ERICKSON ENGINEERING RELEASE NOTICE

CONTROL NO. ERN 2019-14421

CHANGE TO		CLASSIFICATION		DATA TYPE				STATUS	
TC	☐	MAJOR	☐	NEW DRAWING	☐	AMENDMENT SHEET	☐	PRODUCTION	☒
STC	☐	TYPE 3	☐	DRAWING REVISION	☐	OVERHAUL & REPAIR INSTRUCTIONS	☐	PROTOTYPE	☐
N/A	☒	TYPE 2	☐	ADVANCED DOCUMENT CHANGE NOTICE	☐	DATA CHANGE REQUEST	☐	PRELIMINARY	☐
		TYPE 1	☐	ENGINEERING REPORT	☐	TECHNICAL PUBLICATIONS RELEASE	☐	DRAFT	☐
		N/A	☒	ENGINEERING SPECIFICATION	☒	CERTIFIED CAD MODEL	☐		
				ENGINEERING ORDER	☐	TOOL DESIGN CHANGE RECORD	☐		

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)

DAX ERDO: N/A

DOCUMENT NO. \ REVISION \ TITLE

CONCERTO PROJECT: N/A

DAX PROJECT: IN-7-01-0059

ES2001 \ REV. G \ IN-PROCESS FUNCTIONS FOR ERICKSON PMA OF BELL PRODUCTS (PMA)

8110-3 REQD: N

STC NUMBER: N/A

REQUESTING DOCUMENT(S): N/A

PRODUCTION ORDER: N/A

PART NUMBER	PART NAME	MODEL(S)	CODE
N/A			

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

ES2001, Rev. G:

- Updates BPS 4075, MPI to Rev. L
- Updates BPS 4304, Nitriding to Rev. D
- Updates BPS 4445, Roll Threading to Rev. B
- Updates BPS 4467, Hardness to Rev. D
- Adds BPS 4387, Hard Anodize and BPS 4578, Superfinishing

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

DISPOSITION OF PARTS ON HAND \ INSTRUCTIONS TO MATERIALS DEPT:

N/A

SERVICE BULLETIN ACTION REQ'D:

☐ YES: N/A ☒

LIFE LIMITED ITEM:

☐ YES, Life Limit: N/A ☒

STRUCTURES: _____

DOCUMENT NO.

DISTRIBUTION LIST: (DESIGNATE RECIPIENTS) OR **STANDARD DISTRIBUTION:** ☐

DATA COPY	FORM COPY		DATA COPY	FORM COPY		DATA COPY	FORM COPY	
☒	☐	CONFIG. MANAGER	☐	☒	DESIGN & DRAFTING MGR	☐	☒	ORIGINATOR
☐	☐	6 MONTH SUBMITTAL	☐	☒	DIRECTOR OF ENGINEERING	☐	☒	STRUCTURES MANAGER
☐	☐	ACCOUNTABLE MGR-CERTIFICATION COMPLIANCE	☐	☐	FIELD MAINTENANCE	☐	☒	QUALITY
☐	☐	AIRCRAFT MFG MANAGER	☐	☒	MFG. ENGINEERING	☐	☐	TECHNICAL PUBLICATIONS
☐	☐	CHIEF ENGINEER	☐	☒	PROCUREMENT MANAGER	☐	☐	TOOLING
☐	☐	COMPONENT REPAIR & OVERHAUL MANAGER	☐	☒	PRODUCTION PLANNING & CONTROL MGR			
☐	☒	CUST. TECH. SUPT MGR	☐	☒	OTHER: Bill Stiger, Eric Jones			

PREPARED BY: DAVID G. MILLER	6/11/19
CONFIGURATION: J.J.	
ENGINEERING SUPV.	6-14-19
DOCUMENT CONTROL	10-28-19

FORM NO. 3-110-1 REV. 17

ERICKSON SPECIFICATION: **ES2001**

TITLE: **IN-PROCESS FUNCTIONS FOR ERICKSON PMA OF BELL PRODUCTS**

PREPARED BY: SIGNATURE ON FILE

_____/_____

DAVID G. MILLER **DATE**
LIAISON SPECIALIST

REVIEWED BY: SIGNATURE ON FILE

_____/_____

JR AVGERIS **DATE**
STRUCTURES MANAGER

APPROVED BY: SIGNATURE ON FILE

_____/_____

WILLIAM JOHNSON **DATE**
DIRECTOR OF ENGINEERING

REV: G

DATE: 10-14-19

TABLE OF CONTENTS

TABLE OF REVISIONS

REV	DESCRIPTION	BY	APPROVED	DATE
IR	INITIAL RELEASE	D.G.MILLER	WLJ	12/12/16
A	1. Section 1, par. 1: Added that ES2001 will be indicated on Erickson PMA drawings when it applies. 2. Section 1, par. 2: Removed substitution of "Erickson" in place of "Bell". 3. Section 1: Added Bell drawing substantiation tests note. 4. Section 2, intro: Added substitution of "Erickson" in place of "Bell" to the DR and QS definitions. 5. Section 2: Revised definition of the CC category entirely. 6. Section 2, intro: Added Bell internal instances N/A to PMA designs. 7. Section 2: Revised presentation so that tables span entire page width. 8. Section 2: Revised column 3 table headers to be "Bell In-Process Functions". WAS: Subject 9. Section 2: For all BPS, revised most column 3 listings to provide greater description of Bell function. 10. Section 2, BPS 4006: Added par. 5.1.1.1, testing of vapor degreaser 11. Section 2, BPS 4140: par. I.4.2.10.2: Revised Cat. to QS. WAS: CC 12. Section 3, BPS 4140, Master Heat Treat Card Approval: Added the additional Master Heat Treat Card instances.	D.G.MILLER	WLJ	1/18/17
B	1. Section 1: Removed "providing certain data" from paragraph 1. 2. Section 2: Revised the last sentence of CC category definition. WAS: "**When** *Bell approve deviations* is listed…as CC, **then** the process…" 3. Section 2: BPS 4050, 4.2.8.1: Relocated *Fatigue Control N/A* note to be within the Bell In-Process Functions cell for the paragraph. 4. Section 2: BPS 4075, 3.2: Revised to be Cat.: QS. WAS: CC 5. Section 2: BPS 4092, 3.4.2: Separated par. 1.1.2 to be its own row. Revised to be Cat.: QS. WAS: CC 6. Section 2: BPS 4140, Table 6, Note (2): Revised to be Cat.: DR. WAS: CC (cont'd on next page)	D.G.MILLER	JR AVGERIS	2/23/17

REV	DESCRIPTION	BY	APPROVED	DATE
	(Rev. B - cont'd) 7. Added to Section 2: 47-947-101, 299-947-068, BPS 4001, BPS 4007, BPS 4012, BPS 4017, BPS 4084, BPS 4089, BPS 4110, BPS 4138, BPS 4139, BPS 4182, BPS 4304, BPS 4310, BPS 4312, BPS 4343, BPS 4357, BPS 4384, BPS 4389, BPS 4403, BPS 4409, BPS 4416, BPS 4436, BPS 4453, BPS 4465, BPS 4555, BPS 4583, LTP 1024 8. Section 2: Combined redundant BPS title and table header for all specification tables. 9. Section 3: BPS 4140, Table 1: a. Revised first Action to be "**Ensure** that the…" WAS: Verify. Also added statement to enlist the support of processor, met lab and/or Engineering as required. b. Added Erickson Form No. 7030 to Erickson PMA text. c. Highlighted with **bold** text the differences in Erickson PMA text as compared to Original Bell. d. Combined redundant BPS number and table header. e. Added table number for the Master Heat Treat Card Approval table (table no. 1). 10. Section 3: Added BPS 4140, Table 2: Thickness in Excess of Table 6 - Low Alloy 11. Added to Section 3: BPS 4017, BPS 4304, BPS 4409, LTP 1024	(cont'd)	(cont'd)	
C	1. Section 2: BPS 4140, Table 19, Note (3) and V.4.2.2: Revised to be Cat.: DR. WAS: CC 2. Added to Section 2: BPS 4162, BPS 4335, BPS 4352, BPS 4362, BPS 4424, BPS 4426, BPS 4458, BPS 4464 3. Section 3: Added BPS 4140, Table 3: H-11/H-12 Steel Heat Treat Rework 4. Added to Section 3: BPS 4458	D.G.MILLER	J.JOHNSON	4/19/17
D	1. Section 2: Revised to be Cat. QS. WAS: CC a. BPS 4006, 4.9, 6.1.7.1.2 and 6.1.7.2.2 b. BPS 4089, 4.2.5.2, 4.2.5.3, 4.2.5.4.4.(d) and 4.2.13.1 c. BPS 4092, 4.3, 5.3.1 Note 2 and 5.3.2 Note 2 d. BPS 4140, I.4.2.4.5 and I.4.2.7 e. BPS 4409, 5.8.1, *If intensity varies…* (cont'd on next page)	D.G.MILLER	J.JOHNSON	9/19/17

REV	DESCRIPTION	BY	APPROVED	DATE
	(Rev. D - cont'd) 2. Section 2: BPS 4017: Added 9.3.1.1 3. Section 2: BPS 4312: Added 4.5 4. Section 2: BPS 4416: Revised entirely 5. Added to Section 2: BPS 4163, BPS 4212, BPS 4309, BPS 4326, BPS 4398, BPS 4456, BPS 4462, BPS 4470, LTP 1032 6. Section 3: BPS 4017, Table 1: Added 9.3.1.1 as an additional instance 7. Added to Section 3: BPS 4163, BPS 4212	(cont'd)	(cont'd)	
E	1. Section 2: Updated BPS 4017 to Rev. J. WAS: G a. Added eight new instances; paragraphs: 2.2 4.2.2.2 6.4.1.1.1 4.1.3.6 Note b 4.2.7.1 9.3.1.7 4.2.2 Note 4.2.7.2 b. Removed paragraph 4.2.3.2 2. Updated BPS 4050 to Rev. AG. WAS: AF a. Added 2.8 b. Reidentified 4.2.8.1 to be 4.2.14.1 3. Section 2: BPS 4140, VII.4.2.1: Revised to be Cat.: DR. WAS: CC 4. Section 2: BPS 4163, par's 4.2.2, 4.2.2.3 and 4.6: Revised to be Cat.: DR. WAS: QS 5. Section 2: BPS 4304 a. 4.1.12.1.2: Clarified to be for unground areas only WAS: "Bell approve… Card **for each part number**" b. Added: 5.1.9.(c) c. 6.1.6, 6.1.3 and 5.2.3.4: Revised to be Cat.: QS WAS: DR 6. Section 2: Updated BPS 4357 to Rev. K. WAS: J-1 a. Added par's III.5.1.b and III.5.1.c b. Added 2 instances from par. IV.4.5.2 c. Added IV.4.5.3, IV.4.5.4, IV.4.5.5 and IV.4.5.6 d. Added V.4.2 7. Section 2: Updated BPS 4362 to Rev. C. WAS: B-1 8. Section 2: Updated BPS 4403 to Rev. J. WAS: H a. Added par. 5.1.6 Notes 9. Added to Section 2: BPS 4018, BPS 4020, BPS 4300, BPS 4367, BPS 4419, BPS 4420, BPS 4442, BPS 4445, BPS 4481, BPS 4496, BPS 4501, SAS 1052, SAS 1053, SAS 3029 (cont'd on next page)	D.G.MILLER	J.JOHNSON	11/29/18

REV	DESCRIPTION	BY	APPROVED	DATE
	(Rev. E - cont'd) 10. Section 3: BPS 4017 a. Tables 1-4: Updated Original Bell Text regarding Bell department names b. Table 1: Added 4.2.7.1 as an additional instance c. Table 2: Added 4.2.2 Note and 4.2.2.2 as additional instances d. Table 3: Updated Original Bell Text reference to the Bell Supplier Quality Manual 11. Section 3: Added BPS 4140, Table 4 12. Section 3: BPS 4163 a. Inserted a new Table 2 to add par. 4.2.2 b. Updated 4.2.4 to be Table 3 and added par. 4.6 as an additional instance 13. Section 3: BPS 4304 a. Table 2: Added 5.1.9.(c) as an additional instance b. Deleted: Table 3 14. Added to Section 3: BPS 4419, BPS 4420, BPS 4445	(cont'd)	(cont'd)	
F	1. Section 2: 47-947-101, par. 3.2.1: Revised to be Cat.: QS. WAS: CC 2. Section 2: BPS 4420, par. 5.5.2.3 a. Revised to be Cat.: DR. WAS: CC b. Removed *develop* from the description WAS: "Bell **develop and** approve…" 3. Added to Section 2: BPS 4043, BPS 4158, BPS 4407, BPS 4579, BPS 4588 4. Section 3: BPS 4420: Added 5.5.2.3 as an additional instance to Table 1 5. Section 3: Added BPS 4579	D.G.MILLER	J.JOHNSON	3/8/19
G	1. Section 2: Updated BPS 4075 to Rev. L. WAS: K-1 a. Revised 2.2 (full wave DC) i. Added "…or half wave rectified DC…" ii. Revised to be Cat.: QS. WAS: CC b. Added 2.2 (quick break circuitry), 4.1.1, 4.2.3 and 4.2.14 c. Deleted 4.1.3 2. Section 2: Updated BPS 4304 to Rev. D. WAS: C-3 a. Renumbered and/or updated 9 functions b. Revised 4.1.6 and Table 2, Note 11 (HT card) to be Cat.: DR. WAS: CC c. Added 13 new functions d. Deleted 2.2.4, 5.2.5.(e), 6.1.1 and 6.1.3 (cont'd on next page)	D.G.MILLER		6-19-19

REV	DESCRIPTION	BY	APPROVED	DATE
	(Rev. G - cont'd) 3. Section 2: Updated BPS 4445 to Rev. B. WAS: A-2 a. Revised 5.1 and changed to be Cat.: QS. WAS: DR b. Renumbered 5.1.1 to be 5.2 and removed reference to 5.1.1.(e) c. Added 5.2.(g), Table 3, Note 1 and Table 4, Note 1 d. Deleted 5.5.2.1 and 6.2 4. Section 2: Updated BPS 4467 to Rev. D. WAS: C a. Updated 4.1.2 (indentations) and 4.2.1 b. Added 4.1.2 (question) 5. Added to Section 2: BPS 4387 and BPS 4578 6. Section 3: BPS 4304: a. Updated Table 1 and added 12 additional instances b. Updated Table 2 and deleted 5.2.5.(e) 7. Section 3: BPS 4445: Deleted Table 1 8. Added to Section 3: BPS 4578	(cont'd)	(cont'd)	

1. OVERVIEW

For Erickson Incorporated PMA of certain Bell Helicopter products, this document defines how Erickson shall act in place of Bell as when process specifications require that Bell perform in-process functions such as approving planning, samples, test results and the like. This document will be indicated on Erickson PMA drawings for parts that it is applicable to.

Section 2 contains the Bell process specifications that have been evaluated by Erickson for this purpose. All instances requiring Bell involvement are listed, and categorized as design-related, a function of the quality system, pending case-by-case evaluation, or not applicable. Additional specifications are added as PMA designs require.

Section 3 contains definition of how Erickson shall act in place of Bell regarding the instances that are deemed to be design-related.

Bell Drawings

Where a Bell drawing note contains a design-related requirement for Bell involvement, the corresponding Erickson PMA drawing shall define how Erickson will fulfill the function. Report cases that lack definition to Erickson Engineering.

The following note on Bell drawings does not constitute such a requirement when Erickson PMA is for the same model eligibility as existing Bell application data for the part. The substantiation tests were performed by Bell as part of the original type design.

> *The part defined by this drawing must successfully complete substantiation tests approved by Bell Helicopter Engineering for specific aircraft model application.*

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS

This section lists all instances that require Bell involvement within Bell process specifications that are relevant to Erickson PMA designs. Each instance is categorized as follows:

Category	Description
DR	DESIGN-RELATED - SEE SECTION 3 - Requires definition in PMA design of how Erickson will act in place of Bell. - Section 3 contains that definition and identifies the entity at Erickson that shall perform the function. - "Erickson Incorporated" shall be substituted for "Bell" and entities at Bell.
QS	QUALITY SYSTEM - Matters of product assurance, supply chain management, purchasing, training, certification, etc. - No requirement for further definition in PMA design. - "Erickson Incorporated" shall be substituted for "Bell" and entities at Bell.
CC	CASE-BY-CASE - While categorized as CC, an instance requiring Bell involvement is **not approved for use in Erickson PMA designs**. It is categorized as CC because it is not anticipated during typical production, and/or it is a deviation to the as-defined process. - It is to be evaluated on a case-by-case basis when first encountered by Erickson PMA manufacturing efforts. **At such time, Erickson supply chain, Quality, Production, etc. shall report the instance to Erickson Engineering for designation as DR, QS or N/A**. Recategorization is a design change that requires a revision of this specification and FAA approval. - Note that categorization applies only to the specific instance that is listed in the Section 2 tables, which may not be the entire paragraph that is noted. For example, a paragraph may define a process, and also state that Bell must approve any deviations to that process. While *Bell approve deviations* is listed for that paragraph and categorized as CC the process itself is applicable to Erickson PMA designs.
N/A	NOT APPLICABLE - Not applicable to Erickson PMA designs.

Section 2 does not include the Bell internal instances, when a process being performed at a Bell facility requires another entity at Bell to perform a function. They are not applicable to Erickson PMA designs.

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

47-947-101 - REV. B - SPUR GEAR DEFINITIONS AND INTERPRETATIONS USED ON BELL TRANSMISSION DRAWINGS			
Page	Par.	Bell In-Process Functions	Cat.
1	3.2.1	Involute profile chart paper show position of the Reference Diameter using Bell Standard Layout Procedure No. 107	QS
5	6.2	Additional copies of 047-947-101 available from Bell	QS

299-947-068 - REV. C - SPUR GEAR DEFINITIONS AND INTERPRETATIONS USED ON BELL TRANSMISSION GEAR DRAWINGS			
Page	Par.	Bell In-Process Functions	Cat.
9	6.2	Additional copies of 299-947-068 available from Bell	QS

BPS 4001 - REV. O - CHROMIC ACID ANODIZING			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
1	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
7	5.1.2	Bell approve use of etching type cleaners	CC
13	6.1.6	Records maintained for period of time specified by Bell	QS
13	6.2	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4006 - REV. U - CADMIUM PLATING, ELECTRODEPOSITED			
Page	Par.	Bell In-Process Functions	Cat.
v	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
v	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
7	3.7	Barrel plating shall not be used on Bell parts without approval	CC
10	4.9	Rework exceeding 5% to be approved on Material Review documentation	QS
11	5.1	Barrel plating shall not be used without written BHTI approval	CC
11	5.1.1.1	Vapor degreaser tested per ASTM D2942 or other approved standard	CC
22	6.1.7	Hydrogen Embrittlement Relief Test: Subcontractor shall submit specimens to a BHT approved test laboratory	QS
23	6.1.7.1.2	Hydrogen Embrittlement Relief Test, High Strength: Notify BHT for disposition of parts after failure of two or more test specimens	QS
24	6.1.7.2.2	Hydrogen Embrittlement Relief Test, Low Strength: Notify BHT after failure of two or more test specimens	QS
24	6.4	Test records maintained for time specified by Bell	QS
26	6.6	Product Assurance Dept shall assure application of controls	QS

BPS 4007 - REV. P - PASSIVATION			
Page	Par.	Bell In-Process Functions	Cat.
iv	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
iv	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
15	6.2	Quality Dept shall assure application of controls	QS

BPS 4012 - REV. D - ASSEMBLING THERMAL FITS			
Page	Par.	Bell In-Process Functions	Cat.
iv	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
iv	Front Matter	Facility Approval: Facilities shall be surveyed and approved by Bell	QS
9	6.2	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4017 - REV. J - FORGINGS, FOR AIRCRAFT APPLICATION			
Page	Par.	Bell In-Process Functions	Cat.
-	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
-	Front Matter	Facility Approval: Facilities shall be surveyed and approved by Bell	QS
8	2.2	Bell approve method to demonstrate forge furnace conformance to uniformity requirements if other than to AMS 2750	QS
12	4.1.2.1	If grain flow deviates from specified criteria, then Bell review for acceptance	CC
13	4.1.2.2	Grain size and structure of all production forgings shall be comparable to the Bell approved prototype forging	QS
13	4.1.2.3	Use of cast ingots requires prior Bell approval	CC
15	4.1.3.6 Note b	Bell approve Quality Visual Sample (QVS) if used for measuring surface finish	QS
16	4.1.4.2	Bell provide forging test diagram for drawings that don't have forging test plans	DR
16	4.1.4.3	Test specimens that are not sectioned from forging only if approved by Bell on the Forging Process Procedure	(4.2.3.(a))
18	4.2.2 Note	Rolling processes during manufacture of open die or hand forgings only if approved by Bell on the Forging Process Procedure	(4.2.3.(a))
18	4.2.2.2	Flame cutting of flash or tong holds only if approved by Bell on the Forging Process Procedure	(4.2.3.(a))
19	4.2.3.(a)	Forging Process Procedure shall be approved by Bell	DR
19	4.2.3.(b)	Submit full dimensional layout of sample forging to Bell	QS
19	4.2.3.(c)	Prototype forging report shall be approved by Bell	DR
20	4.2.3.1	Forging Process Procedure submitted to Bell for evaluation and approval	(4.2.3.(a))
21	4.2.4	Procedure and tooling changes require prior Bell approval for forgings that make controlled items (primary, critical, flight safety). Notify Bell of specified changes for all forgings; Bell may require re-approval per par. 4.2.3.	DR
22	4.2.7.1	Bell approve use of tensile specimen sizes and geometries other than as specified on forging test diagram	(4.1.4.2)
22	4.2.7.2	Bell authorize retests after failed lot acceptance material tests, and approve resulting test reports	QS
24	5.2	Supplier Product Assurance Dept shall assure application of controls	QS
29	6.4.1.1.1	Low Alloy Steels: Bell approve use of heat treatment stop-off compound and atmosphere in lieu of copper plating for decarb test specimens	CC
33	7.3.2.3	Tool Steels: Cooling practice detailed on Forging Process Procedure	(4.2.3.(a))
33	7.3.2.5	Tool Steels: Heat treatment detailed on Forging Process Procedure	(4.2.3.(a))

(cont'd on next page)

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4017 (cont'd)			
Page	Par.	Bell In-Process Functions	Cat.
33	7.3.2.7	Tool Steels: Bell approve straightening after final annealing on BPS 4140 Master Heat Treat Card	CC
38	8.3.2.3	CRES & PH: Cooling practice detailed on Forging Process Procedure	(4.2.3.(a))
39	8.3.2.7	CRES & PH: Bell approve straightening after final tempering or precipitation hardening on BPS 4140 Master Heat Treat Card	CC
41	8.4.1.5	CRES & PH: Tensile test by forge shop or Bell approved test lab	QS
43	9.3.1.1	Titanium: BSTOA forgings do not require grain flow evaluation unless specified by Bell * - Requirements already established in Bell drawing and/or Bell test diagram. Refer to 4.1.4.2 when Bell test diagram is not available.	* (4.1.4.2)
43	9.3.1.2.1	Titanium: Grain size correspond to Bell approved prototype forging	QS
44	9.3.1.7	Titanium: For beta forgings, Bell establish requirements for microstructure and heat treat capability (if not on engineering drawing)	CC
44	9.3.2.3	Titanium: Protective coatings detailed on Forging Process Procedure	(4.2.3.(a))
45	9.3.2.5	Titanium: Beta forging temperatures and reductions specified on Forging Process Procedure	(4.2.3.(a))
45	9.3.2.9	Titanium: Cooling practice detailed on Forging Process Procedure	(4.2.3.(a))
49	10.3.1.1.1	Aluminum: Grain Size normal for alloy as exhibited by the Bell approved prototype forging	QS
55	11.3.2.4	Magnesium: Heat treatment detailed on Forging Process Procedure	(4.2.3.(a))

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4018 - REV. U - INSTALLATION AND TIGHTENING PROCEDURES FOR THREADED FASTENERS AND FLUID FITTINGS, AND ELECTRICAL COMPONENTS			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
7	4.2.1 Note 1	Drawing change required for bolt & screw grip length changes other than as indicated	CC
8	4.2.2 Note 1	Engineering approval required for substitution of different P/N washer	CC
8	4.2.2 Note 2	Engineering approval required for addition of plain, flat washers to stack-up with chamfered, concave, counterbored, dissimilar metal, keyed, lock, etc. washer types	CC
14	5.8	Notify Product Assurance as necessary for inspection of threaded hole and studs prior to installation of interference-fitted studs	QS
15	5.8.6.c	Submit for Product Assurance and/or Material Review if interference-fitted stud installation is unsuccessful as indicated	QS
16	6.2	Engineering Liaison decide whether recurring grip length adjustments shall be recommended for design change	QS
16	6.3	Product Assurance Dept shall assure application of controls	QS

BPS 4020 - REV. L - PRESSURE TESTING			
Page	Par.	Bell In-Process Functions	Cat.
iv	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
9	5.4	Protective enclsosures shall be approved by Safety	QS
10	6.2	Product Assurance Dept shall assure application of controls	QS

BPS 4043 - REV. M - SAFETY WIRING AND COTTER PINNING, METHODS OF			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
2	3.2	Bell approve substitution of safety cabling for safety wire	CC
20	6.2	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4050 - REV. AG - MARKING AIRCRAFT PARTS			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
6	2.8	Bell approve use of rotary cutter if not allowed by drawing	CC
13	4.1.3.1	Supplier parts serialization: Alpha codes assigned by Bell	QS
25	4.2.14.1	Fatigue Controlled forgings and castings: Changes approved by Bell * - Fatigue Control is N/A to Erickson PMA	N/A*
32	6.2	Quality Dept shall assure application of controls	QS

BPS 4075 - REV. L - MAGNETIC PARTICLE INSPECTION			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
vi	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
3	2.2	Bell approve use of equipment without quick break circuitry	QS
3	2.2	Equipment other than wet horizontal full wave rectified DC or half wave rectified DC requires Bell approval	QS
5	3.2	Special Acceptance Standards (SAS) issued by Bell when acceptance criteria for a part deviates from BPS 4075 requirements	QS
7	4.1.1	Bell approve vapor degreasing material other than as indicated	QS
9	4.2.3	Bell approve liquid carrier other than as indicated	QS
10	4.2.5	Disposition of acceptable/rejectable parts in accordance with approved Product Assurance procedures	QS
15	4.2.14	Bell approve corrosion protection oil other than MB 1073	QS
19	6.2.1	Test records maintained for time specified by Bell	QS
20	6.3	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4084 - REV. L - BLACK OXIDE TREATMENT OF STEELS			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
1	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
9	5.1.9	Re-black oxide treatment of X-53 alloy parts: Bell approve acid stripping	CC
9	5.1.10	Black oxide touch-up: Bell approve when repair area exceeds one square inch and assembly cannot be immersed in a tank	CC
11	6.2	Records maintained for time specified by Bell	QS
12	6.4	Product Assurance Dept shall assure application of controls	QS

BPS 4089 - REV. M - FLUORESCENT PENETRANT INSPECTION			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
vi	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
5	2.1.2	Rinse/wash apparatus: Bell approve calibration system other than ISO 10012-1 or NCSL Z540-1	QS
7	3.3	Special Acceptance Standards (SAS) issued by Bell when acceptance criteria for a part deviates from BPS 4089 requirements	QS
19	4.2.5.2	Chemical cleaning for rework of parts: Materials and methods defined by Bell	QS
19	4.2.5.3	Mechanical cleaning for rework of parts: Materials, methods and CMR defined by Bell	QS
23	4.2.5.4.4.(d)	Copper alloy castings: Bell approve Chemical Metal Removal (CMR) procedures	QS
26	4.2.13.1	Water washable penetrants: Bell approve processing times if they exceed requirements in 4.2.11.1	QS
36	6.2.1	Process control test records retained in accordance with Bell approved procedures	QS
37	6.2.2	Inspection log retained in accordance with Bell approved procedures	QS
37	6.3	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4092 - REV. L - NITAL ETCH PROCESS			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
vi	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
2	1.1.2	Nital etch standards are available (from Bell) for Method II	QS
6	3.4.2	BPS Supplemental Standards for Method II provided by Bell	QS
7	4.1.1, 4.1.3 & 4.1.4	Training, certification and recertification of inspectors	QS
8	4.3	Rework of parts to remove grinding burns or abusive machining discrepancies only when approved by Bell	QS
17	5.3.1 Note 2	Method I: All evaluations dispositioned as "withhold" shall be submitted to Bell or scrapped	QS
18	5.3.2 Note 2	Method II: All evaluations dispositioned as "withhold" shall be submitted to Bell or scrapped	QS
20	6.1.3	Records maintained for time specified by Bell	QS
20	6.2	Quality Dept shall assure application of controls	QS

BPS 4110 - REV. J - COPPER PLATING			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
vi	Front Matter	Facility Approval: Facilities and equipment surveyed and approved by Bell	QS
16	6.1.5	Records maintained for period of time specified by Bell	QS
16	6.2	Quality Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4138 - REV. F - CHEMICAL CLEANING OF AIRCRAFT MATERIALS			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
1	Front Matter	Facility Approval: Facilities, equipment and procedures surveyed and approved by Bell when this specification is called out within another specification that requires Facility Approval.	QS
11	6.2	Product Assurance Dept shall assure application of controls	QS

BPS 4139 - REV. P - HEAT TREATMENT OF ALUMINUM ALLOYS			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
1	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
6	2.3.7	Bell approve polyalkylene glycol quench solutions that exceed concentration limits of Table 8 and mechanical properties do not meet requirements of applicable material specification	CC
6	2.3.7	Bell approve mixing of glycol solutions from different manufacturers	CC
7	3.1.2	Bell provide specific heat treat cycle information when engineering drawing specifies an alloy not covered in BPS 4139	CC
17	4.3.3.2	Quench delay time per Figure 1 does not apply to alloys 2004, 7178 and 7475: Bell may review objective evidence of performance tests	CC
17	4.3.3.3	Bell approve special quench methods required to prevent excessive loss of corrosion resistance and/or mechanical properties	CC
18	4.3.4	Bell approve heat treat procedure for parts receiving cold stabilization treatment for dimensional stability	CC
22	5.3	Bell accept method used for control of glycol quench systems in conjunction with salt bath furnaces	CC
23	6.2.1.1	Bell approve temperature uniformity that deviates from AMS 2750 or BPS 4416	CC
25	6.2.3.2.1.(d)	Tensile tests: Separately forged specimens may be tested where permitted by material specification, engineering drawing, or the Bell approved Forging Process Procedure * - Refer to BPS 4017, 4.2.3.(a) for approval of Forging Process Procedure	*
28	6.4	Product Assurance Dept shall assure application of controls	QS
38	Table 6 Note (2)	Temper designations shown result when aging is performed by Bell or a Bell approved source	QS
38	Table 7 Note (2)	Temper designations shown result when aging is performed by Bell or a Bell approved source	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4140 - REV. G - HEAT TREATMENT OF STEEL			
Page	Par.	Bell In-Process Functions	Cat.
iii	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
iii	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
5	I.2.7	Subcontractors may utilize a Bell approved lab for microhardness testing	QS
5	I.3.5	Contact Bell for heat treatment information for alloys not covered by this BPS	CC
7	I.4.2.2	Bell approve detailed Master Heat Treat Card for indicated types of parts	DR
8	I.4.2.3.2	Bell approve alternate forms for Master HT Card	(I.4.2.2)
9	I.4.2.4.5	Brushed copper plating as repair technique if approved by Bell	QS
9	I.4.2.4.6	Variation request to use stop-off compounds submitted to Bell	CC
11	I.4.2.7	Straightening after full heat treatment and machining shall not be performed without Bell Material Review approval	QS
11	I.4.2.9	Heat treatment and stress relief shall not be performed on parts subsequent to shot peening or thread rolling without approval by Bell	CC
12	I.4.2.10.2	Complete a form with comparable information as Bell form 7883-55991 for every heat treat rework	QS
14	I.5.2.2.4.1	Report carbon shim analysis results	QS
15	I.5.2.2.4.2	Report decarb specimen analysis results	QS
15	I.5.2.3	Bell approve titration as alternate to razor blade test for neutral salt bath	CC
16	I.6.1	Bell approve alternate hardness test plan	CC
16	I.6.2	Deviations of furnace TUS and SAT approved by Bell	CC
16	I.6.2.1	Temperature Uniformity Survey (TUS) deviations approved by Bell	CC
17	I.6.2.2	System Accuracy Test (SAT) deviations approved by Bell	CC
17	I.6.5	Product Assurance Dept shall assure application of controls	QS
20	II.4.2.2.1	Low Alloy Steels: Condition of parts at time of normalizing to be specified on Master HT Card	(I.4.2.2)
21	II.4.2.4	Low Alloy Steels: Section thickness per Table 6 and on Master HT Card	(I.4.2.2)
22	II.4.2.13	Low Alloy Steels: Straightening method on Master HT Card	(I.4.2.2)
24	Table 6 Note (2)	Low Alloy Steels: Thickness in excess of table approved by Bell on Master HT Card	DR
24	Table 6 Note (3)	Low Alloy Steels: Approval of greater thickness steels approved by Bell	CC

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2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4140 (cont'd)			
Page	Par.	Bell In-Process Functions	Cat.
24	Table 6 Note (5)	Low Alloy Steels: Consult Bell prior to utilizing 4130 above 165 ksi	CC
26	Table 9 Note (5)	Low Alloy Steels: When mechanical properties not met, quenching technique shall be reviewed	CC
26	Table 9 Note (9)	Low Alloy Steels: 9310 through-hardened: When hardness other than HRC 34-40, contact Bell	CC
27	Table 9 Note (11)	Low Alloy Steels: X-53: When annealing cycle necessary, contact Bell	CC
27	Table 9 Note (12)	Low Alloy Steels: X-53: When core hardness on non-carburized part other than HRC 33-41 required, contact Bell	CC
27	Table 9 Note (14)	Low Alloy Steels: 4130: To utilize above 165 ksi, contact Bell	CC
31	III.4.2.6	CRES: Straightening method on Master HT Card	(I.4.2.2)
38	IV.4.2.10	Maraging & PH Steels: Straightening method on Master HT Card	(I.4.2.2)
40	Table 15 Note (5)	Maraging & PH Steels: Additional reaging operations on Master HT Card	CC
42	V.3.2	Ultra-High Strength: Contact Bell for those not in BPS	CC
43	V.4.2.2	Ultra-High Strength: H-11/H-12: Rework card submitted to Bell for multiple HT	(Table 19 Note (3))
44	V.4.2.6	Ultra-High Strength: Straightening method on Master HT Card	(I.4.2.2)
46	Table 19 Note (3)	Ultra-High Strength: H-11/H-12: When parts fail to respond to min tensile or hardness, contact Bell	DR
50	VI.4.2.1	Induction Hardening: Bell approve processing of parts that are not in hardened and tempered condition, free of decarburization	CC
51	VI.4.2.2.2	Induction Hardening: Data Card and deviation approval by Bell. Requalification by Bell.	CC
51	VI.4.2.4	Induction Hardening: Rehardening only when approved by Bell	CC
52	VI.6.1.1	Induction Hardening: Process Qualification Report, Data Card and Test Specimens submit to Bell	CC
52	VI.6.1.2	Induction Hardening: Laboratory Evaluation Report for subsequent production loads submit to Bell	QS
54	VII.3.2	Induction Annealing: Contact Bell for procedures for parts other than tubes with swaging / bullet nosing	CC
54	VII.4.2.1	Induction Annealing: Data Card (or frozen planning) and deviation approval by Bell	DR
54	VII.4.2.2	Induction Annealing: Data Card storage	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4158 - REV. F-1 - APPLICATION OF DECALS			
Page	Par.	Bell In-Process Functions	Cat.
iv	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
7	5.2	Product Assurance Dept shall assure application of controls	QS

BPS 4162 - REV. H - INSTALLATION AND RETENTION OF BEARINGS THROUGH STAKING			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
1	Front Matter	Facility Approval: Facilities shall be surveyed and approved by Bell	QS
9	4.3	MRB authorization required when housing material removal exceeds drawing tolerances	QS
19	7.2	Product Assurance Dept shall assure application of controls	QS

BPS 4163 - REV. J - AIRCRAFT CASTINGS			
Page	Par.	Bell In-Process Functions	Cat.
v	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
v	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
5	3.2	Bell establish classification for each casting design * - Classification is already indicated in the Bell design data	*
5	3.3	Bell may specify on drawing a different frequency of tests than requirements in BPS 4163 * - If applicable, such differences are already indicated in the Bell design data	*
7	3.5.6	Production lot defined as castings poured subsequent to Bell pre-production approvals (foundry control, dimensional layout and casting process procedure) * - The approvals occur elsewhere in BPS 4163 and are documented below	*
8	3.5.12	Critically or highly stressed areas shall be identified by Bell on X-ray diagram on drawing * - Areas are already designated in the Bell design data	*

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2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4163 (cont'd)			
Page	Par.	Bell In-Process Functions	Cat.
8	3.5.13	Bell provide foundry control test diagram when not incorporated into drawing	DR
9	4.1.1	Bell to advise of current requirements when class on drawing is not covered by BPS 4163	QS
9	4.2.2	Bell approve foundry control for indicated circumstances	DR
9	4.2.2.1	Testing of foundry control casting by Bell approved lab	QS
9	4.2.2.1	All testing of foundry control casting by same lab unless allowed by LTP 1032 or approved by Bell	QS
10	4.2.2.1	Bell may perform testing and produce the foundry control evaluation report	QS
10	4.2.2.3	Bell approve use of radiographically nonconforming castings for foundry control evaluation	(4.2.2)
10	4.2.3	Dimensional layout inspection by Bell approved personnel	QS
10	4.2.3	Submit dimensional layout inspection results to Bell for approval	QS
10	4.2.4	Bell approve Casting Process Procedure	DR
11	4.3	Bell supply foundry with radiographic technique film for the part number	QS
11	4.6	Bell approve changes prior to shipment of castings	(4.2.4)
12	4.8.3(b)	Bell designate required X-ray views on drawing * - Views are already designated in the Bell design data	*
18	4.15.1	Hot Isostatic Pressing (HIP) as rework only on HIP parts or after Bell approval	QS
19	5.1.1.a	Bell approve multiple-melt casting via Casting Process Procedure	(4.2.4)
21	5.1.1.5.2	Bell supply hardness test acceptance criteria when not on drawing or BPS 4467	CC
22	5.1.2	Tensile tests: Notify Bell for disposition of casting lot after two test bar failures	QS
24	5.1.5	Completed forms shall be maintained on file and available for review by Bell	QS
25	6.1	Product Assurance Dept shall assure application of controls	QS

BPS 4182 - REV. G - CHEMICAL FILM TREATMENT			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
1	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
20	6.3	Records maintained for period of time specified by Bell	QS
20	6.4	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4212 - REV. C - HEAT TREATMENT OF TITANIUM ALLOYS			
Page	Par.	Bell In-Process Functions	Cat.
2	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
2	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
11	4.2.1	Bell approve Master Heat Treat Card for primary, critical and flight safety parts	DR
12	4.2.2.2	Submit to Bell for approval of Master Heat Treat Card for primary, critical and flight safety parts	(4.2.1)
12	4.2.3.2	Bell approve use of protective coatings for surface protection during heat treating	(4.2.1)
13	4.2.9	Bell approve straightening procedures on Master Heat Treat Card	(4.2.1)
19	5.4.6.2	Ti-6Al-4V ELI BSTOA Wrought Parts: Bell approve exceedance of grain size requirements	QS
21	6.1.7.a	Bell MDR/SMDAR disposition of parts that cannot be reworked	QS
21	6.1.7.b	Bell approve rework Heat Treat Cards	(4.2.1)
21	6.2	Product Assurance Dept shall assure application of controls	QS
24	Table I Note 3	Wrought product to be water quenced unless specified by Bell	CC

BPS 4300 - REV. B - ALCOHOLIC PHOSPHORIC TREATMENT			
Page	Par.	Bell In-Process Functions	Cat.
Title	Front Matter	Subcontractors: Submit to Bell for approval of deviations	QS, CC
1	5.1	Quality Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4304 - REV. D - NITRIDING OF STEEL			
Page	Par.	Bell In-Process Functions	Cat.
v	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
v	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
5	3.1	Bell approve nitriding of 300 Series, and 17-4, 15-5 PH grade stainless steels * - When engineering drawing calls out these materials to be nitrided, then this approval is already granted	*
5	3.2.1	Nitriding performed only by Bell or Bell approved source	QS
5	3.2.1	Bell approve nitriding methods other than two stage gas nitriding	(4.1.1)
6	3.2.2	Malcomizing performed only by Bell approved source	QS
6	3.2.3	Tufftriding performed only by Bell approved source	QS
6	3.2.4	Bell approve hardness scales other than as indicated for measuring case depth	(4.1.1)
6	3.2.6	Bell approve pseudo-nitride cycle other than as indicated	(4.1.1)
8	4.1.1	Bell approve Master Heat Treat Card for nitriding each part number	DR
8	4.1.1.2	Subcontractor submit specimens and test data to Bell for load approval * - Refer to 4.1.1 and 6.1.2.3 for Bell approval functions	*
9	4.1.1.2.1	Bell evaluate nitrided part metallurgically	(4.1.1)
9	4.1.1.2.1	Bell determine that the number and location of tests are sufficient when not specified on engineering drawing	(4.1.1)
9	4.1.1.2.2	Bell evaluate finished part for case depth and stock removal	(4.1.1)
9	4.1.1.2.2	Bell approve changes to nitriding or pre-nitride configuration on a new Master Heat Treat Card	(4.1.1)
9	4.1.1.2.2	Conformity records retained permanently by Bell	QS
9	4.1.3	Bell approve stress relieving after nitriding	CC
9	4.1.3	Stress relief operations on Master Heat Treat Card	(4.1.1)
10	4.1.6	Nitriding cycles: Bell approve deviations from Table 2 that are not already stated on engineering drawing	(4.1.1)
11	4.1.10	Bell approve hot straightening after nitriding	CC
11	4.1.11	Bell approve re-nitriding of "as-nitrided" surfaces	CC
13	4.1.12.2.2	Bell approve White Layer Removal Set-up Card (for parts with unground areas which require removal by abrasive blasting)	DR
13	4.1.13	White layer removal by blasting: Records to be maintained in accordance with Bell procedures	QS

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2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4304 (cont'd)			
Page	Par.	Bell In-Process Functions	Cat.
13	4.1.14	Nitriding records to be maintained in accordance with Bell procedures	QS
14	5.1.1	Bell approve use of stop-off paints for masking	(4.1.1)
17	5.1.9.(b)	Bell approve abrasive media other than as indicated	(4.1.12.2.2)
17	5.2.1	Bell approve microhardness scales and conversion methods other than indicated	(4.1.1)
18	5.2.3.4	Subcontractors submit test piece and test data to Bell for approval of load	QS
19	5.2.5	Bell approve White Layer Removal Set-up Card when part qualification and conformity are completed	(4.1.12.2.2)
21	6.1.2.3	Nitride load approval / Subcontractor nitride loads: Bell approve load based upon evaluation of the submitted test piece	QS
22	6.2	Product Assurance Dept shall assure application of controls	QS
25	Table 2, Note 7	Bell approve adjusted cycle to meet minimum case depth	(4.1.1)
25	Table 2, Note 11	Malcomizing performed by Bell approved sources	QS
25	Table 2, Note 11	Bell approve Master Heat Treat Card for Malcomizing	(4.1.1)

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4309 - REV. G - RADIOGRAPHIC INSPECTION			
Page	Par.	Bell In-Process Functions	Cat.
iii	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
iii	Front Matter	Facility Approval: Equipment, facilities and personnel shall be surveyed and approved by Bell	QS
6	2.1.13	Film Radiography: Radiographic exposures of production castings shall be in accordance with BHTI Technique Film or digital BHTI Technique Film files supplied by Bell	QS
6	2.1.13	Film Radiography: Bell approve X-ray of production parts without BHTI Technique Film	QS
6	2.1.13	Film Radiography: For new parts: Bell to generate BHTI Technique Film files from initial Foundry Control film packages. For production: If BHTI Technique Film is not available, then supplier generated technique film to be submitted to Bell for generation of BHTI Technique Film files.	QS
6	2.1.14	Film Radiography: Bell provide BHTI Standards Approval form for disposition of all castings requiring radiographic inspection unless quality criteria stated on drawing	QS
6	2.2	Digital Radiography permitted with Bell approval	QS
8	2.2.7	Digital Radiography: Radiographic exposures of production castings shall be in accordance with BHTI Technique Film or digital BHTI Technique Film files supplied by Bell	QS
8	2.2.7	Digital Radiography: Bell approve X-ray of production parts without BHTI Technique Film	QS
8	2.2.7	Digital Radiography: For new parts: Bell to generate BHTI Technique Film files from initial Foundry Control film packages. For production: If BHTI Technique Film is not available, then supplier generated technique film to be submitted to Bell for generation of BHTI Technique Film files.	QS
8	2.2.8	Digital Radiography: Bell provide BHTI Standards Approval form for disposition of all castings requiring radiographic inspection unless quality criteria stated on drawing	QS
9	3.1	Bell approve changes to process controls	QS
10	3.2.3	Engineering drawing X-ray diagram views used until BHTI Technique Film established by Bell	QS
10	3.2.4	Quality criteria specified on drawing and BPS 4163, or BHTI Standards Approval forms	QS
10	3.2.5	X-ray views and quality criteria for castings, and radiographic acceptance for components other than castings determined by Bell and specified on drawing * - Already specified in the Bell design data	*

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2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4309 (cont'd)			
Page	Par.	Bell In-Process Functions	Cat.
11	3.3.2	Bell approve facility and personnel for Final Radiographic Acceptance	QS
11	3.3.3	Technique Films established by Bell do not illustrate allowable discontinuities	QS
11	3.3.4.1	Bell may define minimum acceptable quality level on BHTI Standards Approval forms	QS
12	3.3.4.2	Bell may define minimum acceptable quality level in decal next to X-ray diagram * - If so, then this is already in the Bell drawing	*
12	4.1	Radiographic inspection performed by Bell approved source, and Final Radiographic Acceptance of castings by facilities/interpreters approved by Bell	QS
13	4.1.4	Bell approve use of fluorescent screens	QS
14	4.1.6	Listed information shall appear on each radiographic image, located off the part image unless approved by Bell	QS
16	4.1.8.2	During review of foundry control package when no BHTI Technique Film has been established, Bell will review foundry control radiographic film and detailed radiographic technique, and use them to create the BHTI Technique Film for the casting. Bell may request changes to the supplied foundry control radiographic technique.	QS
16	4.1.8.3	For rapid prototype castings, BHTI Technique Film is not required until second lot of parts	QS
17	4.1.9.3	Readable areas of Computed Radiography images shall be as agreed upon by Bell	QS
18	4.1.9.8	Bell may provide BHTI Technique Film in a digitized format	QS
19	4.1.11.1	All casting radiographic dispositions performed by Bell approved Final Radiographic Acceptance interpreters	QS
20	4.1.11.2	All final casting radiographic interpretation personnel shall be approved through examination by Bell	QS
22	4.1.12.3	When casting has fin defects that occur in inaccessible areas it may be submitted to Bell for review	QS
26	4.1.14.1	All film to be retained at the Bell approved final interpreter facility	QS
27	4.1.14.2.d	All film and digital images to be interpreted by Bell approved interpreter	QS
27	4.1.14.6	X-ray lab records shall be maintained for time specified by Bell	QS
27	4.1.14.7	Within 5 days after disposition of parts, X-ray lab to submit to Bell a copy of all X-ray reports	QS
29	5.2	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4310 - REV. F-1 - APPLICATION OF SOLID FILM LUBRICANTS			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	(EO 4310F-1) Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
1	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
13	6.3	Product Assurance Dept shall assure application of controls	QS

BPS 4312 - REV. E - SELECTIVE BRUSH CADMIUM PLATING			
Page	Par.	Bell In-Process Functions	Cat.
v	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
v	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
9	4.5	Training may be from an instructor designated by Bell	QS
18	6.2	Quality Dept shall assure application of controls	QS

BPS 4326 - REV. A-2 - VIBRATORY AND BARREL FINISHING OF METALS			
Page	Par.	Bell In-Process Functions	Cat.
Title	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
2	6.2	Quality Dept shall assure application of controls	QS

BPS 4335 - REV. C-2 - ADHESIVE BONDING OF NAMEPLATES			
Page	Par.	Bell In-Process Functions	Cat.
i	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
5	5.2	Quality Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4343 - REV. B - MECHANICAL CLEANING OF METALS			
Page	Par.	Bell In-Process Functions	Cat.
v	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
9	5.3.2	Wet Abrasive Blasting- Anti-settling and anti-rusting agents shall not be used without Bell approval	CC
11	6.3	Product Assurance Dept shall assure application of controls	QS

BPS 4352 - REV. L - SURFACE PREPARATION OF MATERIALS FOR ADHESIVE BONDING			
Page	Par.	Bell In-Process Functions	Cat.
iii	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
iii	Front Matter	Facility Approval: Facilities shall be surveyed and approved by Bell	QS
7	I.4.1	Certified water analysis submitted to Bell for approval	QS
8	I.4.6	Qualification of Processes: Test requirements may be modified by Bell for specific parts and/or adhesive systems	QS
9	I.4.7.1	Control and qualification testing: Bell establish acceptable bond strengths when production parts or non-standard test panels are used	CC
9	I.4.7.1	Qualification testing: Tested coupons, test results and untested coupons submitted to Bell for evaluation	QS
13	I.4.9	Records of all tests maintained for period of time specified by Bell	QS
14	I.4.12	Product Assurance Dept shall assure application of controls	QS
25	II.5.2.5	Aluminum, Method IA: Qualification tests shall be conducted under the cognizance of a representative from Bell	QS
26	II.6.2.2	Aluminum, Method IB: Qualification Test Coupons submit to Bell (ref: I.4.7.1)	QS
41	II.16.4	Aluminum, Method IV: 7000 series shall not be stripped without Bell approval	CC
43	II.16.5.5	Aluminum, Method IV: Qualification tests shall be conducted under the surveillance of a representative from Bell	QS
57	IV.3.1.5	Magnesium, Method I: Qualification procedure specified by Bell when required	CC
61	IV.6.1.3	Magnesium, Method II: Qualification procedure specified by Bell when required	CC
106	X.6.6	Aluminum, Method IB: Qualification Test Coupons submit to Bell (ref: I.4.7.1)	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4357 - REV. K - REMOVAL OF ORGANIC COATINGS			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
1	Front Matter	Facility Approval: Section IV plastic media blasting facilities, equipment and procedures shall be surveyed and approved by Bell	QS
8	II.6.2	Chemical: Product Assurance Dept shall assure application of controls	QS
10	III.5.1.b	Mechanical: Bell approve nylon pad other than as indicated	QS
10	III.5.1.c	Mechanical: Bell approve nylon pad other than as indicated	QS
11	III.6.1.2	Mechanical: Product Assurance Dept shall assure application of controls	QS
16	IV.4.5.2	PMB: Bell approve subcontractor PMB training course	QS
16	IV.4.5.2	PMB: Bell approve variations to the stated training requirements	QS
17	IV.4.5.3	PMB, Class I: Bell certified PMB instructor	QS
17	IV.4.5.4	PMB, Class II: Bell certified PMB instructor	QS
17	IV.4.5.5	PMB, Class III: Bell certified PMB instructor	QS
18	IV.4.5.6	PMB, Class IV: Bell certified PMB instructor	QS
24	IV.6.2	PMB: Product Assurance Dept shall assure application of controls	QS
26	V.4.2	Sodium bicarbonate blasting: Bell certified instructor	QS
28	V.6.1.1	Sodium bicarbonate blasting: Product Assurance Dept shall assure application of controls	QS

BPS 4362 - REV. C - APPLICATION OF CORROSION PREVENTIVE COMPOUNDS			
Page	Par.	Bell In-Process Functions	Cat.
iv	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
5	4.3	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4367 - REV. B-8 - ZINC CHROMATE PRIMER, APPLICATION OF			
Page	Par.	Bell In-Process Functions	Cat.
Title	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
3	6.2	Quality Dept shall assure application of controls	QS

BPS 4384 - REV. E-2 - PHOSPHATIZING OF METALS			
Page	Par.	Bell In-Process Functions	Cat.
i	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
i	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
8	6.2	Product Assurance Dept shall assure application of controls	QS

BPS 4386 - REV. E-2 - APPLICATION OF ACRYLIC LACQUERS			
Page	Par.	Bell In-Process Functions	Cat.
Title	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
3	6.3	Product Assurance Dept shall assure application of controls	QS

BPS 4387 - REV. F - HARD ANODIC COATING OF ALUMINUM ALLOYS (HARD ANODIZING)			
Page	Par.	Bell In-Process Functions	Cat.
v	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
v	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
5	2.9	Wear resistance test equipment available at process facility or Bell approved lab	QS
16	5.3	Bell authorize chem film touch up of damaged areas when they exceed 5%	QS
19	6.1.6	Records maintained for period specified by Bell	QS
19	6.2	Bell qualification testing of each process prior to production use	QS
20	6.5	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4389 - REV. C-4 - CHEMICAL MILLING			
Page	Par.	Bell In-Process Functions	Cat.
Title	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
Title	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
1	4.1.1.a	(EO 4389C-4) Titanium parts: Bell approve chemical descaling other than per BPS 4462	CC
2	4.11	Bell approve straightening or trueing using dissimilar metal tools after chem-mill	CC
3	5.1.2	Initial qualification of chemical milling source based on a Bell facility survey and evaluation of coupon or part	QS
3	5.1.3	Continuing qualification based on a facility survey and evaluation of coupon or part as deemed necessary by Bell	QS
3	5.2	Product Assurance Dept shall assure application of controls	QS

BPS 4398 - REV. B - APPLICATION OF ADHESIVE PROMOTER			
Page	Par.	Bell In-Process Functions	Cat.
iv	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
4	4.3	Bell-approved clean, dry gloves * - The MB gloves indicated are already Bell approved	*
7	7	Inspection Dept shall assure application of controls	QS

BPS 4403 - REV. J - SECONDARY ADHESIVE BONDING USING EPOXY BASED ADHESIVES			
Page	Par.	Bell In-Process Functions	Cat.
iii	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
iii	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
5	3.3.1	Non-destructive inspection for bond quality: Bell to clarify in cases where there is a question concerning the appropriate method for a specific part configuration	CC
5	3.3.1	Bell reserves the right to review all inspection methods used to define and determine anomalies in accordance with this specification	QS
12	5.1.6 Notes	Bell approve omission of Record Data for applications other than as noted	QS
12	5.2	Quality Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4407 - REV. J - PREPARATION AND APPLICATION OF SEALANTS			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
19	6.2	Quality shall assure application of controls	QS

BPS 4409 - REV. C - SHOT PEENING OF STEEL, ALUMINUM AND TITANIUM PARTS			
Page	Par.	Bell In-Process Functions	Cat.
viii	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
viii	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
3	2.1.1	Peening using manual controls is not permitted without Bell engineering documentation	(5.10)
13	5.2	Bell approve shot peen process cards for all parts to be peened	DR
15	5.4.1	Internal lance set-ups for holes not required if approved by Bell on shot peen process card	(5.2)
15	5.4.2	Bell may direct that holes be peened using internal lance	CC
16	5.6.1.2	When engineering drawing does not include Almen test strip diagram, the locations are to be documented on shot peen process card and approved by Bell	(5.2)
17	5.6.2.2	Contact Bell if problems arise concerning shot peening of mixed materials	CC
19	5.8.1	If intensity varies outside limits on the four hour or final intensity checks, or if coverage is insufficient, all parts peened after the last acceptable Almen strip(s) and/or coverage inspection shall be submitted to Bell for disposition	QS
19	5.8.1	When intensity or coverage varies outside limits as described in 5.8.1 and subsequent Almen strip(s) check outside limits, then a new process card shall be submitted to Bell	(5.2)
20	5.10	Peening using manual controls is not permitted without Bell engineering documentation	CC
21	6.1.5	Records for each lot of parts to be retained in accordance with Bell procedures	QS
22	6.3	Product Assurance Dept shall assure application of controls	QS
25	Table III Note 2.	If engineering drawing does not specify shot size and/or intensity, then advised to contact Bell before shot peen set-up is initiated	CC
26	Table IV	Specify Bell approved shot peen machine on shot peen process card	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4416 - REV. D - CERTIFICATION OF THERMAL PROCESSING EQUIPMENT			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS
2	2.1	Thermal processing equipment able to be calibrated, which is required for use by BPS 4416 to be calibrated by Bell or an outside calibration source	QS
11	Table 3	Continuous Equipment: Temperature Uniformity Survey scheme per AMS 2750 and approved by Bell	QS
15	5.4	Gas quench test specimens as shown in Figure 2 or otherwise approved by Bell	QS
16	5.5	When probe thermocouple is impractical, an alternate procedure for furnace temperature verification is to be approved by Bell	QS
16	6.1	Bond tags on discrepant equipment shall not be removed until a satisfactory survey or probe check is performed as directed by Bell	QS
17	6.3	Quality Dept shall assure application of controls	QS

BPS 4419 - REV. C-1 - SWAGING AND INTERNAL THREADING OF ALUMINUM TUBES			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
1	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
4	2.2.2	Thread forming tap approval * - Bell only approval for listing in MB 1392	*
11	5.1.4	Bell develop/approve swaging without a mandrel to produce an undersized blade I.D. for subsequent I.D. sizing to remove excessive swaging folds	(5.2.3)
12	5.1.7.2.3	Material Review (MRB) disposition for swaged blade concentricity which exceeds indicated limit	QS
13	5.2.3	Bell develop procedure and tooling for swaged blade I.D. sizing prior to threading	DR
14	5.2.4.3.1	Bell develop/approve Method III swaged blade I.D. sizing	(5.2.3)
22	5.3.11	Bell develop/approve process for retapping of threads	(5.2.3)
22	5.3.11.1.a	Retapping only with taps approved for threading * - Bell only; ref: par. 2.2.2	*
23	5.3.11.3	Material Review (MRB) authorize retapping for rework to correct thread dimensions	QS
26	6.4	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4420 - REV. D - CARBURIZING AND HEAT TREATMENT OF CARBURIZED PARTS			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
vi	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
1	1.1.3 Note	Electronic Master Heat Treat Card acceptable if approved by Bell; form number 56856 not required (7883-55991 is used internally by Bell; ref. par. 4.2.2)	(4.2.1.2)
3	2.2.4	Bell direct recertification testing when changes are made to carrier gas system	QS
5	2.6.3	Bell approve results of source requalification testing due to carrier gas system changes	QS
6	2.7.2	Retained austenite analysis by X-ray diffraction and carbon gradient analysis to be performed by a Bell certified facility	QS
10	3.4.5 Note 2	Stock removal which exceeds engineering drawing maximum allowable shall be approved by Bell via Material Review	QS
12	4.1.1.6	Bell may accept loads with process variance if indicated features meet design requirements	QS
16	4.2.1	Bell approve changes to Master Heat Treat Card	(4.2.1.2)
16	4.2.1.2	Bell approve Master Heat Treat Card	DR
16	4.2.2	Bell approve of reworking carburized parts on Master Heat Treat Card	(4.2.1.2)
17	4.2.6	Parts threaded after carburize unless approved by Bell	CC
17	4.2.7	Straightening after carburize only when approved by Bell	CC
18	5.2.1	Bell approve omission of load code on Class A parts (planning)	CC
19	5.2.2	Bell approve repair of copper plating used to mask Class B parts per AMS 2418	CC
19	5.4.1	Bell approve carburization temperature outside range of 1600 to 1700 °F	(4.2.1.2)
22	5.5.2.3	Bell approve method of ensuring core hardness conforms when max section thickness exceeds the indicated values	(4.2.1.2)
23	5.5.2.5.1	Bell approve time in quench oil outside range of 2-1/2 to five minutes	(4.2.1.2)
26	6.1.2	Bell approve subcontractor carburize loads	QS
26	6.1.3	Bell approve alternate method of hardness testing	CC
28	6.1.4.2	Bell approve Process Conformity for a part when required by drawing	DR
29	6.1.5.2	Source Qualification: Bell approve of alternate case depth ranges for Carburize Capability Tests	QS
29	6.1.5.2	Source Qualification: Submit Carburize Capability Test evalutions, load records and remaining case specimens to Bell	QS
30	6.1.5.4	Source Qualification: Bell assess the correlation between subcontractor laboratory results and Bell's own results	QS
31	6.1.6.3	Bell approve of extending frequency of monthly uniformity tests to be semi-annual	QS
32	6.2	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4424 - REV. G - NONDESTRUCTIVE INSPECTION OF BONDED AND COMPOSITE COMPONENTS			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
vi	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
4	2.6.1	Bell approve use of a production part as a reference standard	QS
5	2.6.1.1	Porosity reference standards: Void volume verification per Bell approved methods	QS
5	2.6.1.1	Porosity reference standards: Bell perform void volume quantification upon request	QS
6	2.7.1	Bell authorize tap hammers other than as specified	QS
7	2.7.2.1	Bell may request evidence of adequate light transmission and defect detection prior to acceptance of High Intensity Lights method	QS
7	2.7.5	Bell approve use of advanced methodologies and equipment not covered in BPS 4424	QS
12	4.2	Bell approve proposed NDI methods/techniques	QS
12/13	4.3	Bell approve written procedure for Class I parts	QS
13	4.3	Procedures for ultrasonic testing approved and filed at Bell	QS
16	4.8	Parts suspected of water intrusion are subject to drying as defined by Bell	QS
19	5.7.1	Infrared/thermographic inspection limited to passive techniques unless specifically approved by Bell	QS
21	6.2	Records maintained in accordance with Bell procedures	QS
21	6.3	Quality Assurance Dept shall assure application of controls	QS

BPS 4426 - REV. B-3 - RETENTION OF BEARINGS UTILIZING RETAINING COMPOUND AND STAKING			
Page	Par.	Bell In-Process Functions	Cat.
i	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
6	4.3	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4436 - REV. A-2 - CADMIUM COATING (VACUUM DEPOSITED)			
Page	Par.	Bell In-Process Functions	Cat.
Title	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
Title	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
4	6.1.5	Qualification testing of specimens to be performed by Bell	QS
4	6.1.7	Records to be maintained for time specified by Bell	QS
4	6.2	Product Assurance Dept shall assure application of controls	QS

BPS 4442 - REV. C - APPLICATION OF POLYURETHANE ENAMEL			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
12	6.5	Product Assurance Dept shall assure application of controls	QS

BPS 4445 - REV. B - EXTERNAL ROLL THREADING OF METALS			
Page	Par.	Bell In-Process Functions	Cat.
7	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
7	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
20	5.1	Process plan shall be documented and on file for Bell review	QS
20	5.2	Bell provide source qualification by alloy group prior to production	QS
21	5.2.(g)	Bell provide instructions for qualification for materials not listed	QS
27	Table 3, Note 1	Bell provide instructions for macroetching of materials that are not listed	CC
28	Table 4, Note 1	Bell provide instructions for microetching of materials that are not listed	CC
29	6.1.1.1	Quality Department conform blanks for each lot	QS
29	6.1.2.1	Quality Department approve thread rolling set-up for each lot	QS
30	6.3	Quality Department lot acceptance based upon an inspection plan	QS
31	6.6	Quality Department shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4451 - REV. H - APPLICATION OF EPOXY PRIMER			
Page	Par.	Bell In-Process Functions	Cat.
5	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
21	6.4	Quality Dept shall assure application of controls	QS

BPS 4453 - REV. C - CONDUCTIVITY INSPECTION OF WROUGHT ALUMINUM ALLOYS TO DETERMINE HEAT TREAT CONDITION			
Page	Par.	Bell In-Process Functions	Cat.
-	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
-	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
2	2.3	Bell approve conductivity instrument-probe combination for tubing if not listed in 2.3	CC
8	4.2.3	Bell provide acceptance criteria for 2024 tubing if not listed in Table 5	CC
13	6.2	Product Assurance Dept shall assure application of controls	QS

BPS 4456 - REV. B - ANTI-FRETTING TREATMENT FOR TITANIUM			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
1	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
7	6.1.4	Records shall be maintained for time specified by Bell	QS
7	6.2	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4458 - REV. F - STRUCTURAL ADHESIVE BONDING USING INTERMEDIATE - HIGH PERFORMANCE SUPPORTED AND UNSUPPORTED ADHESIVE FILM			
Page	Par.	Bell In-Process Functions	Cat.
vii	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
vii	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
5	2.3	Bell approve test equipment that does not meet 299-947-399 or a recognized standard such as ASTM, JIS, etc.	QS
7	3.5.c	Bell drawing and/or design specification will include destructive test sketch and testing per 299-947-091 when Bell deems necessary * - This is already reflected in the Bell design data when applicable	*
9	3.7	Bell approve planning for Class I structure and Controlled Items (Primary, Critical, Flight Safety)	(4.9.1)
9	3.7	Bell reserves the right to review and approve/disapprove planning for Class II and non-controlled items	QS
11	4.1.2	If minimum relative humidity cannot be maintained, then Bell approve plan to condition vacuum bagging materials to prevent cracking	QS
13	4.4	Surface treated parts that are stored in uncontrolled environment shall be sealed in a bag (MB 1882) or other Bell approved method	QS
13	4.5	Bell-approved clean, dry gloves * - The MB gloves indicated are already Bell approved	*
14	4.6.1	Bell approve process for prefitting of details if not as specified	(4.9.1) (4.9.2)
17	4.8.3.1	Class I bonded assemblies: If drawing does not specify destructive testing, then submit to Bell for disposition (exceptions noted)	(4.9.1)
19	4.9.1	Class I, First Part Qualification (FPQ) approved by Bell	DR
19	4.9.1	Class I, FPQ: Production parts may be added to previously defined part families which may not require additional First Part Qualifications upon the approval of Bell	(4.9.1)
19	4.9.1	Class I, FPQ: Prior manufacturing experience may be presented to Bell for approval as a substitute to First Part Qualification for certain parts	(4.9.1)
20	4.9.1.1	Class I, FPQ Plan approved by Bell	(4.9.1)
20	4.9.1.1	Class I, FPQ Plan: Bell witness all manufacturing steps of FPQ	QS
20	4.9.1.1.e.(4)	Class I, FPQ Plan: Prior to temperature survey, Bell agree to evaluating for a variety of loading configurations	(4.9.1)
21	4.9.1.1.f.(2)	Class I, FPQ Plan: Bell NDE Lab approval of NDE and techniques	(4.9.1)
21	4.9.1.2.b	Class I, FPQ Report: Bell approve production planning	(4.9.1)
22	4.9.1.2.c	Class I, FPQ Report: Bell grant provisional approval for production of parts without a completed FPQ	CC

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2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4458 (cont'd)			
Page	Par.	Bell In-Process Functions	Cat.
22	4.9.1.2.c.(3)	Class I, FPQ Report: For provisional approval, Bell determine what engineering entity has MR authority to receive the submittal of non-conformities	CC
22	4.9.2	Class II, FPQ Report approved by Bell	DR
23	4.9.2	Class II, FPQ Report: Bell may require witness all manufacturing steps of FPQ	QS
23	4.9.2	Class II, FPQ Report: Prior manufacturing experience may be presented to Bell for approval as a substitute to First Part Qualification for certain parts	(4.9.2)
23	4.9.2.a.(5)	Class II, FPQ Report: Bell NDE Lab approval of NDE and techniques	(4.9.2)
23	4.9.2.b	Class II, FPQ Report: Submit completed materials to Bell when applicable	(4.9.2)
23	4.9.2.c	Class II, FPQ Report: Bell approve production planning	(4.9.2)
24	4.9.2.d	Class II, FPQ Report: Bell grant provisional approval for production of parts without a completed FPQ	CC
24	4.9.2.d.(3)	Class II, FPQ Report: For provisional approval, Bell determine what engineering entity has MR authority to receive the submittal of non-conformities	CC
25	4.9.4	Re-qualification requirements and frequency as established by Bell	(4.9.1) (4.9.2)
26	4.9.4	Bell determine whether full or partial FPQ is required when changes trigger re-qualification	(4.9.1) (4.9.2)
26	4.9.5	Process Control Testing: Bell approve use of industry peel strength standard if 299-947-399, Method 306 not used	QS
26	4.9.5	Bell may waive Process Control Testing for Class II parts	QS
27	4.9.5.b	Bell may waive Process Control Testing for Class I parts if statistical analysis supports	QS
28	5.1.2	Bell approve materials used in the fabrication of non-metallic tooling which contacts uncured composite materials or surfaces prepared for bonding	QS
29	5.2.2.1.b	Primer Application Qualification: Bell approve use of equivalent test panels	QS
30	5.2.2.1.i	Primer Application Qualification: Bell issue written notification of approved personnel	QS
30	5.2.2.1.1	Primer Application Qualification: Bell approve alternate techniques for measuring primer thickness	QS
33	5.3.1.2.c	Bell approve additional layers of adhesive on faying surfaces	(4.9.1) (4.9.2)
35	5.3.1.8	Bell approve alternative warming times than specified for materials subject to sub-ambient storage	QS
39	5.4.4	Alternative methods for mold preparation documented in Bell approved planning	(4.9.1) (4.9.2)
41	5.5	Traceability of thermocouple to a certification not required unless specified by Bell	QS
41	5.5	Bell specify when thermocouple wires have more than three twists	QS
45	6.1	Bell delegate quality functions to operators	QS
46	6.2	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4462 - REV. C-1 - FORMING TITANIUM SHEET			
Page	Par.	Bell In-Process Functions	Cat.
i	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
i	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
4	I.2.7	Bell approve use of open flame heating in spin forming operations	CC
10	I.5.2.4	Chemical metal removal per 5.2.3 or BPS 4389, or other Bell approved process	CC
12	I.5.4.2.2	6Al-4V & 6Al-4V ELI formed in ST or STA condition: Bell establish procedure for stress relief	CC
13	I.5.6	Bell approve process procedure for subcontractor spin forming operations	CC
13	I.5.8 Note	Commercially pure & 6Al-4V formed in ST or STA condition: Coordinate planning with Bell	CC
14	I.6.1.2	Records shall be maintained for time specified by Bell	QS
14	I.6.2	Product Assurance shall assure application of controls	QS
18	III.5.3(b)(2)	6Al-4V & 6Al-4V ELI hot formed in ST or STA condition: Bell establish hot forming temperature	CC
19	IV.4.1	Superplastic Forming Qualification: Determine material, equipment and processing technique parameters and submit to Bell	CC

BPS 4464 - REV. C - APPLICATION OF POLYURETHANE COATING			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
17	6.2	Quality shall assure application of controls	QS

BPS 4465 - REV. E - APPLICATION OF POWDERED COATINGS			
Page	Par.	Bell In-Process Functions	Cat.
1	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
1	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
16	6.2	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4467 - REV. D - HARDNESS TESTING AND REQUIREMENTS OF METALS			
Page	Par.	Bell In-Process Functions	Cat.
4	Front Matter	Subcontractors/Variation Requests: Submit to Bell for approval of variations	QS, CC
4	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
10	4.1.2	Bell approve use of alternate hardness scales when results in larger indentations on finished surfaces	CC
10	4.1.2	Consult Bell when suitability of equivalent hardness scales is in question	QS
12	4.2.1	Contact Bell when hardness value not provided on engineering drawing and BPS 4467 does not cover	CC
14	6.1.1	Product Assurance Dept shall assure application of controls	QS

BPS 4470 - REV. C - IN-PROCESS WELDING OF CASTINGS			
Page	Par.	Bell In-Process Functions	Cat.
iv	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
iv	Front Matter	Facility Approval: Facilities shall be surveyed and approved by Bell	QS
2	2.1	Welding to be accomplished by GTAW unless otherwise approved by Bell	QS
3	3.2.b	Welding allowed when approved by Bell via SMDAR (when not Class IIB casting or permitted by engineering drawing)	QS
4	4.1	Bell approve facility welding process procedure	QS
5	5.1.3	Bell approve plan to weld beyond 3 repair weld cycles	QS
6	6.1	Bell approve facility's welder qualification procedure	QS
6	6.1.1	Welder qualification: Bell approved mechanical testing lab and foundry approved to BPS 4309 Radiographic Inspection shall qualify test welds	QS
7	6.3.2.c	When Bell approves weld repair via SMDAR, a weld map, chart or photograph detailing weldable defects shall be recorded	QS
7	6.4	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4481 - REV. A-2 - APPLICATION OF EPOXY/ZINC COATINGS			
Page	Par.	Bell In-Process Functions	Cat.
i	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
6	5.3.5	Bell approve use of chemical paint removers for rework	QS
6	6.2	Product Assurance Dept shall assure application of controls	QS

BPS 4496 - REV. BASIC-1 - ION VAPOR DEPOSITION OF ALUMINUM			
Page	Par.	Bell In-Process Functions	Cat.
i	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
i	Front Matter	Facility Approval: Facilities shall be surveyed and approved by Bell	QS
4	2.7	Suitable equipment for chemical analysis of coating material and control of process solutions available at coating facility or Bell approved lab	QS
5	2.8	Suitable equipment for salt spray testing available at coating facility or Bell approved lab	QS
13	6.3	Records to be maintained for period of time specified by Bell	QS
13	6.5	Product Assurance Dept shall assure application of controls	QS

BPS 4501 - REV. BASIC - ELECTROPOLISHING OF METALS			
Page	Par.	Bell In-Process Functions	Cat.
i	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
i	Front Matter	Facility Approval: Facilities and Equipment shall be surveyed and approved by Bell	QS
2	2.5	Temperature controllers/indicators: Depending upon Bell requirements, calibrate at regular intervals or maintain temperature records	QS
7	6.1.4.4	Bell qualify each supplier	QS
7	6.3	Records maintained for period of time specified by Bell	QS
8	6.5	Product Assurance Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4555 - REV. BASIC-1 - THIN FILM SULFURIC ACID ANODIZE			
Page	Par.	Bell In-Process Functions	Cat.
ii	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
ii	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
11	6.1.6	Records maintained for period of time specified by Bell	QS
11	6.2	Product Assurance Dept shall assure application of controls	QS

BPS 4578 - REV. A - SUPERFINISHING - CHEMICALLY ASSISTED TUMBLING			
Page	Par.	Bell In-Process Functions	Cat.
v	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
v	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
11	6.1.4.1	Bell approve surface finish sampling and/or inspections when other than as indicated	CC
11	6.1.6	Records maintained and retained in accordance with Bell procedures, for the time specified by Bell	QS
11	6.1.7	Bell approve written Process Procedures for Controlled Item Parts	DR
13	6.3	Quality Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4579 - REV. BASIC - NON-CYANIDE COPPER PLATING			
Page	Par.	Bell In-Process Functions	Cat.
vi	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
vi	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
15	6.1.6	Records maintained for period of time specified by Bell	QS
15	6.1.6.1	Bell approve Process Method Card	DR
15	6.1.7	Product Assurance Dept shall assure application of controls	QS

BPS 4583 - REV. BASIC - PASSIVATION - CITRIC ACID METHOD			
Page	Par.	Bell In-Process Functions	Cat.
iv	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
iv	Front Matter	Facility Approval: Facilities and equipment shall be surveyed and approved by Bell	QS
12	6.1.6	Records maintained for period of time specified by Bell	QS
13	6.2	Quality Dept shall assure application of controls	QS

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

BPS 4588 - REV. BASIC - SELECTIVE BRUSH COPPER PLATING			
Page	Par.	Bell In-Process Functions	Cat.
v	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
v	Front Matter	Facility Approval: Facilities shall be surveyed and approved by Bell	QS
6	3.1	Consult Bell for application usage guidance	QS
6	3.1.1	Bell approve use on surfaces other than steels	CC
6	3.1.1	Consult Bell prior to application on non-ferrous substrate materials	QS
6	3.1.2	Bell approve use for rework, repair or touchup of existing copper plating prior to heat treat	QS
8	4.3	Bell approve omission of embrittlement relief bake	CC
8	4.5.1	Bell approve re-plating of surfaces with existing plating removed by rework or damage	QS
9	4.6	Training may be from an instructor designated by Bell	QS
16	6.2	Quality Dept shall assure application of controls	QS

LTP 1024 - REV. C - LABORATORY TESTING AND EVALUATION PROCEDURE FOR PROTOTYPE FORGING CONFORMING TO BPS 4017			
Page	Par.	Bell In-Process Functions	Cat.
4	Front Matter	Subcontractors: Submit to Bell for approval of variations	QS, CC
6	2.3	Contact Bell for test diagram when not in engineering drawing * - Refer to BPS 4017, 4.1.4.2 for missing forging test diagrams	*
7	3.1	Bell approve testing lab. All testing performed by a single lab unless approved by Bell.	QS
7	3.2	Use of a Bell approved NDT source for magnetic particle and penetrant inspections.	QS
7	3.4	Test specimens and remnants may be disposed of or remitted to an outside party at the request or approval of Bell.	QS
8	4	Additional tests may be required by Bell furnished test diagram	(2.3)
9	4.3.1	Bell approve use of a material different than specified by engineering drawing for grain flow evaluation, when necessary	CC
11	4.3.7	Questionable grain size shall be reviewed by Bell	DR
11	4.3.7.3	Aluminum: Core containing large grained areas shall be reviewed by Bell	(4.3.7)

2. BELL PROCESS SPECIFICATIONS: IN-PROCESS FUNCTIONS (cont'd)

LTP 1032 - REV. A-1 - LABORATORY TESTING AND EVALUATION PROCEDURE FOR FOUNDRY CONTROL CASTINGS PURCHASED TO BPS 4163			
Page	Par.	Bell In-Process Functions	Cat.
3	5	(EO LTP 1032 A-1) Bell approved NDT source for MPI or FPI of foundry control casting	QS

SAS 1052 - REV. E - TUBES, SWAGED, STEEL, INTERNALLY THREADED			
Page	Par.	Bell In-Process Functions	Cat.
-	-	None	-

SAS 1053 - REV. X - TUBES, CONTROL, ALUMINUM, SWAGED INTERNALLY THREADED			
Page	Par.	Bell In-Process Functions	Cat.
2	-	Contact Bell Engineering for irregularities beyond the scope of this SAS	QS

SAS 3029 - REV. B - TUBES, CONTROL, ALUMINUM SWAGED, TO BE THREADED, RIVETED OR BONDED			
Page	Par.	Bell In-Process Functions	Cat.
-	-	None	-

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS

This section contains definition of how Erickson shall act in place of Bell regarding the instances deemed to be design-related (DR) in Section 2. It also identifies the entity at Erickson that shall perform the function.

BPS 4017				
1		Subject:	FORGING TEST DIAGRAM	
	Page	Par.	Original Bell Text	Erickson PMA
	16	4.1.4.2	Older drawings, which may not incorporate forging test plans, shall have a test diagram created by BHT Metallic Materials & Processes upon request.	Older drawings, which may not incorporate forging test plans, shall have a test diagram **provided by Erickson Incorporated**.
	Additional instances directly related to 4.1.4.2:		4.2.7.1: Erickson approve use of tensile specimen sizes and geometries other than as specified on forging test diagram 9.3.1.1: Titanium: BSTOA forgings do not require grain flow evaluation unless specified by Erickson LTP 1024, 2.3: Contact Erickson for test diagram when not in engineering drawing	
	Erickson Entity: Action:		Structures Engineering • If test diagram is not available from Bell, develop test diagram based upon the design requirements for the resulting part(s). • If alternate specimen configurations are required (par. 4.2.7.1), incorporate them into the test diagram.	

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

<table>
<tr><td colspan="5">BPS 4017</td></tr>
<tr><td rowspan="4">2</td><td colspan="2" align="right">Subject:</td><td colspan="2">FORGING PROCESS PROCEDURE</td></tr>
<tr><td>Page</td><td>Par.</td><td>Original Bell Text</td><td>Erickson PMA</td></tr>
<tr><td>19</td><td>4.2.3. (a)</td><td>Establish and submit to BHT Supplier Product Assurance a forging process procedure (BHT Form No. 58116). The forging process procedure shall be approved by BHT Metallic Materials & Processes and Supplier Product Assurance.</td><td>Establish and submit to Erickson Incorporated a forging process procedure (Erickson Form No. 7038). The forging process procedure shall be approved by Erickson.</td></tr>
<tr><td colspan="2" align="right">Additional instances directly related to 4.2.3.(a):</td><td colspan="2">4.1.4.3: Test specimens that are not sectioned from forging only if approved by Erickson on the Forging Process Procedure
4.2.2 Note: Rolling processes during manufacture of open die or hand forgings only if approved by Erickson on the Forging Process Procedure
4.2.2.2: Flame cutting of flash or tong holds only if approved by Erickson on the Forging Process Procedure
4.2.3.1: Forging Process Procedure submitted to Erickson for evaluation and approval
7.3.2.3: Tool Steels: Cooling Practice detailed on Forging Process Procedure
7.3.2.5: Tool Steels: Heat Treatment detailed on Forging Process Procedure
8.3.2.3: CRES & PH: Cooling Practice detailed on Forging Process Procedure
9.3.2.3: Titanium: Protective Coating detailed on Forging Process Procedure
9.3.2.5: Titanium: Beta Forging temperatures and reductions specified on Forging Process Procedure
9.3.2.9: Titanium: Cooling Practice detailed on Forging Process Procedure
11.3.2.4: Magnesium: Heat treatment detailed on Forging Process Procedure
BPS 4139, 6.2.3.2.1.(d): Aluminum, Tensile tests: Separately forged specimens may be tested where permitted by material specification, engineering drawing, or the Bell approved Forging Process Procedure</td></tr>
<tr><td colspan="2" align="right">Erickson Entity:
Action:</td><td colspan="2">Manufacturing Engineering
• Ensure that the Forging Process Procedure meets the requirements of the design data. Enlist the support of the forging source, the metallurgical lab and/or Erickson Design/Structures Engineering as required.
• Approve the Forging Process Procedure.</td></tr>
</table>

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

<table>
<tr><td colspan="5">BPS 4017</td></tr>
<tr><td rowspan="4">3</td><td colspan="2" style="text-align:right">Subject:</td><td colspan="2">PROTOTYPE FORGING REPORT</td></tr>
<tr><td>Page</td><td>Par.</td><td>Original Bell Text</td><td>Erickson PMA</td></tr>
<tr><td>19</td><td>4.2.3.(c)</td><td>Evaluate a prototype forging in accordance with SQRM-001, BPS 4017, and LTP 1024, and submit the detailed report to BHT. The prototype forging report shall be approved by the BHT Metallic Materials & Processes.</td><td>Evaluate a prototype forging in accordance with BPS 4017 and LTP 1024, and submit the detailed report to Erickson Incorporated. The prototype forging report shall be approved by Erickson.</td></tr>
<tr><td colspan="2" style="text-align:right">Erickson Entity:
Action:</td><td colspan="2">Manufacturing Engineering
• Ensure that the Prototype Forging Report meets the requirements of the design data. Enlist the support of the forging source, the metallurgical lab and/or Erickson Design/Structures Engineering as required.
• Approve the Prototype Forging Report.</td></tr>
</table>

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

BPS 4017				
4	Subject:		FORGING PROCEDURE & TOOLING CHANGES	
	Page	Par.	Original Bell Text	Erickson PMA
	20	4.2.4	… Any changes which BHT determines will affect the metallurgical characteristics or physical conformance of the forging shall be re-approved as specified in paragraph 4.2.3. All changes, other than die replacement (resink) from masters, shall be resubmitted on form 58116. NOTE: No changes shall be made on MAP (makes a primary part), MAC (makes a critical part), or MAF (makes a flight safety part) forgings without prior BHT Metallic Materials & Processes approval.	… Any changes which **Erickson** determines will affect the metallurgical characteristics or physical conformance of the forging shall be re-approved as specified in paragraph 4.2.3. All changes, other than die replacement (resink) from masters, shall be resubmitted on **Erickson Form No. 7038**. NOTE: No changes shall be made on MAP (makes a primary part), MAC (makes a critical part), or MAF (makes a flight safety part) forgings without prior **Erickson** approval.
	Erickson Entity: Action:		Manufacturing Engineering • For changes that affect the metallurgical characteristics or physical conformance of the forging, and/or that affect an MAP, MAC, or MAF forging, re-approve per paragraph 4.2.3. Consult with the forging source, the metallurgical lab and/or Erickson Design/Structures Engineering as required in order to make that determination.	

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

<table>
<tr><td colspan="5">BPS 4140</td></tr>
<tr><td rowspan="4">1</td><td colspan="2" style="text-align:right">Subject:</td><td colspan="2">MASTER HEAT TREAT CARD APPROVAL</td></tr>
<tr><td>Page</td><td>Par.</td><td>Original Bell Text</td><td>Erickson PMA</td></tr>
<tr><td>7</td><td>I.4.2.2</td><td>The Bell Helicopter Metallic Materials & Processes Laboratory shall approve the detailed Master Heat Treat Card (MHTC) for heat treatment…</td><td>Erickson Incorporated shall approve the detailed Master Heat Treat Card (MHTC) (Erickson Form No. 7030) for heat treatment…</td></tr>
<tr><td colspan="2" style="text-align:right">Additional instances directly related to I.4.2.2:</td><td colspan="2">I.4.2.3.2: Approve alternate forms for Master HT Card
II.4.2.2.1: Low Alloy Steels: Condition of parts at time of normalizing on Master HT Card
II.4.2.4: Low Alloy Steels: Section thickness per Table 6 on Master HT Card
II.4.2.13: Low Alloy Steels: Straightening method on Master HT Card
III.4.2.6: CRES: Straightening method on Master HT Card
IV.4.2.10: Maraging & PH Steels: Straightening method on Master HT Card
V.4.2.6: Ultra-High Strength: Straightening method on Master HT Card</td></tr>
<tr><td colspan="2" style="text-align:right">Erickson Entity:
Action:</td><td colspan="2">Manufacturing Engineering
• Ensure that the Master Heat Treat Card meets the requirements of the design data. Enlist the support of the heat treat processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required.
• Approve Master Heat Treat Card.</td></tr>
</table>

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

BPS 4140				
2	Subject:		THICKNESS IN EXCESS OF TABLE 6 - LOW ALLOY	
	Page	Par.	Original Bell Text	Erickson PMA
	24	Table 6 Note (2)	Thicknesses in excess of the requirement may be accepted by approving the Master Heat Treat Card. Substantiation data shall be provided to the Metallic Materials & Processes Laboratory, including a destructive test specimen submitted for evaluation to verify the heat treatment meets the desired material properties.	Thicknesses in excess of the requirement may be accepted by approving the Master Heat Treat Card. Substantiation data shall be provided to **Erickson Incorporated**, including a destructive test specimen submitted for evaluation to verify the heat treatment meets the desired material properties.
	Erickson Entity: Action:		Manufacturing Engineering • Ensure that destructive test results validate that heat treatment achieves the desired material properties. Enlist the support of the heat treat processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required.	

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

BPS 4140				
3	Subject:		H-11/H-12 STEEL HEAT TREAT REWORK	
	Page	Par.	Original Bell Text	Erickson PMA
	46	Table 19 Note (3)	When parts fail to respond to the minimum tensile or hardness shown for these tempering temperatures, contact Metallic Materials & Processes Laboratory for rework schedule. (Multiple heat treatments of H-11 and H-12 may cause excessive grain growth.)	When parts fail to respond to the minimum tensile or hardness shown for these tempering temperatures, contact **Erickson Incorporated** for rework schedule. (Multiple heat treatments of H-11 and H-12 may cause excessive grain growth.)
	Additional instances directly related to Table 19 Note (3):		V.4.2.2: Ultra-High Strength: H-11/H-12: Rework card submitted to Erickson for multiple HT	
	Erickson Entity: Action:		Manufacturing Engineering • Ensure that rework meets the requirements of the design data. Enlist the support of the heat treat processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required.	

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

BPS 4140				
4	Subject:		INDUCTION ANNEALING - PROCESS PLAN APPROVAL	
	Page	Par.	Original Bell Text	Erickson PMA
	54	VII.4.2.1	The detailed process plan for each part number shall be approved by the Metallic Materials & Processes Laboratory prior to induction annealing of the first lot of production parts. … When there is any change… a new induction annealing data card must be prepared and approved by the Metallic Materials & Processes Laboratory prior to processing parts. Bell Helicopter approved frozen planning… may be used in lieu of an induction annealing data card.	The detailed process plan for each part number shall be approved by **Erickson Incorporated** prior to induction annealing of the first lot of production parts. … When there is any change… a new induction annealing data card must be prepared and approved by **Erickson** prior to processing parts. **Erickson** approved frozen planning… may be used in lieu of an induction annealing data card.
	Erickson Entity: Action:		Manufacturing Engineering • Ensure that the induction annealing process plan meets the requirements of the design data. Enlist the support of the heat treat processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required. • Approve process plan.	

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

BPS 4163				
1	Subject:		FOUNDRY CONTROL TEST DIAGRAM	
	Page	Par.	Original Bell Text	Erickson PMA
	8	3.5.13	Foundry control test diagrams show the locations where test specimens are to be excised from the foundry control casting. This diagram is either incorporated into the engineering drawing, or is an engineering drawing marked by BHT Metallic Materials and Processes to show specified test locations.	Foundry control test diagrams show the locations where test specimens are to be excised from the foundry control casting. This diagram is either incorporated into the engineering drawing, or is an engineering drawing **provided by Erickson Incorporated** to show specified test locations.
	Erickson Entity: Action:		Structures Engineering • If foundry control test diagram is not available from Bell, then develop one based upon the design requirements for the part(s).	

BPS 4163				
2	Subject:		APPROVAL OF FOUNDRY CONTROL	
	Page	Par.	Original Bell Text	Erickson PMA
	9	4.2.2	… the foundry shall submit a copy of the foundry control evaluation report, nondestructive testing reports, casting process procedures, and radiographic inspection film to the buyer. These items shall then be forwarded to BHT Metallic Materials and Processes and Supplier Product Assurance for final approval. …	… the foundry shall submit a copy of the foundry control evaluation report, nondestructive testing reports, casting process procedures, and radiographic inspection film to **Erickson Incorporated** for final approval. …
	Additional instances directly related to 4.2.2:		4.2.2.3: Erickson approve use of radiographically nonconforming castings for foundry control evaluation	
	Erickson Entity: Action:		Manufacturing Engineering • Ensure that the Foundry Control meets the requirements of the design data. Enlist the support of the casting source, a metallurgical lab and/or Erickson Design/Structures Engineering as required. • Approve the Foundry Control.	

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

<table>
<tr><td colspan="5">BPS 4163</td></tr>
<tr><td rowspan="4">3</td><td colspan="2" align="right">Subject:</td><td colspan="2">CASTING PROCESS PROCEDURE</td></tr>
<tr><td>Page</td><td>Par.</td><td>Original Bell Text</td><td>Erickson PMA</td></tr>
<tr><td>10</td><td>4.2.4</td><td>The Casting Process Procedure shall document process parameters, evaluation methods, and process sequences. Casting Process Procedures shall be approved by BHT Metallic Materials and Processes.</td><td>The Casting Process Procedure shall document process parameters, evaluation methods, and process sequences. Casting Process Procedures shall be approved by Erickson Incorporated.</td></tr>
<tr><td colspan="2" align="right">Additional instances directly related to 4.2.4:</td><td colspan="2">4.6: Erickson approve changes prior to shipment of castings
5.1.1.a: Erickson approve multiple-melt casting via Casting Process Procedure</td></tr>
<tr><td colspan="2" align="right">Erickson Entity: Action:</td><td colspan="2">Manufacturing Engineering
• Ensure that the Casting Process Procedure meets the requirements of the design data. Enlist the support of the casting source, the metallurgical lab and/or Erickson Design/Structures Engineering as required.
• Approve the Casting Process Procedure.</td></tr>
</table>

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

BPS 4212				
1	Subject:		MASTER HEAT TREAT CARD APPROVAL	
	Page	Par.	Original Bell Text	Erickson PMA
	11	4.2.1	The detailed process plan for heat treatment of primary, critical, and flight safety part numbers shall be approved by the Bell Helicopter Textron Metallurgical Laboratory prior to heat treatment of the first lot of that part number. This shall be accomplished through submittal of the process details on a Master Heat Treat Card in accordance with procedures of paragraph 4.2.2. …	The detailed process plan for heat treatment of primary, critical, and flight safety part numbers shall be approved by **Erickson Incorporated** prior to heat treatment of the first lot of that part number. This shall be accomplished through submittal of the process details on a Master Heat Treat Card (**Erickson Form No. 7049)** in accordance with procedures of paragraph 4.2.2. …
	Additional instances directly related to 4.2.1:		4.2.2.2: Submit to Erickson for approval of Master Heat Treat Card for primary, critical and flight safety parts 4.2.3.2: Erickson approve use of protective coatings for surface protection during heat treating 4.2.9: Erickson approve straightening procedures on Master Heat Treat Card 6.1.7.b: Erickson approve rework Heat Treat Cards	
	Erickson Entity: Action:		Manufacturing Engineering • Ensure that the Heat Treat Card meets the requirements of the design data. Enlist the support of the heat treat processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required. • Approve Heat Treat Card.	

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

<table>
<tr><td colspan="5">BPS 4304</td></tr>
<tr><td rowspan="5">1</td><td colspan="2">Subject:</td><td colspan="2">NITRIDING MASTER HEAT TREAT CARD APPROVAL</td></tr>
<tr><td>Page</td><td>Par.</td><td>Original Bell Text</td><td>Erickson PMA</td></tr>
<tr><td>8</td><td>4.1.1</td><td>… The Master Heat Treat Card for nitriding each part number must be approved by Bell MM&P Engineering prior to release of production parts. …</td><td>… The Master Heat Treat Card for nitriding each part number must be approved by Erickson Incorporated prior to release of production parts. …</td></tr>
<tr><td colspan="2">Additional instances directly related to 4.1.1:</td><td colspan="2">3.2.1: Erickson approve nitriding methods other than two stage gas nitriding
3.2.4: Erickson approve hardness scales other than as indicated for measuring case depth
3.2.6: Erickson approve pseudo-nitride cycle other than as indicated
4.1.1.2.1: Erickson evaluate nitrided part metallurgically
4.1.1.2.1: Erickson determine that the number and location of tests are sufficient when not specified on engineering drawing
4.1.1.2.2: Erickson evaluate finished part for case depth and stock removal
4.1.1.2.2: Erickson approve changes to nitriding or pre-nitride configuration on a new Master Heat Treat Card
4.1.3: Stress relief operations on Master Heat Treat Card
4.1.6: Nitriding cycles: Erickson approve deviations from Table 2 that are not already stated on engineering drawing
5.1.1: Erickson approve use of stop-off paints for masking
5.2.1: Erickson approve microhardness scales and conversion methods other than indicated
Table 2, Note 7: Erickson approve adjusted cycle to meet minimum case depth
Table 2, Note 11: Erickson approve Master Heat Treat Card for Malcomizing</td></tr>
<tr><td colspan="2">Erickson Entity:
Action:</td><td colspan="2">Manufacturing Engineering
• Ensure that the Master Heat Treat Card for nitriding meets the requirements of the design data. Enlist the support of the nitriding processor, the metallurgical lab and/or Erickson Design/Structures Engineering as required.
• Approve Master Heat Treat Card for nitriding.</td></tr>
</table>

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

BPS 4304				
2	Subject:		WHITE LAYER REMOVAL SET-UP CARD APPROVAL	
	Page	Par.	Original Bell Text	Erickson PMA
	13	4.1.12.2.2	Subcontractors. The white layer removal set-up card for each part (number) must be approved by Bell MM&P Engineering prior to processing parts. …	Subcontractors. The white layer removal set-up card for each part (number) must be approved by **Erickson Incorporated** prior to processing parts. …
	Additional instances directly related to 4.1.12.2.2:		5.1.9.(b): Erickson approve abrasive media other than as indicated 5.2.5: Erickson approve White Layer Removal Set-up Card when part qualification and conformity are completed	
	Erickson Entity: Action:		Manufacturing Engineering • Ensure that the White Layer Removal Set-Up Card meets the requirements of the design data. Enlist the support of the nitriding processor, the metallurgical lab and/or Erickson Design/Structures Engineering as required. • Approve the White Layer Removal Set-Up Card.	

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

<table>
<tr><td colspan="5">BPS 4409</td></tr>
<tr><td rowspan="4">1</td><td colspan="2" align="right">Subject:</td><td colspan="2">SHOT PEEN PROCESS CARD APPROVAL</td></tr>
<tr><td>Page</td><td>Par.</td><td>Original Bell Text</td><td>Erickson PMA</td></tr>
<tr><td>13</td><td>5.2</td><td>Shot peen process cards shall be prepared and submitted to BHT Metallic Materials and Processes for approval for all parts to be peened.</td><td>Shot peen process cards shall be prepared and submitted to Erickson Incorporated for approval for all parts to be peened.</td></tr>
<tr><td colspan="2" align="right">Additional instances directly related to 5.2:</td><td colspan="2">5.4.1: Internal lance set-ups for holes not required if approved by Erickson on shot peen process card
5.6.1.2: When engineering drawing does not include Almen test strip diagram, the locations are to be documented on shot peen process card and approved by Erickson
5.8.1: When intensity or coverage varies outside limits as described in 5.8.1 and subsequent Almen strip(s) check outside limits, then a new process card shall be submitted to Erickson</td></tr>
<tr><td colspan="2" align="right">Erickson Entity: Action:</td><td colspan="2">Manufacturing Engineering
• Ensure that the Shot Peen Process Card meets the requirements of the design data. Enlist the support of the shot peen processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required.
• Approve Shot Peen Process Card.</td></tr>
</table>

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

<table>
<tr><td colspan="5">BPS 4419</td></tr>
<tr><td rowspan="4">1</td><td colspan="2" align="right">Subject:</td><td colspan="2">SWAGED BLADE I.D.</td></tr>
<tr><td>Page</td><td>Par.</td><td>Original Bell Text</td><td>Erickson PMA</td></tr>
<tr><td>13</td><td>5.2.3</td><td>Sizing of the I.D. of the swaged blade shall be applied only after procedure and tooling development of the process (Manufacturing Engineering at BHT) and after verification through documented dimensional inspection of tubes sized and threaded by Methods II or III below.</td><td>Sizing of the I.D. of the swaged blade shall be applied only after procedure and tooling development of the process (Manufacturing Engineering at Erickson Incorporated) and after verification through documented dimensional inspection of tubes sized and threaded by Methods II or III below.</td></tr>
<tr><td colspan="2" align="right">Additional instances directly related to 5.2.3:</td><td colspan="2">5.1.4: Erickson develop/approve swaging without a mandrel to produce an undersized blade I.D. for subsequent I.D. sizing to remove excessive swaging folds
5.2.4.3.1: Erickson develop/approve Method III swaged blade I.D. sizing
5.3.11: Erickson develop/approve process for retapping of threads</td></tr>
<tr><td colspan="2" align="right">Erickson Entity:
Action:</td><td colspan="2">Manufacturing Engineering
• Develop/approve the procedure and tooling for sizing of swaged blade I.D's during production, to include cases which require swaging without a mandrel (Method III), as well as retapping of threads as part of the production process. Ensure that design requirements are met. Enlist the support of the swaging processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required.</td></tr>
</table>

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

BPS 4420				
1	Subject:		MASTER HEAT TREAT CARD APPROVAL	
	Page	Par.	Original Bell Text	Erickson PMA
	16	4.2.1.2	… The card shall be submitted to and approved by BHTI Metallic Materials Laboratory prior to the actual processing of the parts.	… The card shall be submitted to and approved by **Erickson Incorporated** prior to the actual processing of the parts.
	Additional instances directly related to 4.2.1.2:		1.1.3 Note: Electronic Master Heat Treat Card acceptable if approved by Erickson 4.2.1: Erickson approve changes to Master Heat Treat Card 4.2.2: Erickson approve of reworking carburized parts on Master Heat Treat Card 5.4.1: Erickson approve carburization temperature outside range of 1600 to 1700 °F 5.5.2.3: Erickson approve method of ensuring core hardness conforms when max section thickness exceeds the indicated values 5.5.2.5.1: Erickson approve time in quench oil outside range of 2-1/2 to five minutes	
	Erickson Entity: Action:		Manufacturing Engineering • Ensure that the Master Heat Treat Card meets the requirements of the design data. Enlist the support of the carburizing processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required. • Approve Master Heat Treat Card.	

BPS 4420				
2	Subject:		PART PROCESS CONFORMITY	
	Page	Par.	Original Bell Text	Erickson PMA
	28	6.1.4.2	… one segment, one fully heat treated part (unground) and one finish ground part from the same carburizing load shall be submitted to the BHTI Metallurgical Laboratory for evaluation …	… one segment, one fully heat treated part (unground) and one finish ground part from the same carburizing load shall be submitted to **Erickson Incorporated** for evaluation …
	Erickson Entity: Action:		Manufacturing Engineering • Ensure that the Part Process Conformity evaluation meets the requirements of the design data. Enlist the support of the carburizing processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required.	

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

<table>
<tr><td colspan="5">BPS 4458</td></tr>
<tr><td rowspan="4">1</td><td colspan="2">Subject:</td><td colspan="2">FIRST PART QUALIFICATION (FPQ), CLASS I</td></tr>
<tr><td>Page</td><td>Par.</td><td>Original Bell Text</td><td>Erickson PMA</td></tr>
<tr><td>19</td><td>4.9.1</td><td>Manufacturing planning (reference paragraph 3.5) including, but not limited to, MPIs, any deviations from an approved MPI, instructions and/or format for reporting First Part Qualifications results, planning instructions, part conformity inspection records, and part travelers, shall be approved by Bell Helicopter Non-Metallic Materials and Processes Engineering. …</td><td>Manufacturing planning (reference paragraph 3.5) including, but not limited to, Production Operation Instruction Sheets (POIS), any deviations from an approved POIS, instructions and/or format for reporting First Part Qualifications results, planning instructions, part conformity inspection records, and part travelers, shall be approved by Erickson Incorporated. …</td></tr>
<tr><td colspan="2">Additional instances directly related to 4.9.1:</td><td colspan="2">3.7: Erickson approve planning for Class I structure and Controlled Items (Primary, Critical, Flight Safety)
4.6.1: Erickson approve process for prefitting of details if not as specified
4.8.3.1: Class I bonded assemblies: If drawing does not specify destructive testing, then submit to Erickson for disposition (exceptions noted)
4.9.1: Class I, FPQ: Production parts may be added to previously defined part families which may not require additional First Part Qualifications upon the approval of Erickson
4.9.1: Class I, FPQ: Prior manufacturing experience may be presented to Erickson for approval as a substitute to First Part Qualification for certain parts
4.9.1.1: Class I, FPQ Plan approved by Erickson
4.9.1.1.e.(4): Class I, FPQ Plan: Prior to temperature survey, Erickson agree to evaluating for a variety of loading configurations
4.9.1.1.f.(2): Class I, FPQ Plan: Erickson NDT approval of NDE and techniques
4.9.1.2.b: Class I, FPQ Report: Erickson approve production planning
4.9.4: Re-qualification requirements and frequency as established by Erickson
4.9.4: Erickson determine whether full or partial FPQ is required when changes trigger re-qualification
5.3.1.2.c: Erickson approve additional layers of adhesive on faying surfaces
5.4.4: Alternative methods for mold preparation documented in Erickson approved planning</td></tr>
<tr><td colspan="2">Erickson Entity:
Action:</td><td colspan="2">Manufacturing Engineering
• Ensure that First Part Qualification and resulting production planning meet the requirements of the design data. Enlist the support of the bonding processor and/or Erickson Design/Structures Engineering as required.
• Approve First Part Qualification and production planning.</td></tr>
</table>

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

<table>
<tr><td colspan="5">BPS 4458</td></tr>
<tr><td rowspan="4">2</td><td colspan="2">Subject:</td><td colspan="2">FIRST PART QUALIFICATION (FPQ), CLASS II</td></tr>
<tr><td>Page</td><td>Par.</td><td>Original Bell Text</td><td>Erickson PMA</td></tr>
<tr><td>22</td><td>4.9.2</td><td>Notification of the First Part Qualification date and associated documentation shall be submitted to Bell Helicopter Non-Metallic Materials and Processes prior to manufacturing the part. …</td><td>Notification of the First Part Qualification date and associated documentation shall be submitted to Erickson Incorporated prior to manufacturing the part. …</td></tr>
<tr><td colspan="2">Additional instances directly related to 4.9.2:</td><td colspan="2">4.6.1: Erickson approve process for prefitting of details if not as specified
4.9.2: Class II, FPQ Report: Prior manufacturing experience may be presented to Erickson for approval as a substitute to First Part Qualification for certain parts
4.9.2.a.(5): Class II, FPQ Report: Erickson NDT approval of NDE and techniques
4.9.2.b: Class II, FPQ Report: Submit completed materials to Erickson when applicable
4.9.2.c: Class II, FPQ Report: Erickson approve production planning
4.9.4: Re-qualification requirements and frequency as established by Erickson
4.9.4: Erickson determine whether full or partial FPQ is required when changes trigger re-qualification
5.3.1.2.c: Erickson approve additional layers of adhesive on faying surfaces
5.4.4: Alternative methods for mold preparation documented in Erickson approved planning</td></tr>
<tr><td colspan="2">Erickson Entity:
Action:</td><td colspan="2">Manufacturing Engineering
• Ensure that First Part Qualification and resulting production planning meet the requirements of the design data. Enlist the support of the bonding processor and/or Erickson Design/Structures Engineering as required.
• Approve First Part Qualification and production planning.</td></tr>
</table>

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

BPS 4578				
1	Subject:		SUPERFINISHING: PROCESS PROCEDURE APPROVAL	
	Page	Par.	Original Bell Text	Erickson PMA
	11	6.1.7	… The Bell Helicopter Metallic Materials Laboratory & Drive Systems Design shall approve the process procedure for classified parts. …	… **Erickson Incorporated** shall approve the process procedure for classified parts. …
	Erickson Entity: Action:		Manufacturing Engineering • Ensure that the Process Procedure meets the requirements of the design data. Enlist support of the processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required. • Approve the Process Procedure.	

BPS 4579				
1	Subject:		NON-CYANIDE COPPER PLATING: PROCESS METHOD CARD APPROVAL	
	Page	Par.	Original Bell Text	Erickson PMA
	15	6.1.6.1	The written Process Method Cards shall be signed by the materials and processes engineer responsible for the process controls and the master card shall be filed on the Bell Textron intranet available to all with access rights. …	The written Process Method Cards shall be signed by **Erickson Incorporated**. …
	Erickson Entity: Action:		Manufacturing Engineering • Ensure that the Process Method Card meets the requirements of the design data. Enlist support of the processor, a metallurgical lab and/or Erickson Design/Structures Engineering as required. • Approve the Process Method Card.	

3. ERICKSON PMA DESIGN-RELATED FUNCTIONS (cont'd)

<table>
<tr><td colspan="5">LTP 1024</td></tr>
<tr><td rowspan="4">1</td><td colspan="2">Subject:</td><td colspan="2">QUESTIONABLE GRAIN SIZE - PROTOTYPE FORGING</td></tr>
<tr><td>Page</td><td>Par.</td><td>Original Bell Text</td><td>Erickson PMA</td></tr>
<tr><td>11</td><td>4.3.7</td><td>Questionable grain size shall be dispositioned "For BHTI Review".</td><td>Questionable grain size shall be dispositioned "For Erickson Review".</td></tr>
<tr><td colspan="2">Additional instances directly related to 4.3.7:</td><td colspan="2">4.3.7.3: Aluminum: Core containing large grained areas shall be reviewed by Erickson</td></tr>
<tr><td colspan="2">Erickson Entity:
Action:</td><td colspan="2">Manufacturing Engineering
• Evaluate grain size requirements per engineering drawing, BPS 4017, LTP 1024 and material specifications. Enlist services of a metallurgical lab and/or Erickson Structures Engineering as required.
• Approve/Disapprove the questionable grain size.</td></tr>
</table>