ERICKSON ENGINEERING RELEASE NOTICE

CONTROL NO.
ERN 2025-15913

CHANGE TO
S-64 TC ☒
STC ☐
N/A ☐

CLASSIFICATION
MAJOR ☐
TYPE 3 ☐
TYPE 2 ☐
TYPE 1 ☐
N/A ☒

DATA TYPE

NEW DRAWING	☐	AMENDMENT SHEET	☐
DRAWING REVISION	☐	OVERHAUL & REPAIR INSTRUCTIONS	☐
ADVANCED DOCUMENT CHANGE NOTICE	☐	DATA CHANGE REQUEST	☐
ENGINEERING REPORT	☐	TECHNICAL PUBLICATIONS RELEASE	☐
ENGINEERING SPECIFICATION	☒	CERTIFIED CAD MODEL	☐
ENGINEERING ORDER	☐	TOOL DESIGN CHANGE RECORD	☐

STATUS
PRODUCTION ☒
PROTOTYPE ☐
PRELIMINARY ☐
DRAFT ☐

EFFECTIVITY CODES
A INCORPORATE IMMEDIATELY - FLIGHT SAFETY -
B INCORPORATE AT NEXT O/H
C UPON DEPLETION OF PARTS
D OTHER (SEE DISPOSITION)

ENGINE ☐ 1E9 (JT12)
TC ☐ E15EA (JFTD12A)
PMA ☐

ERDO: N/A

DOCUMENT NO. \ REVISION \ TITLE

CONCERTO PROJECT: N/A

DAX PROJECT: N/A

8110-3 REQD

ES0084 \ REVISION J \ SUBSTANTIATION TEST REQUIREMENTS FOR ALTERNATE MANUFACTURING SOURCES OF TRANSMISSION GEARBOX ASSEMBLIES AND ESSENTIAL COMPONENETS — N

STC NUMBER: N/A

REQUESTING DOCUMENT(S): N/A

PRODUCTION ORDER: N/A

PART NUMBER	PART NAME	MODEL(S)	CODE

DESCRIPTION OF CHANGE \ WHY CHANGE WAS MADE \ IMPLEMENTATION INSTRUCTIONS:

REVISION J ADDS RAVE GEARS AS AN APPROVED SOURCE OF MANUFACTURE FOR THE PLANET PINION 1ND STAGE P/N 6435-20411.

THIS CHANGE APPRECIABLY AFFECTS: ☐ WEIGHT ☐ BALANCE ☐ STRUCTURAL STRENGTH ☐ RELIABILITY ☐ AIRWORTHINESS ☒ N/A

DISPOSITION OF PARTS ON HAND \ INSTRUCTIONS TO MATERIALS DEPT:

EFFECTIVE FOR ALL COMPONENTS MEETING REQUIREMENTS OF ES0084 REV. J.

SUBMIT FORM EAC5003 IF DATA AFFECTS ASB, SB, CSL OR ESA

LIFE LIMITED ITEM:

☐ YES, Life Limit: N/A ☒

STRUCTURES: _____

DOCUMENT NO.

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☐	☒	COMPONENT MRO MANAGER	☐	☐	OTHER:			

PREPARED BY DOUG MCCAULEY	2/4/2025
CONFIGURATION WLJ	
ENGINEERING SUPV.	02/07/2025
DOCUMENT CONTROL Gil Smith	2-7-25

FORM NO. 3-110-1 REV. 20

ERICKSON

EAC DOCUMENT: **ES0084**

TITLE: **SUBSTANTIATION TEST REQUIREMENTS FOR ALTERNATE MANUFACTURING SOURCES OF TRANSMISSION GEARBOX ASSEMBLIES AND ESSENTIAL COMPONENTS**

PREPARED BY: SIGNATURE ON FILE / _____
JAMES ROBERTSON DATE

APPROVED BY: SIGNATURE ON FILE / _____
BILLY JOHNSON DATE

APPROVED BY: SIGNATURE ON FILE / _____
K. DALE ROBERTS DATE

REV: J

DATE: 2-7-25

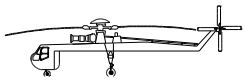
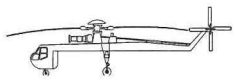
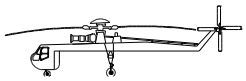


TABLE OF REVISIONS

REV	DESCRIPTION	BY	APPROVED	DATE
IR	Initial Release	J. ROBERTSON	KDR	2 Oct 07
A	Completely revised to simplify the format and more clearly delineate between gearbox assembly tests and essential component tests. Modified conservative test parameters, taking advances in gear manufacturing and inspection methods into consideration. Clarified areas for overhaul after essential component tests. Added approved vendor information. Note: Revision bars were not added to the document for Rev. A because they would have been so extensive so as to render them useless.	WLJ	KDR	16 Nov 09
B	Correction of an error from Rev. A in which the EAC overhaul manuals were inadvertently called out by their old Sikorsky names: SA4047-44 is now EAC 049 for E MGB SA4047-43 is now EAC 029 for IGB SA4047-46 is now EAC 028 for TGB	WLJ	AKB	8 Dec 09
C	Added Lower Housing P/N 6435-20522-103 to Tables 1 & 6.	WLJ	WLJ	1/25/11
D	Added 6435-20536-001 F Shaft Forging, pages 1 and 8 of 9	J. ROBERTSON	JR. AVGERIS	4/15/14



REV	DESCRIPTION	BY	APPROVED	DATE
E	Added Timken Aerospace Transmissions as an approved source of manufacture for Pinion Oil Pump P/N 6435-20125 and Gear Oil Pump P/N 6435-20126.	JMW	WLJ	9/4/2015
F	Add reference to SES 50654 in introduction. Add DER discretion allowance to section 3, 3.2.1 & 3.2.2 (essential component test requirements). Added Rave Gears as an approved source of manufacture for Input Bevel Gear 6435-20048. Updated horsepower and times in Table 2 and 4. Updated oil pump drive gears testing time to 10 hours in table 4.	DPM	WLJ	12/4/2019
G	Added Triumph Gear Systems as an approved source of manufacture for Sun Gear P/N 6435-20412.	JMW	WLJ	1/12/2022
H	Added Rave Gears as an approved source of manufacture for the Planet Pinion 2nd Stage P/N S1535-20057. Removed Pankl and replaced with Fountaintown Forge as the approved source of manufacture for the E Shaft Rotor Drive MGB, Forging P/N 6435-20078 & F Shaft Rotor Drive MGB, Forgings P/N's 6435-20536-001, 65351-11255. Removed Timken Aerospace Transmission and replaced with PCX Aerostructures for multiple part numbers in Table 1.	DPM	WLJ	11/18/2024
J	Added Rave Gears as an approved source of manufacture for the Planet Pinion 1st Stage P/N 6435-20411	DPM	WLJ	02/07/2025



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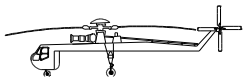

REFERENCES

1) SES 65554, Rev. 5, 8/13/86: Transmission System, Component Assemblies and Parts, Alternate Fabrication Sources, Substantiation Test Requirements, Detail Specification For.

2) EAC 049, E Main Gearbox Overhaul Manual

3) EAC001, F Main Gearbox Overhaul Manual

4) E23501, Test Cell Procedure for Main Gearbox Production Acceptance Test

5) EAC 029, Intermediate Gearbox Overhaul Manual

6) EAC 028, Tail Gearbox Overhaul Manual

7) SES 50654, Rev. 11, 1/9/07: Gear Requirements General Specification For

1. SCOPE

This specification establishes the procedure by which Erickson Air Crane (EAC) shall test S64E & F transmission gearbox assemblies and essential components manufactured by new sources, in order to approve those sources. Table 1 lists all the assemblies and components that are governed by this specification, and sources that are currently approved to manufacture them. When a test is successfully completed and the results are satisfactory per the requirements herein, a revision shall be made to add the subject source to Table 1 for the associated assembly or component.

All parts subject to ES0084 shall be manufactured per the requirements of SES 50654, rev. 8 or later.

TABLE 1: LIST OF AFFECTED PARTS & APPROVED SOURCES OF MANUFACTURE

Part Number	Part Name	Approved Sources of Manufacture	See Section
Gearbox Assemblies Subject to High Power Test			
6435-20400	E Main Gearbox Assembly	EAC	2
6435-20500	F Main Gearbox Assembly	EAC	2
6435-66400	Intermediate Gearbox Assembly	EAC	2
6435-66500	Tail Rotor Gearbox Assembly	EAC	2
Essential Components Subject to Power Test			
6435-20048	Input Bevel Gear	Rave Gears	3
6435-20068	Pinion Bevel 1st Stage Input	None	3
6435-20457	Gear Pinion 2nd Stage Input	None	3
6435-20078	E Shaft Rotor Drive MGB, Detail Part	Pankl Aerospace	3
6435-20411	Planet Pinion 1st Stage	PCX Aerostructures, Rave Gears	3
6435-20412	Sun Gear 1st Stage	Caratron Industries, Triumph Gear Systems	3
6435-20413	Ring Gear	PCX Aerostructures	3
6435-20414	Sun Gear 2nd Stage	PCX Aerostructures	3
6435-20456	Main Bevel Gear	None	3
S1535-20057	Planet Pinion 2nd Stage	PCX Aerostructures, Triumph Gear Sys. Rave Gears	3
6435-20536	F Shaft Rotor Drive MGB, Detail Part	Pankl Aerospace	3
6435-20097	Pinion T.T.O.	None	3
6435-20125	Pinion Oil Pump	PCX Aerostructures	3
6435-20126	Gear Oil Pump	PCX Aerostructures	3
6435-66402	Input Bevel Gear (IGB)	None	3
6435-66407	Output Bevel Gear (IGB)	None	3
6435-66412	Idler Gear (IGB)	None	3
6435-66502	Input Shaft Gear (TGB)	PCX Aerostructures	3
6435-66507	Bevel Gear (TGB)	None	3
Essential Components Subject to Material and Dimensional Test			
6435-20011	Int. Housing Liner & Stud Assy	None	4
6435-20017	Upper Housing Liner & Stud Assy	PCX Aerostructures	4
6435-20024	Rear Cover Liner & Stud Assembly	Triumph Gear Systems	4
6435-20026	Support Stud Assy	PCX Aerostructures, Arnold Engineering	4
6435-20035	Cam Assy, Input Free Wheel Unit	None	4
6435-20053	Housing Free Wheel Unit	Precision Gear	4
6435-20055	Retainer Roller Input Free Wheel Unit	PCX Aerostructures	4
6435-20078	E Shaft Rotor Drive MGB, Forging	Fountaintown Forge	4
6435-20087	Lower Housing Forging	None	4
6435-20099	Gear Freewheel Unit Hsg Tail Takeoff	Precision Gear	4
6435-20268	Cam Assy, Free Wheel Unit Tail Takeoff	None	4
6435-20269	Roller Retainer Tail Takeoff	None	4
6435-20522-103	Lower Housing (-103 only)	EAC	4
6435-66409	Center Hsg Liner & Stud Assy (IGB)	PCX Aerostructures	4
65351-11255	F Shaft Rotor Drive MGB, Forging	Fountaintown Forge	4
6435-20536-001	F Shaft Rotor Drive MGB, Forging	Fountaintown Forge	4
65358-07046	Shaft, Output Forging (TGB)	PCX Aerostructures	4
65358-07053	Center Housing (TGB)	PCX Aerostructures	4

2. GEARBOX ASSEMBLIES SUBJECT TO HIGH POWER TEST

This section contains the test requirements that must be met before a new manufacturing source is approved to manufacture and assemble entire gearbox assemblies. The requirements include a production acceptance test (2.1), a high-power test (2.2), and an interchangeability test (2.3).

2.1. FIRST ARTICLE GEARBOX PRODUCTION ACCEPTANCE TEST

The first gearbox assembly manufactured by an alternate manufacturing source shall be subject to the standard EAC Acceptance Test Procedure (ATP) as shown below.

Main Gearbox	E23501 (Under Load in Test Cell)
Intermediate Gearbox	No-Load Test in Overhaul Manual EAC 029
Tail Gearbox	No-Load Test in Overhaul Manual EAC 028

2.2. FIRST ARTICLE GEARBOX HIGH POWER TEST

2.2.1. GENERAL

Upon successful completion of the production acceptance test specified in section 2.1 the gearbox assembly shall be subject to a high-power test for the time and power spectra stated in section 2.2.2 (MGB) or 2.2.3 (IGB and TGB).

2.2.2. MAIN GEARBOX

The main gearbox assembly will be subject to a twenty-five (25) hour high power test subdivided into fifty cycles of thirty minutes each at the power spectra described in Table 2.

Model/Part Number	Single Input HP ±50	Total HP ±100	Tail Output HP ±50	Duration– Min ±1
S64E 6435-20400	2500	5000	800	20
	1250	2500	300	10
S64F 6435-20500	3000	6000	1100	20
	1250	2500	300	10

2.2.3. INTERMEDIATE AND TAIL GEARBOXES

The intermediate and tail gearbox assemblies will be subject to a twenty-five (25) hour high power test subdivided in to fifty cycles of thirty minutes each at the power spectra described in Table 3.

TABLE 3: POWER SPECTRA – INTERMEDIATE AND TAIL GEARBOX ASSEMBLIES HIGH POWER TEST

Model/Part Number	Tail Input – HP ±50	Duration– Min ±1
S64E & S64F 6435-66400 (Intermediate Gearbox)	1100	24
	300	6
S64E & S64F 6435-66500 (Tail Gearbox)	1100	24
	300	6

2.2.4. HIGH POWER POST TEST INSPECTION

Upon completion of the high-power test specified above the gearbox shall be disassembled and inspected in accordance with EAC's standard overhaul procedure. The results shall be reported to engineering who will determine the acceptability of the gearbox.

2.2.5. HIGH POWER TEST COMPLETION

If the gearbox is deemed acceptable, it shall undergo normal overhaul assembly and test procedures but can be assigned to production or spare usage only after the successful test from section 2.3 is complete. If rejected see section 5.1. The component log card shall record the appropriate historical data.

2.3. SECOND ARTICLE GEARBOX INTERCHANGEABILITY TEST

2.3.1. GENERAL

The second gearbox assembly provided by an alternate manufacturing source shall be subject to an interchangeability test. Detailed components from the second gearbox shall be interchanged with components from a gearbox manufactured by an approved manufacturing source to determine the interchangeability of bevel and spur gears, planetary gearing, housings, shafting, and freewheeling components. The exact part numbers to be interchanged shall be dependent upon assembly variations and shall be specified by EAC. The two gearboxes shall be subject to EAC's acceptance test procedure specified in 2.1 except that the duration of the test run shall be (5) hours. The duration of the test at each power level specified therein shall be in the same proportion as that specified for the normal acceptance test procedure.

2.3.2. SECOND ARTICLE POST TEST INSPECTION

Upon completion of the interchangeability test specified in 2.3.1 the (2) gearboxes shall be disassembled and inspected in accordance with EAC's standard overhaul procedure. The results shall be reported to engineering who will determine the acceptability of the gearboxes.

2.3.3. SECOND ARTICLE TEST COMPLETION

If the gearboxes are deemed acceptable, they shall undergo normal overhaul assembly and test procedures and can be assigned to production or spare usage. If rejected see section 5.1. The component log card shall record the appropriate historical data.

Upon acceptance of all 3 gearboxes, the manufacturing source is approved.

3. ESSENTIAL COMPONENTS SUBJECT TO POWER TEST

In the event of a change in manufacturing source of any essential component listed in Table 4 (as opposed to an entire gearbox), the following test requirements must be met before the manufacturing source is approved to manufacture the subject component for use on the aircraft. The requirements include a production acceptance test (3.1), and a power test (3.2). These testing requirements are subject to modification on an individual basis at discretion of the qualified DER.

Special Note: All spiral bevel gears tested to the requirements of section 3, and all subsequent production gears that are used based on these tests, must be inspected for tooth profile conformity to the master gear using the Direct Digital Measurement method as explained in SES 50564 section 4.2, Rev 5 or later, or a superseding ES spec. The inspection is to be done by the manufacturer.

If any spiral bevel gear (test or production) is inspected using an alternate method, such as the rolling contact pattern method, the test parameters will revert to the "high power test" of section 2, using the higher horsepower requirements designated therein.

3.1. ESSENTIAL COMPONENT PRODUCTION ACCEPTANCE TEST

The first essential component in Table 4 manufactured by an alternate manufacturing source shall be assembled into a gearbox from an approved vendor and subject to the standard EAC Acceptance Test Procedure (ATP) as shown below.

Main Gearbox	E23501 (Under Load in Test Cell)
Intermediate Gearbox	No-Load Test in Overhaul Manual EAC 029
Tail Gearbox	No-Load Test in Overhaul Manual EAC 028

3.2. ESSENTIAL COMPONENT POWER TEST

3.2.1. GENERAL

Upon successful completion of the tests specified in section 3.1 the gearbox with the essential component shall be subject to a ten (10) to twenty-five (25) hour test subdivided in to cycles of thirty minutes each at the power spectra described in Table 4. The total duration of the test is to be determined by EAC Engineering.

3.2.2. POWER POST TEST INSPECTION

Upon completion of the power test, the limited sections of the gearbox listed in Table 5 shall be disassembled and inspected in accordance with EAC's standard overhaul procedure. Note: The depth of the disassembly and inspection listed in sec. 3.2.2 and Table 5 can be scaled down at the discretion of EAC engineering.

For the overhaul areas listed in Table 5, any bearings, housings (where bores contact the associated bearings), shafts, fasteners, bearing nuts, seals or other major components associated with the specified areas in A-G shall be inspected. It is not required to inspect oil jets, shields, inspection port covers, plugs, hoses, tubes, non-affected areas of the housings, or other similar non-affected components.

In addition to the limited sections listed, all general gearbox checks shall be done, such as chip detectors, oil filters, etc. The results shall be reported to engineering who will determine the acceptability of the component.

3.2.3. POWER TEST COMPLETION

If the component is deemed acceptable, the manufacturing source is approved. The component shall undergo normal overhaul assembly and test procedures and be assigned to production or spare usage. If rejected see section 5.1. The component log card shall record the appropriate historical data.

TABLE 4: POWER SPECTRA - ESSENTIAL COMPONENT POWER TEST

Section	Part Number	Part Name	Test HP	30 min Cycle (±1)
MGB Input Sections	6435-20048	Input Bevel Gear	High: 3000 Low: 1250 (Single Input±50)	High: 20 Low: 10
	6435-20068	Pinion Bevel 1st Stage Input		
	6435-20457	Gear Pinion 2nd Stage Input		
MGB Combined Power Section	6435-20078	E Shaft Rotor Drive MGB, Detail Part	High: 6000 Low: 2500 (Dual Input±100)	High: 20 Low: 10
	6435-20411	Planet Pinion 1st Stage		
	6435-20412	Sun Gear 1st Stage		
	6435-20413	Ring Gear		
	6435-20414	Sun Gear 2nd Stage		
	6435-20456	Main Bevel Gear		
	S1535-20057	Planet Pinion 2nd Stage		
	6435-20536	F Shaft Rotor Drive MGB, Detail Part		
MGB Oil Pump Section	6435-20125*	Pinion Oil Pump	Not Specified*	Cycling not required
	6435-20126*	Gear Oil Pump		
TTO/IGB/TGB Sections	6435-20097**	Pinion T.T.O.	High: 500 Low: 300 (±25)	High: 24 Low: 6
	6435-66402	Input Bevel Gear (IGB)		
	6435-66407	Output Bevel Gear (IGB)		
	6435-66412	Idler Gear (IGB)		
	6435-66502	Input Shaft Gear (TGB)		
	6435-66507	Bevel Gear (TGB)		

*The only requirement for the oil pump gears is that they be tested for 10 hours at the normal RPM while oil is being pumped (the gearbox does not have to be under a load).

** MGB input HP for the TTO pinion test is unimportant. But the TTO pinion must have a torque reactor applied to its output to react the stated HP. If this cannot be done, a special test must be developed for testing on an aircraft.

TABLE 5: LIMITED AREAS TO INSPECT AFTER ESSENTIAL COMPONENT POWER TEST

Section	Part Number Tested	Part Name	Areas to Inspect
MGB Input Sections	65951-11359	Input Triplex Bearing	A
	6435-20048	Input Bevel Gear	A
	6435-20068	Pinion Bevel 1st Stage Input	A
	6435-20457	Gear Pinion 2nd Stage Input	B
MGB Combined Power Section	6435-20078	E Shaft Rotor Drive MGB, Detail Part	C
	6435-20411	Planet Pinion 1st Stage	C
	6435-20412	Sun Gear 1st Stage	C
	6435-20413	Ring Gear	C
	6435-20414	Sun Gear 2nd Stage	C
	6435-20456	Main Bevel Gear	D
	S1535-20057	Planet Pinion 2nd Stage	C
	6435-20536	F Shaft Rotor Drive MGB, Detail Part	C
MGB Oil Pump Section	6435-20125	Pinion Oil Pump	E
	6435-20126	Gear Oil Pump	E
TTO Section	6435-20097	Pinion T.T.O.	F
IGB/TGB Sections	6435-66402	Input Bevel Gear (IGB)	G
	6435-66407	Output Bevel Gear (IGB)	G
	6435-66412	Idler Gear (IGB)	G
	6435-66502	Input Shaft Gear (TGB)	G
	6435-66507	Bevel Gear (TGB)	G

A: -Entire input assembly

B: -Upper housing
-Freewheeling Unit
- Main bevel gear, shaft, and support housing
-2nd stage input pinion and housing
-1st stage sun gear

C: -Upper housing
-Main rotor shaft
-Both planetary assemblies including sun gears
-Ring gear
-Stud support housing and lower housing

D: -Upper housing
- Main bevel gear, shaft, and support housing
-2nd stage input pinions and associated housings
-TTO gear and associated housing (not necessary to overhaul rear cover or accessory freewheeling unit)
-1st stage sun gear

E: -Oil pump, both gears, and both shafts

F: -Upper housing
- Main bevel gear, shaft, and support housing
-TTO gear and associated housings and bearings, to include the accessory freewheeling unit
-Rear cover in the area of the TTO bearings and mating accessory gears
-Mating accessory gears

G: -Entire IGB or TGB Assy (not to include pitch change mechanism)

4. ESSENTIAL COMPONENTS SUBJECT TO MATERIAL AND DIMENSIONAL TEST

The first article of individual gearbox essential components listed in Table 6 manufactured by an unapproved alternate manufacturing source shall be subject to requirement 1) or 2) as specified in the table. The requirements are:

1) EAC is to qualify these castings and forgings by equal or superior quality compared to a qualified source, as determined by dimensional and metallurgical evaluation.
2) EAC is to qualify these essential components by equal or superior quality compared to a qualified source or the component drawing, as determined by dimensional inspection and either a) Metallurgical evaluation or b) Certification documents.

These tests shall be carried out by the quality department, who will determine the acceptability of the component. Engineering may assist upon request. Upon completion of all substantiation testing and the approval of the alternate manufacturing source, the essential components shall undergo normal overhaul assembly and test procedures and be assigned to production or spare usage. If rejected, notify engineering and see section 5.1.

TABLE 6: ESSENTIAL COMPONENTS SUBJECT TO MATERIAL & DIMENSIONAL TEST

Part Number	Part Name	Requirement
6435-20011	Int. Housing Liner & Stud Assy	2
6435-20017	Upper Housing Liner & Stud Assy	2
6435-20024	Rear Cover Liner & Stud Assembly	2
6435-20026	Support Stud Assy	2
6435-20035	Cam Assy, Input Free Wheel Unit	2
6435-20053	Housing Free Wheel Unit	2
6435-20055	Retainer Roller Input Free Wheel Unit	2
6435-20078	E Shaft Rotor Drive MGB, Forging	1
6435-20087	Lower Housing Forging	1
6435-20099	Gear Freewheel Unit Hsg Tail Takeoff	2
6435-20268	Cam Assy, Free Wheel Unit Tail Takeoff	2
6435-20269	Roller Retainer Tail Takeoff	2
6435-20522-103	Lower Housing (-103 only)	2
6435-66409	Center Hsg Liner & Stud Assy (IGB)	2
65351-11255	F Shaft Rotor Drive MGB, Forging	1
6435-20536-001	F Shaft Rotor Drive MGB, Forging	1
65358-07046	Shaft, Output Forging (TGB)	1
65358-07053	Center Housing (TGB)	2

5. NOTES

5.1. FAILURE, REJECTION AND RETEST

In the case of gearbox assembly and essential component power testing, failure may be indicated by wear, cracking, unusual tooth contact patterns, contaminants or metal chips in the oil, excess heat production, or other indications. It is left to the cognizant engineering representative to evaluate all the findings from the gearbox and determine if the amount of damage found, if any, is appropriate for the amount of testing that was performed.

When an assembly or component listed in this specification fails any of the substantiation tests, the item shall be rejected. Rejected assemblies or components shall be replaced or reworked to engineering's satisfaction to correct the defect, after which all appropriate tests shall be repeated.

5.2. ALTERNATE MANUFACTURING SOURCE

The term alternate manufacturing source refers to any subcontractor manufacturing transmission gearbox assemblies and/or essential components other than the ones who manufactured the parts originally accepted through Sikorsky qualification testing, and other than ones who have passed subsequent substantiation tests in accordance with this specification, SES 65554, or an equivalent method.

5.3. "STANDARD OVERHAUL PROCEDURE" AND "NORMAL OVERHAUL ASSEMBLY AND TEST PROCEDURES"

When these phrases are used, they refer to the specified procedures in the following EAC overhaul manuals:

Main Gearbox E Model	EAC 049
Main Gearbox F Model	EAC001
Intermediate Gearbox E and F Models	EAC 029
Tail Gearbox E and F Models	EAC 028

They include all wear inspections, damage inspections, dimensional inspections, as well as fluorescent penetrant and magnetic particle inspections.