

From: [Browning, JILL G](#)
To: [Monville Timothy](#)
Cc: [Lowenstein, CHRIS O](#)
Subject: RE: Sikorsky Written Approval to put Report into NTSB Public Docket, ERA16LA261 - NTSB Third Party Proprietary Information
Date: Wednesday, May 3, 2017 1:29:01 PM
Attachments: [image001.png](#)
[image002.png](#)

(NTSB) Third Party Proprietary Information

Information in which an individual or entity other than Lockheed Martin has a proprietary right or interest, and that may be subject to restrictions on further disclosure even to other Lockheed Martin employees. Refer to CRX-015D for more information.

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Message Start:

Tim,

Sikorsky grants permission to the NTSB to post the report in the public docket. Please note and retain the markings on the cover page and on subpages in the document. This document does contain export controlled technical data ECCN 9E991.

Regards,
JILL

Jill Browning

Chief ASI and Manager Aviation Safety
Sikorsky, A Lockheed Martin Company
[REDACTED] Stratford, CT

M [REDACTED]
[REDACTED]

From: Monville Timothy [mailto:monvilt@ntsb.gov]
Sent: Wednesday, May 3, 2017 12:45 PM
To: Lowenstein, CHRIS O (US); Browning, JILL G (US)
Cc: Monville Timothy
Subject: EXTERNAL: Sikorsky Written Approval to put Report into NTSB Public Docket, ERA16LA261
Importance: High

Chris/Jill, good afternoon. This e-mail requests written permission to place the attached report in the NTSB public docket.

v/r,
Tim Monville

Timothy W. Monville
Sr. Air Safety Investigator
National Transportation Safety Board
45065 Riverside Parkway
Ashburn, VA 20147
Work Phone: (202) 314-6197
Work Facsimile: [REDACTED]

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Sikorsky Aircraft Component Examination Report

NTSB REPORT NUMBER: ERA16LA261

OPERATOR: R&B Helicopters

MODEL: 269C-1

**AIRCRAFT: S0078
(FAA registry N6148D)**

This data is proprietary to Sikorsky Aircraft Corporation (SAC) and is provided voluntarily and in strict confidence at the request of the NTSB, and is accepted on that basis with the express agreement that this data will be restricted to the official use of the NTSB and will not be released to any person outside the NTSB without the written consent of SAC.

FOIA Exemption: Furnished in confidence and subject to exemption under sub-section (b) of 5 USC 552.

Date of Accident: 7-16-16

Location of Accident: Calhoun GA

Report Date: 11-8-2016

Prepared By:


Steven Gleason
Aircraft Safety Investigation Light Helicopters



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I. INTRODUCTION

The purpose of this report is to present factual observations on the condition of the mishap aircraft prior to and after the mishap in order to make a determination as to whether the aircraft condition played a role in the cause of the accident. All aspects of a safety investigation were explored to identify primary cause factors that may have contributed to this accident in an attempt to prevent the same accident from occurring again.

The National Transportation Safety Board (NTSB) was the cognizant investigating authority. Mr. Tim Monville was the Investigator-In-Charge. The NTSB conducted the mishap as a "Limited" investigation.

This report is based on information provided by the NTSB and FAA, as well as the load stroke evaluations of the landing gear dampers conducted at Sikorsky Aircraft supplier TruAtlantic Mfg. Kenersville NC. The Sikorsky Air Safety Investigator did not participate in the field examination of the aircraft. The Sikorsky Air Safety Investigator did participate in the damper load stroke tests at TruAtlantic

II. BACKGROUND

Mission

The flight was intended as a 14 CFR Part 91 flight from the Tom B David Field Airport (CZL), Calhoun, Georgia. No flight plan was filed with the FAA, nor was one required. Good weather prevailed for the day VFR flight.

A. Accident Sequence

With two commercial pilots on board, one pilot reported that the helicopter started to shake as the throttle was rolled on and RPM was nearing the colored arc. He assisted the other pilot in raising the collective. He reported that they were not able to get airborne and the shake got worse and the helicopter began to come apart.

B. Accident Site Description

The accident occurred on the airport, on a taxiway.

III. EVALUATION

A. Aircraft Configuration

The aircraft was a 269C-1 with single fuel tank, right hand pilot in command and dual controls which were installed. The aircraft had an aftermarket baggage compartment mounted on the right side fuel tank location.

B. Weather

NTSB reported Visual Meteorological Conditions prevailed.

C. Aircraft History

The aircraft was a 269C-1 serial number S0078 manufactured by Schweizer Aircraft and delivered in April of 1998 to Helicopter Adventures.

The aircraft was registered as N6148D and owned by R&B Helicopters.

D. Aircraft Maintenance

A partial maintenance history was provided. A 100 hour/Annual Inspection was signed off on 5/12/2015 as a 14CFR43 Appendix D inspection at 2330.1 total airframe hours. A separate entry indicated that the landing gear dampers were "recharged" at 2038.3 hours on 11-11-2013 by an A&P mechanic. Maintenance was provided by an A&P mechanics.

E. Aircraft Analysis

The landing gear dampers were forwarded to Greensboro FAA FSDO and brought to TruAtlantic for testing.

1. Airframe / landing gear dampers

The four landing gear dampers were tested at TruAtlantic using a load cell to apply pressure and a computer to record the stroke position versus the load required for compression. This computer program is the same as is used to verify proper assembly and operation of new production dampers. A representative from the Greensboro FSDO was present for the testing. Two tests were run on each damper, in each case both tests produced similar results. One chart for each damper is attached. Charts for acceptable dampers are also attached.

All four dampers failed the load stroke test.

The rubber dust boots were removed and the interior was found to be dry. The pistons exhibited minor light marking which wiped off easily. The dust scrapper in the upper relief of the barrel was clean and there was no liquid present and no dried residue apparent.

There was a minor discrepancy in the identification of the dampers on the charts; all serial numbers were prefixed with and "A" versus the "S" on the physical damper identification plates. Also the dash number was listed as -019 for the aft and was hand corrected on the printed charts; -021.

The damper identified as left forward, part number 269A3150-19, serial number S0450, was intact. There were several minor "dings" in the bottom of the upper cap. The load stroke test showed it was out of limits at the low range compression test point and very low at the ultimate load range.



Sikorsky Field Notes: Report Number 2016/269C/004

The damper identified as right forward, part number 269A3150-19 serial number S0442 was intact, with only a minor dent in the bottom cap. The load stroke test showed it was within limits at the low range compression test point and very low at the ultimate load range.

The damper identified as left rear part number 269A3150-21 serial number S0424 was intact. The load stroke test indicated it was slightly out of limits; high at initial yield point and slightly low at ultimate load range, maximum travel.

The damper identified as rear, part number 269A3150-21, serial number S0438 was intact. The load stroke test indicated an out of limits high; it did not reach the full travel stroke, with the load reading at the max range limit.

2. Main Rotor Dampers

The three MR elastomeric dampers (269A1290-3) were not examined. Photos that were available for examination showed all three had started to separate the elastomeric material in the barrel. One damper exhibited a fractured turnbuckle shaft.



OBSERVATIONS

1. The forward landing gear dampers were significantly out of limits; low at ultimate load.
2. One aft landing damper was significantly out of limits; exceeded ultimate load prior to reaching ultimate stroke.
3. One aft landing gear damper was slightly out of limits; under charged.



APPENDICES

FREEDOM OF INFORMATION ACT (FOIA) EXEMPTION NOTICE
Furnished in confidence and subject to exemption under sub-section (b) of 5 USC 552.



APPENDIX I:

GLOSSARY: ACRONYMS AND ABBREVIATIONS

A&P	Airframe and Powerplant (mechanic)
CFR	Code of Federal Regulations
CVR	Cockpit Voice Recorder
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
HMI	Handbook of Maintenance Instructions
IIC	Investigator in Charge
MGB	Main Gearbox
MR	Main Rotor
MRH	Main Rotor Head
NTSB	National Transportation Safety Board
RH	Right Hand
SAC	Sikorsky Aircraft Corporation
TR	Tail Rotor
TRDS	Tail Rotor Drive Shaft
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions



APPENDIX II:

NTSB Personnel and other Parties to the Investigation

Tim Monville, Eastern Regional OfficeNTSB Investigator-in-Charge (not on site)

Other Parties to the Investigation:

David Hintz FAA ASI, Greensboro FSDO, Greensboro NC
Steven Gleason Sikorsky Aircraft
Larry Hunter TruAtlantic Manager
Ricky Handy TruAtlantic Technician



Sikorsky Field Notes: Report Number 2016/269C/004

APPENDIX III:

FREEDOM OF INFORMATION ACT (FOIA) EXEMPTION NOTICE
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ECCN 99E991

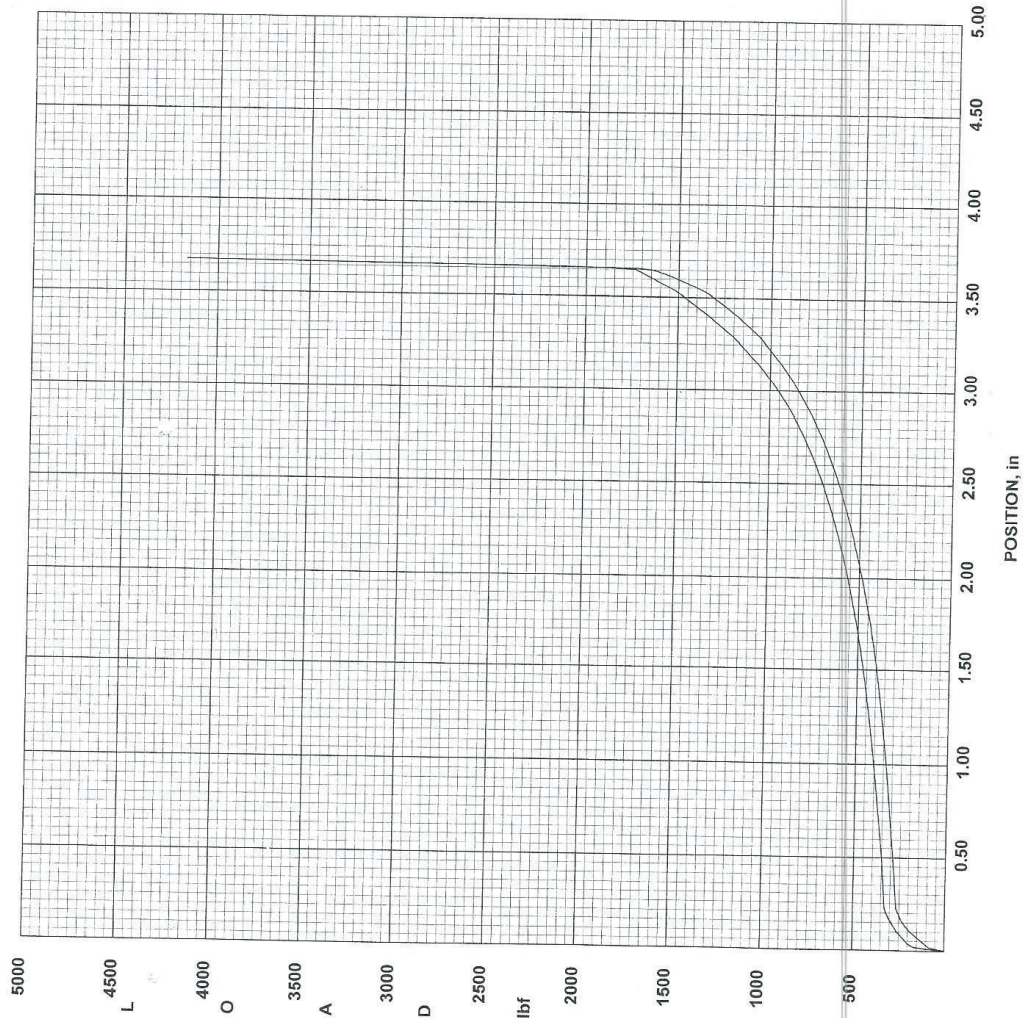
1st
Test

TRUATLANTIC MANUFACTURING, LLC.
1125 SPECTRA CT. KERNERSVILLE,
NC. 27284
ASSEMBLY AND TESTING

269A3150 Damper Load Stroke Test

Test Setting	Dampers -19, -23, -
Operator	101 R.HANDY
Dash Number:	-019
Serial Number:	A0450
Test:	10/17/16
DOM:	RETEST 10/17/2016
Temp. F:	73
Yield Pt, lbf:	168.6
Position@487lbf+, in:	1.609
Position@487lbf-, in:	2.01
Ultimate Load, lbf:	1719
Ultimate Position, in:	3.64
Test Spec and Reqs:	SEPB 21-105

145
234
163
134
134
3500
2500



Test Failed

Oct 17, 2016 9:59:46 AM
SN: 312459 V7.02.11

Chart 1 forward left damper

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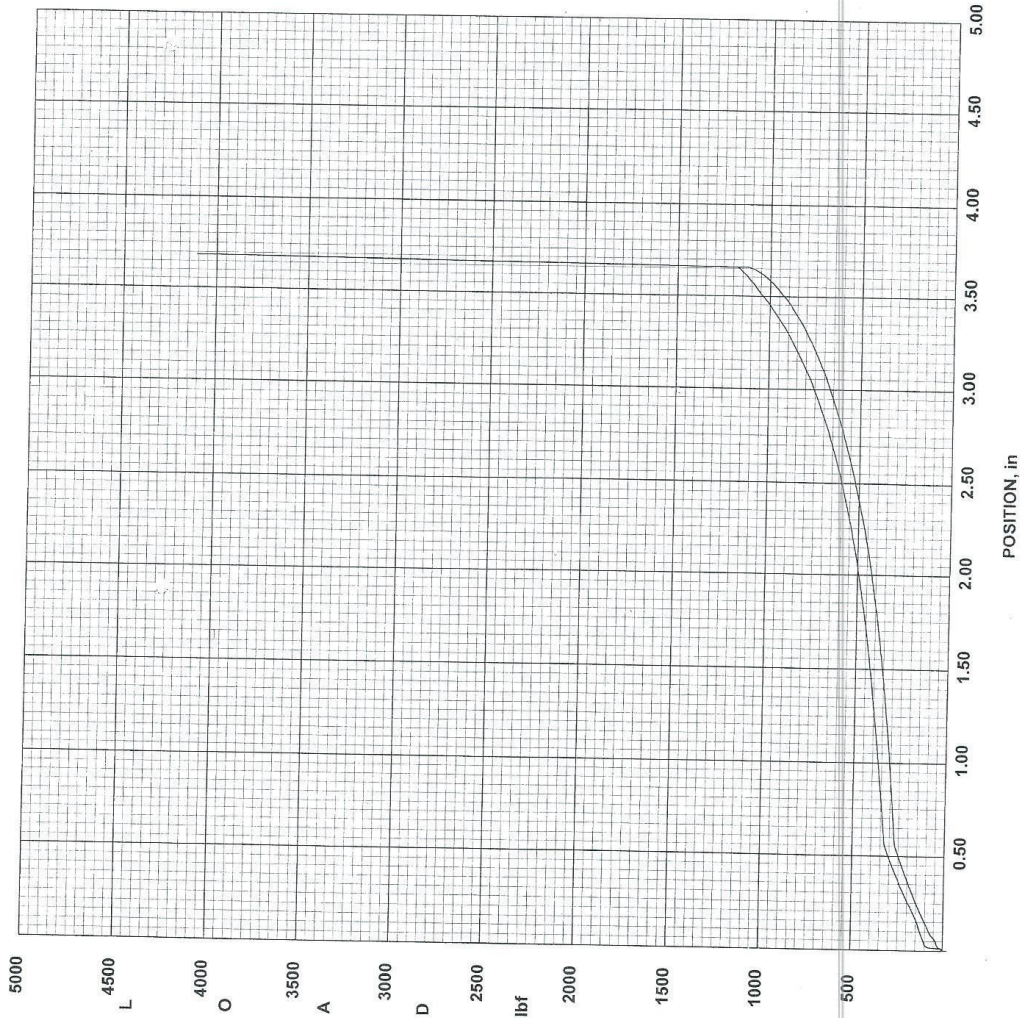
ECCN 99E991

15T
Test

TRUATLANTIC MANUFACTURING, LLC.
1125 SPECTRA CT. KERNERSVILLE,
NC. 27284
ASSEMBLY AND TESTING

269A3150 Damper Load Stroke Test

Test Setting	Dampers -19, -23, -	
Operator	101	
	R. HANDY	
Dash Number:	-019	
Serial Number:	S0442	
Test:	10/17/16	
DOM:	RETEST	
	10/17/2016	
Temp, F:	73	145
Yield Pt, lbf:	93.6	234
Position@487lbf+, in:	1.958	163
Position@487lbf-, in:	2.34	234
Ultimate Load, lbf:	1180	163
Ultimate Position, in:	3.66	234
Test Spec and Reqts:	SEPB 21-105	2000



Test Failed

Oct 17, 2016 9:47:41 AM
SN: 312459 V7.02.11

Chart 2 forward right damper

1ST
Test

TRUATLANTIC MANUFACTURING, LLC.
1125 SPECTRA CT. KERNERSVILLE,
NC. 27284
ASSEMBLY AND TESTING DEPT.

269A3150 Damper Load Stroke Test

Test Setting Operator
Dampers -21, -25, -99
R. HANDY

~~649~~ - 21

Dash Number:
Serial Number:
Test:

Temp. F:
Yield Pt, lbf:
Yield, lbf:

72
419
3780

Position@814lbf, in:

Position@814lbf, in:

Ultimate Load, lbf:

Ultimate Position, in:

Test Spec and Reqts:

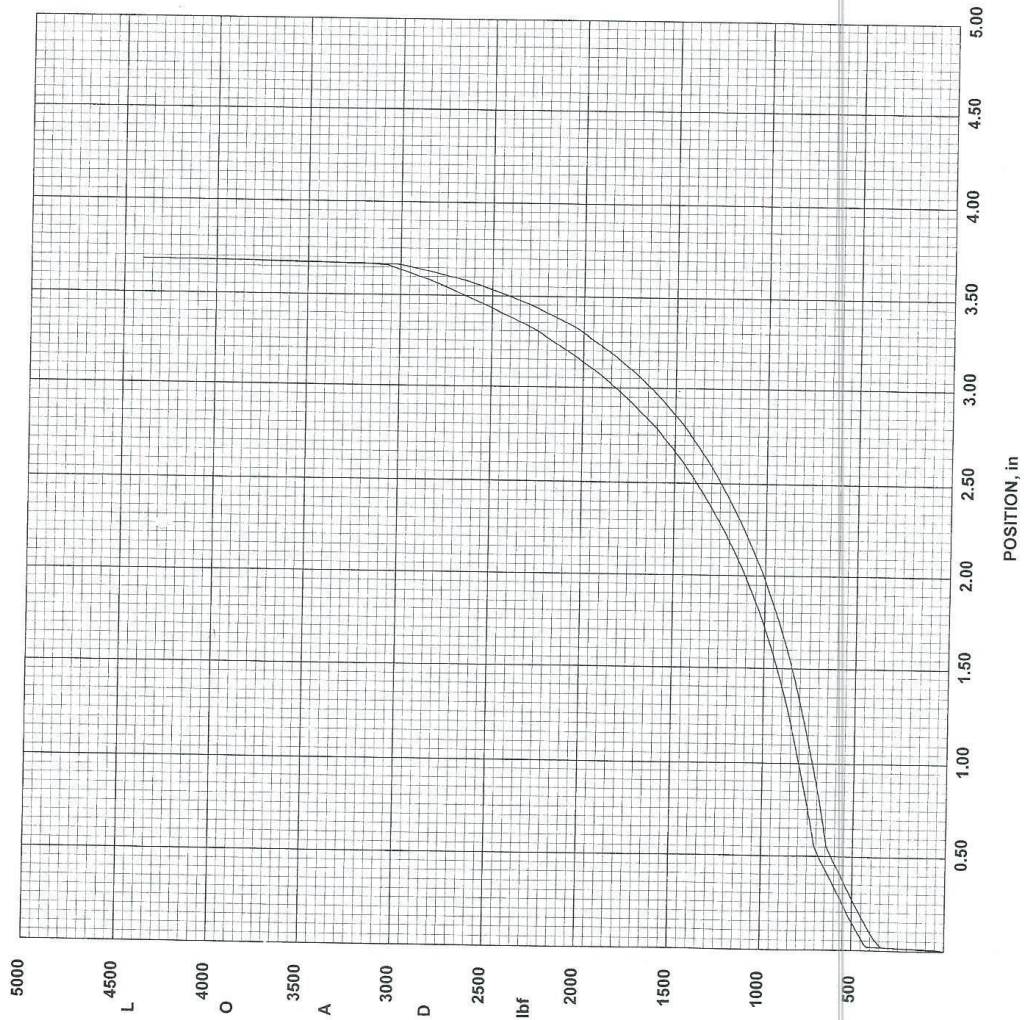
DOM:

410
300
197
110
197
110
3900
3200

SEP21-105

RETEST

10/17/2016



Test Failed

Oct 17, 2016 10:38:13 AM
SN: 312459 V7.02.11

Chart 3 aft left damper

FREEDOM OF INFORMATION ACT (FOIA) EXEMPTION NOTICE

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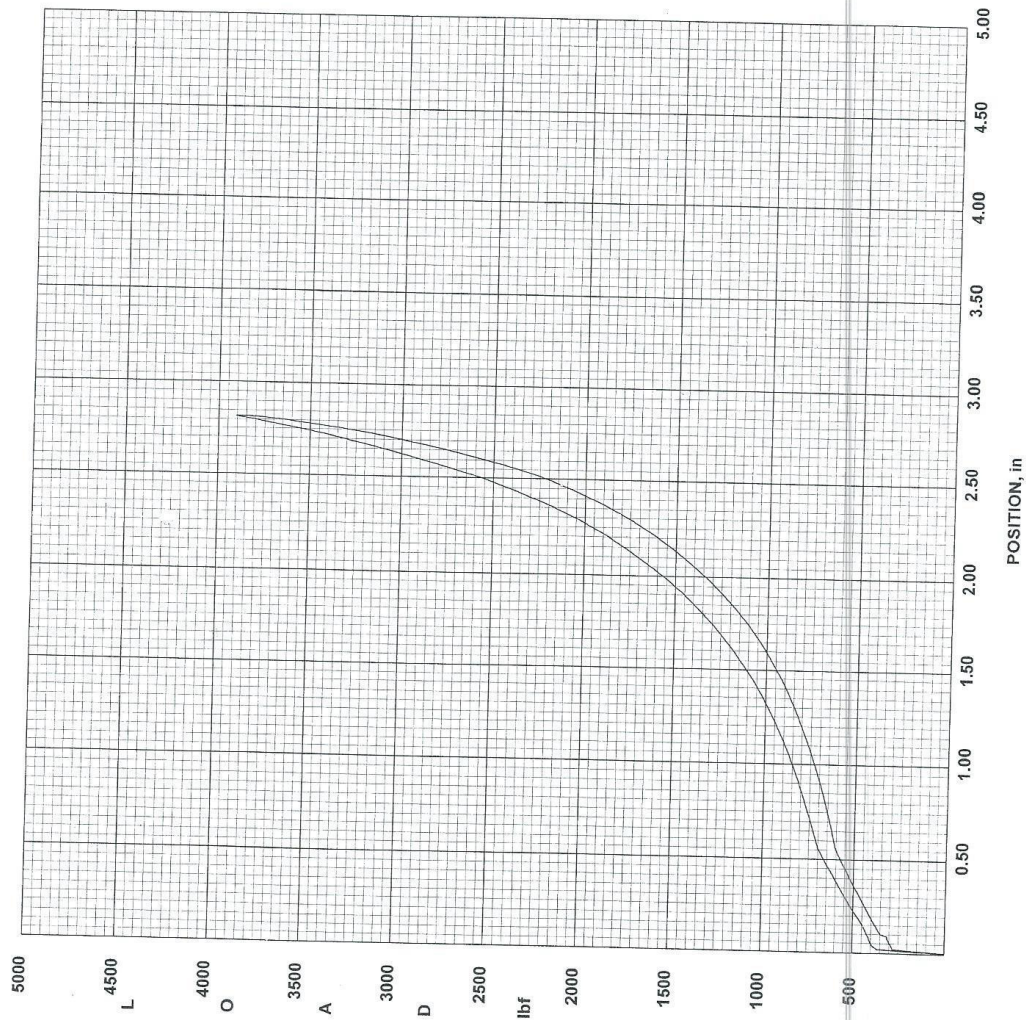
ECCN 99E991

151
Test

TRUATLANTIC MANUFACTURING, LLC.
1125 SPECTRA CT. KERNERSVILLE,
NC. 27284
ASSEMBLY AND TESTING DEPT.

269A3150 Damper Load Stroke Test

Test Setting Operator	Dampers -21, -25, -99 R.HANDY
Dash Number:	040 21
Serial Number:	A0438
Test:	10/17/16
Temp, F:	72
Yield Pt, lbf:	373
Yield, lbf:	3900
Position@814lbf+, in:	0.903
Position@814lbf-, in:	1.22
Ultimate Load, lbf:	3900
Ultimate Position, in:	2.82
Test Spec and Reqts:	SEPB 21-105
DOM:	RETEST 10/17/2016



Test Failed

Oct 17, 2016 10:29:52 AM
SN: 312459 V7.02.11

Chart 4 aft right damper

Assy. Copy

TRUATLANTIC MANUFACTURING, LLC.
1125 SPECTRA CT. KERNERSVILLE,
NC. 27284
ASSEMBLY AND TESTING DEPT.

269A3150 Damper Load Stroke Test

Test Setting
Operator
Dampers -21, -25, -99
R.HANDY

Dash Number: -821
Serial Number: A1402
Test: 10/12/16

Temp, F: 72
Yield Pt, lbf: 348
Yield, lbf: 3700

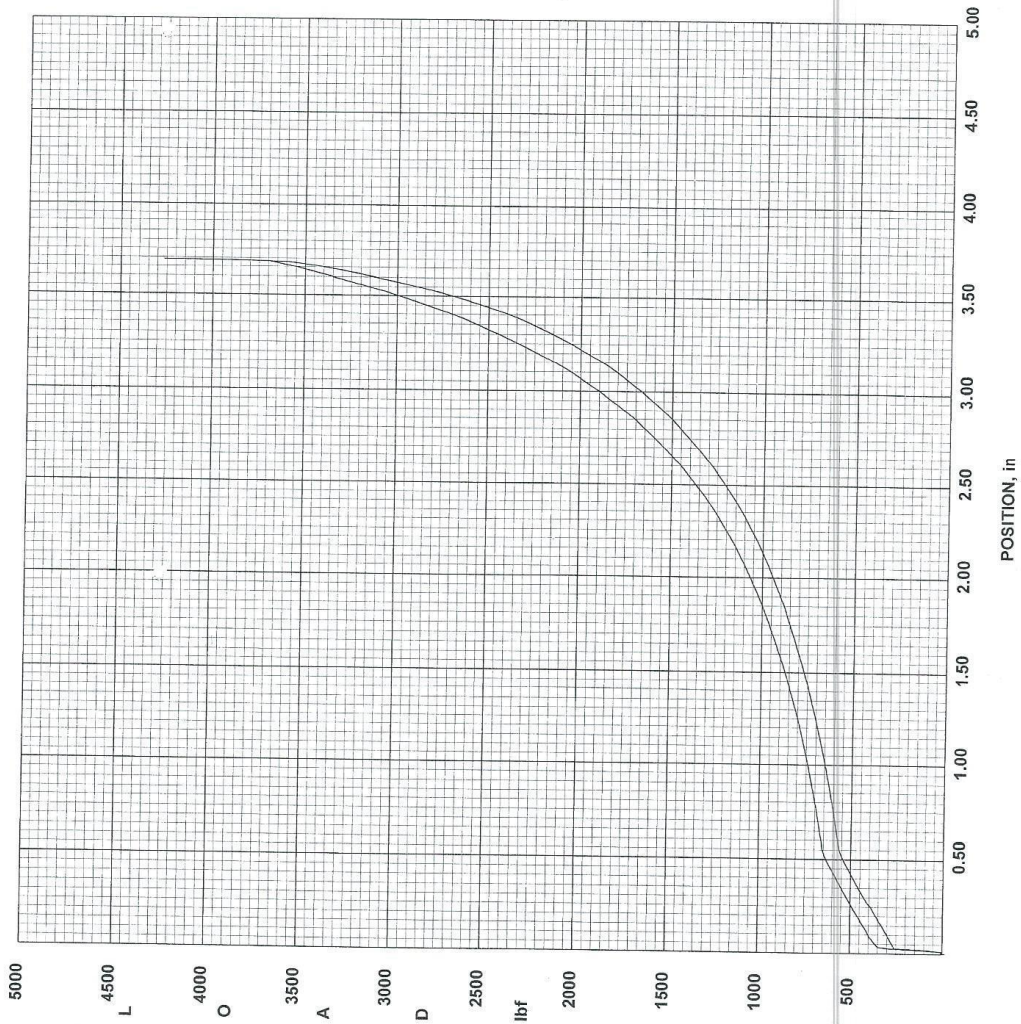
Position@814lbf+, in: 1.299
Position@814lbf-, in: 1.639

Ultimate Load, lbf: 3700
Ultimate Position, in: 3.68

Test Spec and Reqts: SEPB 21-105
DOM: 10/12/2016

410
300

1.97
1.10
1.97
1.10
3900
3200



Good

Oct 12 2016 11:13:14 AM
SN: 312459 V7.02.11

Chart 5 Accepted production aft damper.

Assy. Copy

TRUATLANTIC MANUFACTURING, LLC.
1322 SOUTH PARK DR. KERNERSVILLE,
NC. 27284

ASSEMBLY AND TESTING

269A3150 Damper Load Stroke Test

Test Setting	Dampers -19, -23, -
Operator	101 R.HANDY
Dash Number:	-819
Serial Number:	A1078
Test:	02/21/15
DOM:	2/21/2015
Temp. F:	73
Yield Pt. lbf:	74
Position@487lbf+, in:	1.734
Position@487lbf-, in:	1.974
Ultimate Load, lbf:	3090
Ultimate Position, in:	3.67
Test Spec and Reqs:	SEPB 21-105

145
234
233
163
3600
2900

Good

Feb 21, 2015 11:01:16 AM
SN: 312459 V7.02.11

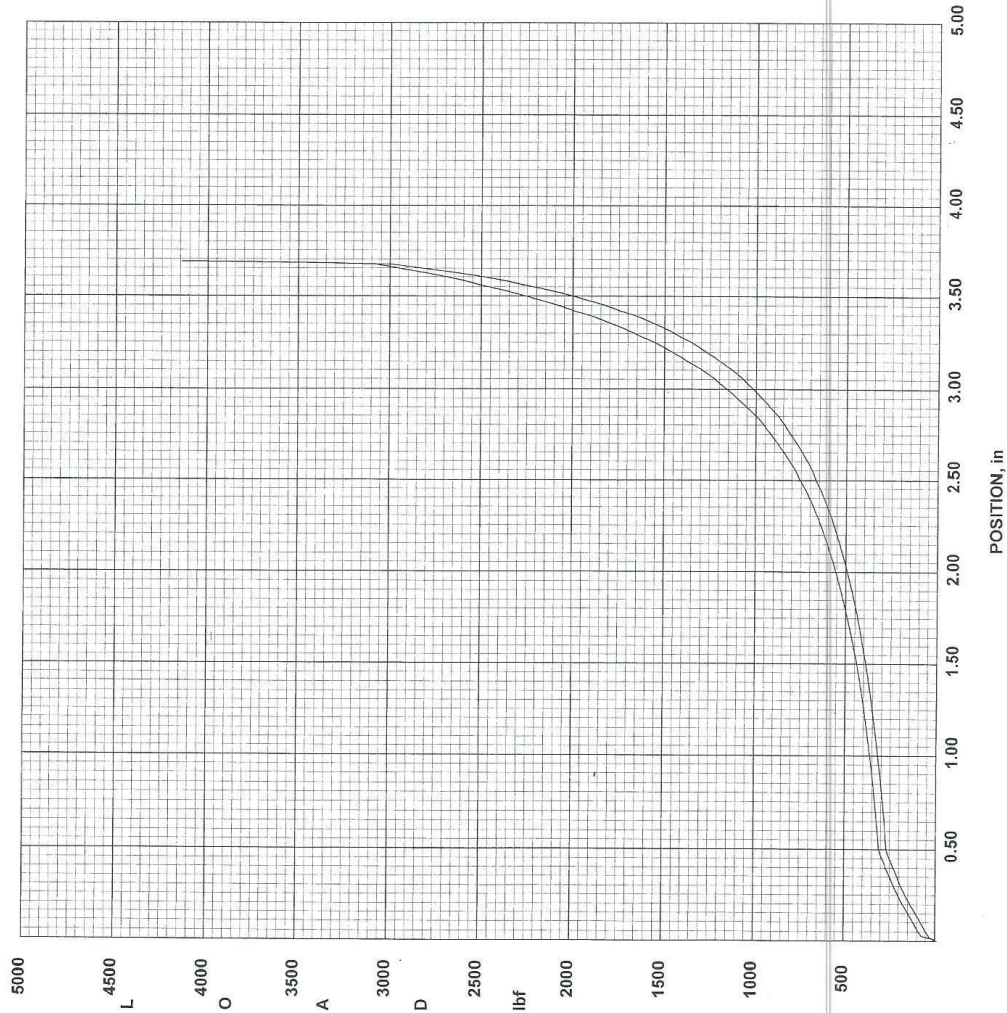


Chart 6 Accepted forward production damper

Inspector's Statement

Inspector: David Hintz,

- Date arrived in FSDO:
The dampers arrived at the FSDO (Flight Standards District Office) in Greensboro on 09/29/2016 and placed in my custody.
- Date inspection performed:

On October 17th 2016 I transported the Dampers to Tru Atlantic Manufacturing LLC located at [REDACTED] Kernersville, NC [REDACTED] I witnessed the testing of four landing dampers Part numbers 269A3150-19 Serial number A0450 and Serial Number A0442 and 269A3150- 21 Serial Number A0438 and Serial Number A0438. Upon arrival the technician unpacked and inspected the dampers for obvious damage or visible leaks. Once the initial inspection was completed the dust covers were removed from each of the damper sand another inspection was performed on the piston and seals. The pistons and the seals showed no signs of leaks or obvious damage. The technician noted marks on the right hand rear damper serial number A0438. The location of the marks was usually covered by the dust cover. The remaining three dampers showed no evidence of any damage. Once the visual inspections were completed the technician performed damper load stroke test on each damper. Each damper was tested twice. During the test no visible leaks were observed. The results of the tests indicated all dampers failed the load stroke test. Please refer to documents included as attachments to this document.

After completion of the testing, all dampers and dust covers were packaged and returned in my custody, to the Greensboro FSDO.

- Date shipped from FSDO: The dampers were shipped from the FSDO on 12/05/2016 an shipped to: Mr. Ron Dobbs
R&B Helicopters, Inc.
[REDACTED]
Calhoun, GA [REDACTED]
- Date received by addressee 12/07/2016

Aviation Safety Inspector: David M. Hintz

[REDACTED]