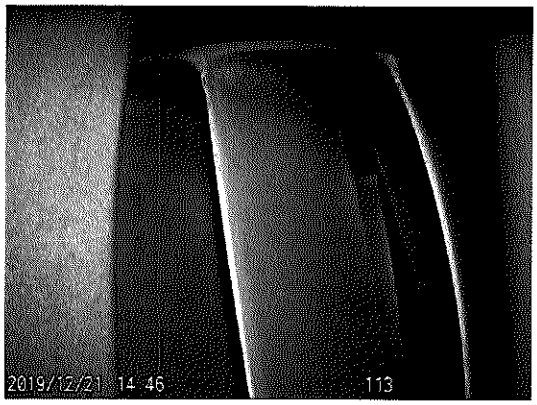
CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	

1ST STAGE LPT TURBINE BLADES (QTY 174) PORTS S17-S18/S20

CONDITION:

NO VISUAL DAMAGE

DISPOSITION:



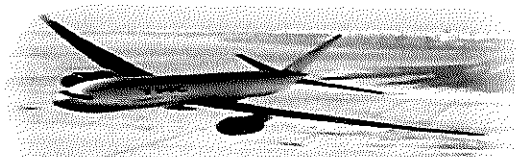
2ND STAGE LPT TURBINE BLADES (QTY 162) PORTS S20/S21

BLADE CONDITION:

MIN. L/E EROSION, ENVIROMENTAL BUILD UP

DISPOSITION:

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y



THINK QUALITY! BUILD QUALITY!

EASA # 145.5978
8545 NW 79th Ave. MEDLEY,FL 33166
PH: 786-337-6650 FAX: 786-337-6610

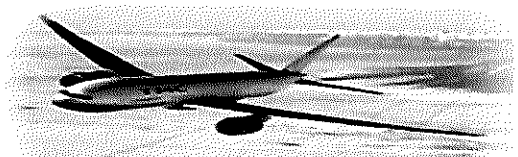
CFM56-3 BORESCOPE REPORT

CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	

3RD STAGE LPT TURBINE BLADES (QTY 157) PORTS S21/S22	
CONDITION:	
NO VISUAL DAMAGE, ENVIROMENTAL BUILD UP	
DISPOSITION:	

4TH STAGE LPT TURBINE BLADES (QTY 160) PORT S22	
BLADE CONDITION:	
NO VISUAL DAMAGE	
DISPOSITION:	

TMC
ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y



THINK QUALITY! BUILD QUALITY!

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PH: 786-337-6650 FAX: 786-337-6610

CFM56-3 BORESCOPE REPORT

CUSTOMER:	SKY TECHNIQUES				
ENGINE S/N:	857701	A/C TYPE:		W/O:	CFM1040
MODEL #:	CFM56-3C1	ENG. TT:	41,811	LOCATION:	TMC ENGINE CENTER
POSITION:	-	ENG. TC:	22,238	DATE:	December 20, 2019
REASON:	Outgoing inspection			INSPECTOR:	TMC 13 INSP

ADDITIONAL COMMENTS:

Inspector: _____ Date: 12/20/19

WORK ORDER

1. W/O #: 006511	2.Customer: MIAMI NDT	3.Date: 12/02/2019
4. A/C Model: N/A	5. Tail Number: N/A	6.Station: OPF
7. ENG Model: CFM56-3C1	8. ENG S/N: 857701	9. LP/S:

10.OILS	1:		2:		3:		4:	APU:
11.HYD	A/Y/1:		B/B/2:		C/G/3:		12.NO2:	13.Oxy:
14.LIFT TRUCK	Ty:	Hr:	15.Eng Sta:	Ty:	Hr:	16.Other:	Ty:	Hr:

17. DESCRIPTION

INSTALL, PERFORM TEST 10 ON ESN 857701 POSITION #2.
PERFORM 365 DAY PRESERVATION ON ESN 857701.
REMOVE ESN 857701 FROM POSITION #2.

18. EMPLOYEE NAMES & HOURS

1.		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

19.	NAME	SIGNATURE	DATE
Sup.	E. Lopez		12/02/19
Cust.			

OVERSIGNED CUSTOMER AGREES TO ALL CHARGES FOR SERVICES AND-OR PRODUCTS RENDERED.

XTREME AVIATION LLC.
FAA Repair Station 4XAR847C
MPA RUN DATA (CFM 56) B737 TEST NO. 10

CUSTOMER: MIAMI NDT
ENGINE MODEL: CFM56-3C1
ENGINE #1 SERIAL NO.:
ENGINE #2 SERIAL NO.: 857701
DATE: 12/16/19
POWER SETTING: 20K
THRUST RATING: 20K

ACFT REG. NO.: N359SW
WORK ORDER: 006511
WORK ORDER:
REASON: CUSTOMER REQUEST

COMMENTS:

Engine Pos.	Engine Model	Engine S/N	MEC P/N	PMC P/N	Tank	Fuel Quantity (lbs)
1					No. 1	
2	CFN56-3C1	857701	8063-215	7157m68p03	No. 2	
			FUEL TYPE - JET A		CTR	
					Total	

N/A

Engine Start Data (EGT not to exceed 725 degrees)

ENGINE POSITION	Start Lever Adv. N2%	Start Lever Adv. Motoring Time Sec.	INITIAL FUEL FLOW	LIGHT-UP TIME SEC.	STARTER CUTOUT N2%	MAX EGT ©	MAX FUEL FLOW	TIME TO IDLE SEC	ENGINE OIL QTY	ENGINE OIL TEMP	ENGINE OIL PRESSURE	AVM UNITS
1												
2	25.0%	30	0.1	1	46.5%	547	1.19	60	4	30	32	0.1

Test No. 4 - IDLE SPEED

Low Idle limit: +3.0 / -1.0 N2% *High Idle limit: +3.0 / -.7 N2%*

ENGINE POS.	OAT (°C)	BARO	Low Idle (N2 %) Target	Low Idle (N2 %) Recorded	High Idle (N2 %) Target	High Idle (N2 %) Recorded
1						
2	29	30.00	62.1	64	72.7	73

Test No. 5 Power Assurance Check (80% N1)

ENGINE POS.	OAT (°C)	BARO	TARGET N1%	Recorded Values N1%	N2%	EGT	FUEL FLOW	OT	OP	Vibe
1										
2	29	30.00	81.8%	81.8	93.4	772	5.78	100	47	1

Test No. 5 Power Assurance Check (85% N1)

ENGINE POS.	OAT (°C)	BARO	TARGET N1%	Recorded Values N1%	N2%	EGT	FUEL FLOW	OT	OP	Vibe
1										
2	29	30.00	86.9%	86.9	95.45	772	6.90	100	50	1.0

Test No. 5 Power Assurance Check (90% N1)

ENGINE POS.	OAT (°C)	BARO	TARGET N1%	Recorded Values N1%	N2%	EGT	FUEL FLOW	OT	OP	Vibe
1										
2	29	30.00	92.0%	92	97.3	872	8.2	110	50	1.1

Test No. 5 Takeoff Power Check

ENGINE POS.	OAT (°C)	TARGET N1%	Recorded Values N1%	N2%	EGT	FUEL FLOW	RED LINE	MARGIN	INSP.
1									
2	29	93.40	93.4	97.9	884	8.58	930	**46**	JANPM 335650L

Test #5 Power Assurance Check (80% N1)

ENGINE POS.	OAT (°C)	TARGET N1%	Recorded Values N1%	N2%	EGT	ADJ EGT FOR N1	MAX EGT 20K	BASE EGT MARGIN	TCC TIMER MARGIN ADJ	TCC TIMER OFF OR ON Y/N	THRUST RATING	N2 adj for	adjusted N2	MAX N2	%N2 Margin
1															
2	29	81.8%	81.8	93.4	772		787	**15**		N	20K	93.4		95.30	**1.90**

Test #5 Power Assurance Check (85% N1)

ENGINE POS.	OAT (°C)	TARGET N1%	Recorded Values N1%	N2%	EGT	ADJ EGT FOR N1	MAX EGT 20K	BASE EGT MARGIN	TCC TIMER MARGIN ADJ	TCC TIMER OFF OR ON Y/N	THRUST RATING	N2 adj for	adjusted N2	MAX N2	%N2 Margin
1															
2	29	86.9%	86.9	95.4	812		838	**26**		N	20K	95.4		97.20	**1.80**

Test #5 Power Assurance Check (90% N1)

ENGINE POS.	OAT (°C)	TARGET N1%	Recorded Values N1%	N2%	EGT	ADJ EGT FOR N1	MAX EGT 20K	BASE EGT MARGIN	TCC TIMER MARGIN ADJ	TCC TIMER OFF OR ON Y/N	THRUST RATING	N2 adj for	adjusted N2	MAX N2	%N2 Margin
1															
2	29	92.0%	92	97.3	872		898	**26**		N	20K	97.3		99.40	**2.10**

** NOTE: ENGINES WITH THE HPTCC TIMER, Adjust the EGT and N2 margins for these effects: HPTCC Timer On engines operated at 22,000 pounds thrust or less, increase the EGT margin by 17C.
** NOTE: 1) If the N1 target is more than the N1 record, there is a positive (+) difference.
2) If the N1 target is less than the N1 record, there is a negative (-) difference.

INSP. JANPM 335650L

XTREME AVIATION LLC.
FAA Repair Station 4XAR847C

TEST NO. 6 - MEC TRIM

ENG POS	OAT	BARO	WIND		PMC OFF (%N2)		PMC ON (%N1)	
			VELOCITY (KNOTS)	DIRECTION (DEGREES)	TARGET	RECORDED	TARGET	RECORDED
1								
2	29	30			93.5	93.2	75.1	76.6

TEST NO. 7 - VIBRATION SURVEY

ENG POS	OAT	BARO	STATIC T.O. TARGET (%N1)	SELECTOR SWITCH POSITION
2	29	30	93.4	ON

ACCEL			DECEL		
%N1	%N2	VIBRATION READING (UNITS)	%N1	%N2	VIBRATION READING (UNITS)
54.5	81	0.4	92.6	97.6	1
64.6	88.2	0.8	85.8	95.2	1.2
74.3	91	0.9	81.4	93.7	1
81.5	93.4	1.2	74.2	91.4	1
84.5	94.4	1	64.9	88.9	0.8
91.5	97.4	1.1	54.5	86	0.9

VIBRATION PEAK		VIBRATION READING (UNITS)								MEAN VIBRATION READING (UNITS)	SOURCE			
%N1	%N2	SEC	30 SEC	SEC	60 SEC	SEC	90 SEC	SEC	120 SEC		FAN	LPT	HPT	HPC

TEST NO. 8 - ACCEL/DECEL CHECK

ENG POS	OAT	BARO	TARGET VALUES (%N1)		ACCEL TIME (SEC)		
			STATIC T.O.	ACCEL CHECK TARGET	**LOW IDLE TO 40% N1** (Differential Limit of 4 Sec. Between Engines)	**40% N1 TO ACCEL CHECK TARGET** (Differential Limit of 2 Sec. Between Engines)	**HIGH IDEL TO ACCEL CHECK TARGET** (7.4 Sec. Max)
1							
2	29	30	93.4	91.6			7.4

REMARKS, DISCREPANCIES: N/A

INSP. 3386502

PRESERVATION TAG

1. WORK ORDER #: 006511	2. CUSTOMER: MIAMI NDT
3. ENGINE MODEL: CFM 56-3C1	4. ENGINE SERIAL NUMBER #: 577701
5. PRESERVATION DATE: 12-16-2019	6: OIL SYSTEM: BRAYCO 599
7. EXPIRATION DATE: 12-16-2020	8. FUEL SYSTEM: TURBO NYCOI 360
9. TECHNICAL DATA REFERENCE USED:	

10. ACCOMPLISHED BY: ALEXANDER BELLO	11. SIGNATURE: AB	12. DATE: 12-17-2019

Form LG-023 Rev. #: 0 Date: 27/Aug/2016

WORK ORDER

1. W/O #: 006511	2.Customer: MIAMI NDT	3.Date: 12/02/2019
4. A/C Model: N/A	5. Tail Number: N/A	6.Station: OPF
7. ENG Model: CFM56-3C1	8. ENG S/N: 857701	9. LP/S:

10.OILS	1:		2:		3:		4:	APU:
11.HYD	A/Y/1:		B/B/2:		C/G/3:		12.NO2:	13.Oxy:
14.LIFT TRUCK	Ty:	Hr:	15.Eng Sta:	Ty:	Hr:	16.Other:	Ty:	Hr:

17. DESCRIPTION

INSTALL, PERFORM TEST 10 ON ESN 857701 POSITION #2.
PERFORM 365 DAY PRESERVATION ON ESN 857701.
REMOVE ESN 857701 FROM POSITION #2.

18. EMPLOYEE NAMES & HOURS

1.		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

19.	NAME	SIGNATURE	DATE
Sup.	E. Lopez		12/02/19
Cust.			

OVERSIGNED CUSTOMER AGREES TO ALL CHARGES FOR SERVICES AND-OR PRODUCTS RENDERED.

XTREME AVIATION LLC.
FAA Repair Station 4XAR847C
MPA RUN DATA (CFM 56) B737 TEST NO. 10

CUSTOMER:	MIAMI NDT		
ENGINE MODEL:	CFM56-3C1	**ACFT REG. NO.:**	N359SW
ENGINE #1 SERIAL NO.:		**WORK ORDER:**	006511
ENGINE #2 SERIAL NO.:	857701	**WORK ORDER:**	
DATE:	12/16/19		
POWER SETTING:	20K	**REASON:**	CUSTOMER REQUEST
THRUST RATING:	20K		

COMMENTS:

Engine Pos.	Engine Model	Engine S/N	MEC P/N	PMC P/N	Tank	Fuel Quantity (lbs)
1					No. 1	
2	CFM56-3C1	857701	8063-215	7157m68p03	No. 2	
				FUEL TYPE - JET A	CTR	
					Total	

N/A

Engine Start Data (EGT not to exceed 725 degrees)

ENGINE POSITION	Start Lever Adv. N2%	Start Lever Adv. Motoring Time Sec.	INITIAL FUEL FLOW	LIGHT-UP TIME SEC.	STARTER CUTOUT N2%	MAX EGT ©	MAX FUEL FLOW	TIME TO IDLE SEC	ENGINE OIL QTY	ENGINE OIL TEMP	ENGINE OIL PRESSURE	AVM UNITS
1												
2	25.0%	30	0.1	1	46.5%	547	1.19	60	4	30	32	0.1

Test No. 4 - IDLE SPEED

Low Idle limit: +3.0 / -1.0 N2% *High Idle limit: +3.0 / -.7 N2%*

ENGINE POS.	OAT (°C)	BARO	Low Idle (N2 %) Target	Low Idle (N2 %) Recorded	High Idle (N2 %) Target	High Idle (N2 %) Recorded
1						
2	29	30.00	62.1	64	72.7	73

Test No. 5 Power Assurance Check (80% N1)

ENGINE POS.	OAT (°C)	BARO	TARGET N1%	Recorded Values N1%	N2%	EGT	FUEL FLOW	OT	OP	Vibe
1										
2	29	30.00	81.8%	81.8	93.4	772	5.78	100	47	1

Test No. 5 Power Assurance Check (85% N1)

ENGINE POS.	OAT (°C)	BARO	TARGET N1%	Recorded Values N1%	N2%	EGT	FUEL FLOW	OT	OP	Vibe
1										
2	29	30.00	86.9%	86.9	95.45	772	6.90	100	50	1.0

Test No. 5 Power Assurance Check (90% N1)

ENGINE POS.	OAT (°C)	BARO	TARGET N1%	Recorded Values N1%	N2%	EGT	FUEL FLOW	OT	OP	Vibe
1										
2	29	30.00	92.0%	92	97.3	872	8.2	110	50	1.1

Test No. 5 Takeoff Power Check

ENGINE POS.	OAT (°C)	TARGET N1%	Recorded Values N1%	N2%	EGT	FUEL FLOW	OT	MARGIN	INSP
1									
2	29	93.40	93.4	97.9	884	8.58	930	46	3/25/20

Test #5 Power Assurance Check (80% N1)

ENGINE POS.	OAT (°C)	TARGET N1%	Recorded Values N1%	N2%	EGT	ADJ EGT FOR N1	MAX EGT 20K	BASE EGT MARGIN	TCC TIMER MARGIN ADJ	TCC TIMER OFF OR ON Y/N	THRUST RATING	N2 adj for	adjusted N2	MAX N2	N2 Margin
1															
2	29	81.8%	81.8	93.4	772		787	15		N	20K		93.4	95.30	1.90

Test #5 Power Assurance Check (85% N1)

ENGINE POS.	OAT (°C)	TARGET N1%	Recorded Values N1%	N2%	EGT	ADJ EGT FOR N1	MAX EGT 20K	BASE EGT MARGIN	TCC TIMER MARGIN ADJ	TCC TIMER OFF OR ON Y/N	THRUST RATING	N2 adj for	adjusted N2	MAX N2	N2 Margin
1															
2	29	86.9%	86.9	95.4	812		838	26		N	20K		95.4	97.20	1.80

Test #5 Power Assurance Check (90% N1)

ENGINE POS.	OAT (°C)	TARGET N1%	Recorded Values N1%	N2%	EGT	ADJ EGT FOR N1	MAX EGT 20K	BASE EGT MARGIN	TCC TIMER MARGIN ADJ	TCC TIMER OFF OR ON Y/N	THRUST RATING	N2 adj for	adjusted N2	MAX N2	N2 Margin
1															
2	29	92.0%	92	97.3	872		898	26		N	20K		97.3	99.40	2.10

** NOTE: ENGINES WITH THE HPTCC TIMER, Adjust the EGT and N2 margins for these effects: HPTCC Timer On engines operated at 22,000 pounds thrust or less, increase the EGT margin by 17C.

** NOTE: 1) If the N1 target is more than the N1 record, there is a positive (+) difference.
2) If the N1 target is less than the N1 record, there is a negative (-) difference.

INSP: 3/25/20

XTREME AVIATION LLC.
FAA Repair Station 4XAR847C

TEST NO. 6 - MEC TRIM

ENG POS	OAT	BARO	WIND		PMC OFF (%N2)		PMC ON (%N1)	
			VELOCITY (KNOTS)	DIRECTION (DEGREES)	TARGET	RECORDED	TARGET	RECORDED
1								
2	29	30			93.5	93.2	75.1	76.6

TEST NO. 7 - VIBRATION SURVEY

ENG POS	OAT	BARO	STATIC T.O. TARGET (%N1)	SELECTOR SWITCH POSITION
2	29	30	93.4	ON

ACCEL			DECEL		
%N1	%N2	VIBRATION READING (UNITS)	%N1	%N2	VIBRATION READING (UNITS)
54.5	81	0.4	92.6	97.6	1
64.6	88.2	0.8	85.8	95.2	1.2
74.3	91	0.9	81.4	93.7	1
81.5	93.4	1.2	74.2	91.4	1
84.5	94.4	1	64.9	88.9	0.8
91.5	97.4	1.1	54.5	86	0.9

VIBRATION PEAK		VIBRATION READING (UNITS)								MEAN VIBRATION READING (UNITS)	SOURCE			
%N1	%N2	SEC	30 SEC	SEC	60 SEC	SEC	90 SEC	SEC	120 SEC		FAN	LPT	HPT	HPC

TEST NO. 8 - ACCEL/DECEL CHECK

ENG POS	OAT	BARO	TARGET VALUES (%N1)		ACCEL TIME (SEC)		
			STATIC T.O.	ACCEL CHECK TARGET	**LOW IDLE TO 40% N1** (Differential Limit of 4 Sec. Between Engines)	**40% N1 TO ACCEL CHECK TARGET** (Differential Limit of 2 Sec. Between Engines)	**HIGH IDEL TO ACCEL CHECK TARGET** (7.4 Sec. Max)
1							
2	29	30	93.4	91.6			7.4

REMARKS, DISCREPANCIES:

N/A

INSP. [signature] 3358502

PRESERVATION TAG

1. WORK ORDER #: 006511	2. CUSTOMER: MIAMI NDT
3. ENGINE MODEL: CFM 56-3C1	4. ENGINE SERIAL NUMBER #: 577701
5. PRESERVATION DATE: 12-16-2019	6: OIL SYSTEM: BROVCO 599
7. EXPIRATION DATE: 12-16-2020	8. FUEL SYSTEM: TURBO NVCOI 360
9. TECHNICAL DATA REFERENCE USED:	
10. ACCOMPLISHED BY: ALEXANDER BELLO	11. SIGNATURE: AB / 12. DATE: 12-17-2019

Form LG-023 Rev. #: 0 Date: 27/Aug/2016

Model: **CFM56-3C1**

ESN: **857701**

Customer: **SKY TECHNIQUES**

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LR447Y

Work Order: **CFM1040**

Date: **12/20/2019**

Instructions:
1. Record part numbers and serial numbers.
2. Stamp each item recorded in "Insp" column.
3. Each item must be completed.

Abbreviations:
I: Installed
NI: Not Installed

A/C Type:
B737 -300/400/500

Serialized Items — **FAN MAJOR MODULE**

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
1	Valve TAI Nose Cowl Assy			☐	☑		172625-6	585A	☑	☐		
2	Thermal Anti- Ice Switch	21SN41-52	R03278A	☑	☐		21SN41-52	R03278A	☑	☐		
3	Ignition Exciter Box Upper	9238M66P07	UNNCV503	☑	☐		10-631045-1	UNNCV503	☑	☐		
4	Ignition Exciter Box Lower	9238M66P07	UNNCV517	☑	☐		10-631045-1	UNNCV517	☑	☐		
5	High Stage Regulator	107484-7	11143	☑	☐		59364-3171624-6	6201	☑	☐		
6	PMC	7157M68P03	ECDB0828	☑	☐		7157M68P03	ECDB0828	☑	☐		
7	Oil Tank Transmiter	N/V	N/V	☑	☐		20041-0000-03	3793H	☑	☐		
8	Oil Tank	N/V	N/V	☑	☐		335-261-203-0	4164	☑	☐		
9	N1 Speed Sensor	320-094-001-0	Not Visible	☑	☐		320-094-001-0	14246	☑	☐		

Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
10	CSD Oil Cooler			☐	☐		UA538551-2	WASC8047	☑	☐		
11	C I T Sensor	8901-274	WYG76892	☑	☐		N/V	N/V	☑	☐		
12	Lube Unit	335-261-000-5	4521	☑	☐		335-261-005-05	6819	☑	☐		
13	Oil Filter Differential Switch	21SN04-226A	R01231B	☑	☐		21SN04-226A	R021311	☑	☐		
14	Fuel Filter Differential Pressure Switch	21SN04-209A	R02174B	☑	☐		21SN04-209A	R02174B	☑	☐		
15	Fire Detector Harness - Lower			☐	☐		N/V	N/V	☑	☐		
16	MEC	8063-215	WYG65464	☑	☐		8063-215	WYG66002	☑	☐		
17	Main Fuel Pump	708600-7	13512	☑	☐		301-779-007-0	V3512	☑	☐		
18	Engine Throttle Fuel Control Box			☐	☐		N/I	N/I	☐	☑		
19	Transfer Gearbox			☐	☐		335-300-011-0	5912	☑	☐		

Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
20	Heat Fuel Servo	45731-1251-1	FHS11112	✓			45731-1251-1	FHS11112	✓			
21	Heat Exchange Oil Fuel	69 202-300-3	13061	✓			69202-300-3	13061	✓			
22	Starter	3505716-6	6351C	✓			N/V	N/V	✓			
23	Start Valve	324495	Not Visible	✓			3289630-3	N/V	✓			
24	Fire Detector Harness – Upper						472583	1160	✓			
25	Control Alternator or (N2 Speed Sensor)	9974M82P03	GJAHA274	✓			9974M82P03	GJAHD2371M	✓			
26	Accessory Gearbox						335-300-110-0	WB7179	✓			
27	Main Hydraulic Pump	371380	MX236072	✓			371380	MX236072	✓			
28	CSD						735511A	B4209	✓			
29	CSD Quad Ring						99167/689460A	17750	✓			

Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
30	Generator	976J498-2	PK1269	✓			976J498-2	PK19629	✓			
31	Fuel Flow Transmitter	8TJ124GGM1	2006L	✓			8TJ124GGM1	2006L	✓			
32	Fuel Nozzle Filter											
33	Oil Pressure Transmitter	418-20044	9312191	✓			418-20044	9312191	✓			
34	Oil Pressure Switch	21SN04-211A	R02378B	✓			21SN04-211A	R02378B	✓			
35	Timer HPTCCV	7119M71G07	GOS29173	✓			07482-7119M7160 7	GO528173	✓			
36	T2 Fan Inlet Temp Sensor	8901-326	WYG75743	✓			66503-8901-326	WYG82267	✓			
37	Front Spinner Cone						N/V	N/V	✓			
38	Rear Spinner Cone						335-011-208-0	RT04829	✓			
39	FWD. Engine Mount (LH)	310A1021-2	45739	✓			310A1021-2	45731	✓			

Model: **CFM56-3C1**

ESN: **857701**

Customer: **SKY TECHNIQUES**

TMC ENGINE CENTER, INC. FAA CERTIFIED REPAIR STATION No. Z8LR447Y

Work Order: **CFM1040**

Date: **12/20/2019**

Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
40	FWD. Engine Mount (RH)	310A1021-1	45731	✓			310A1021-2	45739	✓			
41	Cone Bolt (LH)						N/I	N/I		✓		
42	Cone Bolt (RH)						N/I	N/I		✓		
43	FWD. Thrust Link Mount Fitting (LH)						310A1036-1	45734	✓			
44	FWD. Thrust Link Mount Fitting (RH)						310A1036-2	22428	✓			
45	FWD. Thrust Link Mount Assy.						N/I	N/I		✓		
46	VBV Fuel Gear Motor	706400-4	14101V	✓			706400-4	12104V	✓			
	CORE MAJOR MODULE											
47	Fan/Air Pre-Cooler Control Valve	3289562-5	6337	✓			8289562-4	2764	✓			
48	VSV Actuator (RH)	1211175-011	APMBS263	✓			1211175-011	APMBS263	✓			
49	High Stage High Pressure Shut-Off Valve						N/I	N/I		✓		

Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
50	HPTCCV			☐	☐		7061M31	GAT5D893	☑	☐		
51	Bleed Air Regulator	107492-3	1204C	☑	☐		107492-40	6915	☑	☐		
52	VSV Actuator (LH)	1211175-011	APMBS255	☑	☐		1211175-01	APMB5255	☑	☐		
53	Valve – Start Bleed Stage 5			☐	☐		324495	WCPB3414	☑	☐		
54	Bleed Air Check Valve	3214552-5	2676	☑	☐		32022222-1	4387	☑	☐		
55	Pressure Regulator S.O.V.			☐	☐		N/V	N/V	☑	☐		
	LPT MAJOR MODULE											
56	AFT Engine Mount			☐	☐		N/V	N/V	☑	☐		
57	Exhaust Plug			☐	☐		N/V	N/V	☑	☐		
58	Exhaust Sleeve			☐	☐		N/V	N/V	☑	☐		
59	Exhaust Sleeve Skirt Fairing			☐	☐		N/V	N/V	☑	☐		

Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
60	Fire Detector (AFT) # 59			☐	☐		472582	0203	☑	☐		
	Nine Probes EGT Thermocouple Wiring Harness											
61	EGT Upper Wiring Harness			☐	☐		N/V	N/V	☑	☐		
62	RH EGT Wiring Harness			☐	☐				☐	☐		
63	LH Upper EGT Wiring Harness			☐	☐		301-779-801-0	16744	☑	☐		
64	LH Middle EGT Wiring Harness			☐	☐		301-785-202-0	17533	☑	☐		
65	LH Bottom EGT Wiring Harness			☐	☐		301-779-801-0	16745	☑	☐		
66	EGT FWD. Wiring Harness			☐	☐				☐	☐		
	Six Probes EGT Thermocouple Wiring Harness											
67	LH Upper EGT Wiring Harness			☐	☐				☐	☐		
68	LH Middle EGT Wiring Harness			☐	☐				☐	☐		

Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
Six Probes EGT Thermocouple Wiring Harness (continued)												
69	LH Lower EGT Wiring Harness			☐	☐				☐	☐		
70	RH Upper EGT Wiring Harness			☐	☐				☐	☐		
71	RH Middle EGT Wiring Harness			☐	☐		301-785-001-0	YC179585-1	☑	☐		
72	RH Lower EGT Wiring Harness			☐	☐				☐	☐		

Check serialized items to ensure that items 1 through 72 are completed and signed off.

Incoming:

TMC 13 INSP

Inspector: _____

Date: 6/11/2019

Outgoing:

TMC 15 INSP

Inspector: _____

Date: 12/20/2019

Non-Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
1	Engine Data Plate	CFM56-3C-1	NA	✓			857701	NA	✓			
2	T-12 Fan Inlet Sensor (Stowed)	301-771-601-0	NA	✓			301-771-601-0	NA	✓			
3	PS12 Sensor & Sensing Line (4 ea Fan Inlet)		NA				N/V	NA	✓			
4	Ignition Lead LH		NA				N/V	NA	✓			
5	Ignition Lead RH		NA				N/V	NA	✓			
6	Oil Tank Scupper Drain Tube		NA				305-304-007-0	NA	✓			
7	CSD Oil Filter Housing		NA				N/V	NA	✓			
8	Magnetic Chip Detectors (3 each)		NA				N/V	NA	✓			
9	Lube Supply Filter & Visual Clogging Indicator		NA				N/V	NA	✓			
10	Scavenge Filter & Visual Clogging Indicator		NA				N/V	NA	✓			

Non-Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
11	Oil Temp Bulb		NA	☐	☐		N/V	NA	☑	☐		
12	Fuel Supply Inlet Hose		NA	☐	☐		N/V	NA	☑	☐		
13	Fuel Filter Housing		NA	☐	☐		N/V	NA	☑	☐		
14	Starter Duct		NA	☐	☐		N/V	NA	☑	☐		
15	Main Hydraulic Supply Hose		NA	☐	☐		N/V	NA	☑	☐		
16	Main Hydraulic Pressure Hose		NA	☐	☐		N/V	NA	☑	☐		
17	Main Hydraulic Case Drain Hose		NA	☐	☐		N/V	NA	☑	☐		
18	CSD Supply Hose		NA	☐	☐		N/V	NA	☑	☐		
19	Timer Lockout Solenoid HPTCCV		NA	☐	☐		N/V	NA	☑	☐		
20	CSD Pressure Hose		NA	☐	☐		N/V	NA	☑	☐		

Non-Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
21	CSD Servicing Hose		NA	☐	☐		N/V	NA	☑	☐		
22	Oil Cooler Inlet Hose		NA	☐	☐		N/V	NA	☑	☐		
23	Generator Cooling Duct (Long & Short) Duct)		NA	☐	☐		N/V	NA	☑	☐		
24	N1 Vibration Transducer		NA	☐	☐		N/V	NA	☑	☐		
25	Generator Electrical Harness (W0200)		NA	☐	☐		N/V	NA	☑	☐		
26	PMC Electrical Harness Connector (J2, 3, 4, 5 Test plug)		NA	☐	☐		7517M18P03	NA	☑	☐		
27	Fan Module Electrical Harness		NA	☐	☐		N/V	NA	☑	☐		
28	Inlet Cowling		NA	☐	☐		N/I	NA	☐	☑		
29	Extension Ring Assembly		NA	☐	☐		N/V	NA	☑	☐		
30	Bleed Flow Bias Sensor		NA	☐	☐		N/V	NA	☑	☐		

Non-Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
31	LPT Stage 1 Cooling Tubes RH (2 each)		NA	☐	☐		N/V	NA	☑	☐		
32	HPTCCV Discharge Manifold		NA	☐	☐		N/V	NA	☑	☐		
33	HPTCCV Cooling Air Tube 9th Stage		NA	☐	☐		N/V	NA	☑	☐		
34	Fuel Nozzle (20 each)		NA	☐	☐		N/V	NA	☑	☐		
35	Igniter Plug RH		NA	☐	☐		N/V	NA	☑	☐		
36	Igniter Plug LH		NA	☐	☐		N/V	NA	☑	☐		
37	N2 Vibration Transducer		NA	☐	☐		N/V	NA	☑	☐		
38	EGT Shunt		NA	☐	☐		N/V	NA	☑	☐		
39	LPT Stag 1 Cooling Tubes LH (2 each)		NA	☐	☐		N/V	NA	☑	☐		
40	VSV Feed Back Cables		NA	☐	☐		N/V	NA	☑	☐		

Non-Serialized Items

Item	Nomenclature	Part No. Received	S/N Received	I	NI	Insp	Part No. Shipped	S/N Shipped	I	NI	Insp	Remarks
41	VBV Feed Back Cables		NA	☐	☐		N/V	NA	☑	☐		
42	HPC Stag Bleed Duct		NA	☐	☐		N/V	NA	☑	☐		
43	HPC Stage 9 Bleed Duct		NA	☐	☐		N/V	NA	☑	☐		
44	EGT Bracket and Terminal Lugs Block		NA	☐	☐		N/V	NA	☑	☐		
45	LPT Case Cooling Manifold		NA	☐	☐		N/V	NA	☑	☐		
46	AFT Sump Oil Scavenge Line		NA	☐	☐		N/V	NA	☑	☐		
47	AFT Sump Oil Supply Line		NA	☐	☐		N/V	NA	☑	☐		
48	LPT Cooling Distribution Box		NA	☐	☐		N/V	NA	☑	☐		
49	Flame Arrestor		NA	☐	☐		N/V	NA	☑	☐		

Model: **CFM56-3C1**

ESN: **857701**

Customer: **SKY TECHNIQUES**

TMC ENGINE CENTER, INC.
FAA CERTIFIED REPAIR STATION No. Z5LF447Y

Work Order: **CFM1040**

Date: **12/20/2019**

Check non-serialized items to ensure that items 1 through 49 are completed and signed off.

Incoming:	**Outgoing:**
Inspector: TMC 13 INSP	Inspector: TMC 15 INSP
Date: 6/11/2019	Date: 12/20/2019