UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF LOUISIANA

TEXTRON, INC.	**: CASE NO:**
Plaintiff	**: JUDGE:**
v.	**: MAG. JUDGE:**
MERITOR, INC.	
Defendant	

COMPLAINT

Textron Inc., by and through its counsel, hereby states as follows for its Complaint against defendant Meritor, Inc.:

INTRODUCTION

Plaintiff, Textron Inc., is the prime contractor on a contract with the United States Navy to build the Ship-to-Shore Connector ("SSC"), a next-generation landing vessel designed to rapidly deploy military equipment and personnel from surface ships to shore.

Under Subcontract No. RCA-12-SSC-002 dated March 7, 2013 (the "Subcontract"), the Defendant, Meritor, Inc., was required to design, develop, qualify, test, and manufacture the Main Propulsion Systems Gearboxes for the SSC Program. Notwithstanding its contractual obligations, Defendant has failed to deliver Main Propulsion Gearboxes that are compliant with, *inter alia*, the Subcontract's Purchase Technical Specification ("PTS"), Equipment Specification for Main Propulsion Gearbox (hereinafter, "Specification"), No. 7870-947015, and Statement of Work No. 7870-927019, and has failed to provide a First Article Main Propulsion Gearbox that can pass First Article ("FA") Test.

During the design phase of the Subcontract, Textron and the Navy noted several instances where Meritor's design was not in accordance with the specifications. Specification No. 7870-947015, for example, required compliance and evaluation with various American Gear Manufacturer's Association ("AGMA") specifications, including AGMA 2001-D04, "Fundamental Rating Factors and Calibration Methods for Involute Spur and Helical Gear Teeth," and AGMA 925, "Effect of Lubrication on Gear Surface Distress." Additionally, during several initial tests, the parties discovered that the FA gearbox exhibited excessive heat generation. This excessive heat generation constituted a testing "failure" under the Statement of Work §§ 4.1.2 and 4.2.2 and the contractually required FA Test Plan. The parties also discovered that the FA gearbox exhibited signs of excessive scuffing, which also constituted a "failure" under §§ 4.1.2 and 4.2.2 and the FA Test Plan and FA Test Procedure.

Of the gearboxes Meritor delivered, Textron discovered that several contained unauthorized and unapproved modifications. As a result, Textron could not deliver any craft with the gearboxes to the Navy. After four years, Meritor has not yet provided a single compliant gearbox. Further, the First Article gearbox has not passed the FA test with satisfactory post-test inspection and absence of critical path failures as required by the Subcontract. Meritor's failures have caused significant delay and disruption, in breach of the Subcontract.

Textron respectfully requests this Court to find that Meritor has breached the Subcontract, causing damage to Plaintiff in excess of $7 million.

THE PARTIES

1. Plaintiff Textron, Inc. (hereinafter "Textron") is a Delaware corporation with its principal place of business at 40 Westminster Street Providence, Rhode Island 02903.

2. Defendant Meritor, Inc. (hereinafter "Meritor")[1] is an Indiana Corporation with its principal place of business at 2135 West Maple Road Troy, Michigan 48084.

JURISDICTION AND VENUE

3. The Court has jurisdiction over this matter pursuant to 28 U.S.C. § 1332(a) because the amount in controversy exceeds $75,000 and the dispute is between a Delaware corporation headquartered in Rhode Island and an Indiana corporation headquartered in Michigan.

4. This Court has personal jurisdiction over the Defendant because its representatives traveled to Louisiana to transact business with Textron regarding the Subcontract, the Subcontract was signed in Louisiana, and the parties conducted FA Testing in Louisiana. Additionally, the Subcontract (and Consent to Assignment under which Meritor Inc. assumed all responsibilities, obligations, and liabilities under the Subcontract), specifies that the parties "hereby submit to the exclusive jurisdiction and venue of … the Federal District Court associated with the location in which this [Subcontract] was issued by [Textron]." Textron issued the Subcontract in New Orleans, Louisiana.

5. Thus, Pursuant to 28 U.S.C. § 1391(b), venue is appropriate in the United States District Court for the Eastern District of Louisiana, in which a substantial part of the events giving rise to the parties' dispute occurred, and in which the Subcontract was issued.

6. Alternatively, this Court also has federal question jurisdiction under 28 U.S.C. § 1331, which states that "[t]he district courts shall have original jurisdiction of all civil actions arising under the Constitution, laws, or treaties of the United States."

[1] On August 31, 2017, Fabco Holdings, Inc., which owned RCA, and Textron Inc. d/b/a Marine & Land Systems, executed Consent to Assignment for the Subcontract, and associated purchase orders to Meritor, Inc.

7. The Subcontract states that the Subcontract is governed by Delaware law, except for specified portions, which are governed by federal common law:

> This [Subcontract] and any matter arising out of or related to this [Subcontract] shall be governed by the laws of the State of Delaware … ***except that*** any provision in this [Subcontract] that is (i) incorporated in full text or by reference from the Federal Acquisition Regulation (FAR); or (ii) incorporated in full text or by reference from any agency regulation that implements or supplements the FAR or; (iii) that is substantially based on any such agency regulation or FAR provision, ***shall be construed and interpreted according to the federal common law of government contracts*** as enunciated and applied by federal judicial bodies, boards of contract appeals, and quasi-judicial agencies of the federal Government.

8. The Subcontract incorporated numerous federal regulations, including FAR 52.233-4, *Applicable Law For Breach of Contract Claim* (OCT 2004), which states that the applicable law is United States Law. Thus, this Court has also jurisdiction under 28 U.S.C. § 1331 because Textron's claims involve disputes arising under federal common law.

STATEMENT OF FACTS

The Subcontract

9. On March 7, 2013, Textron, Inc. and Meritor, Inc. entered into the Subcontract in the firm-fixed price of $15,009,991. The Subcontract required Meritor to design and provide main propulsion gearboxes for use in Textron's Ship to Shore Connecter prime contract, number N00024-12-C-2401, with the U.S. Navy, Naval Sea Systems Command.

10. The Subcontract commenced on March 7, 2013 and will end on May 29, 2019, unless it is terminated in accordance with the terms and conditions in the Subcontract.

11. Of relevance to this case, the Subcontract contains: (1) Statement of Work ("SOW"), Main Propulsion Gearbox Ship-to-Shore Connector ("SSC") No. 7870-927019, Revision B dated August 7, 2012; and (2) Purchase Technical Specification ("PTS"),

Equipment Specification-Main Propulsion Gearbox SSC No. 7870-947015, Revision G dated February 15, 2013 (hereinafter "Specification").

12. The Subcontract includes an inspection clause, which states that:

> [a]ll products, including raw materials and components, and SELLER'S and its subcontractors' manufacturing facilities shall be subject to inspection and test by the BUYER [Textron], and the Government [Naval Sea Systems Command]…. ***Buyer may reject any Products not in conformity with the requirements and terms of this Contract, provided BUYER has first provided SELLER with an opportunity to repair and replace the Products to render them in conformity with the requirements and terms of this Contract at SELLER's expense***. In the event sampling techniques are utilized by BUYER to ascertain Product acceptability, entire lots may be returned when acceptable quality levels indicated rejection. BUYER may return rejected Products at SELLER's risk and expense at the full invoice price plus transportation charges and BUYER's handling charges…. ***All products delivered under this Contract shall strictly comply with the technical requirements defined in this Contract, absent Buyer's written consent.***

(Emphasis added).

13. The Subcontract requires timely performance in clause 25. Specifically, the Subcontract states "Seller's timely performance is a critical element of this [Subcontract]. Deliveries shall be strictly in accordance with the Delivery Schedule attached to this [Subcontract], and ***time is of the essence***." (Emphasis added).

14. Under the Subcontract's warranty provision, Meritor warranted that "all Work covered by this [Subcontract] shall conform to the specifications, drawings, samples, symbols or other descriptions specified by BUYER and shall be new, merchantable, and free from defects in material and workmanship and that all Work covered by this [Subcontract] are in accordance with Seller's design, drawings, or specifications, shall be fit and suitable for the purpose specified."

15. Subcontract Attachment 1, Clause 37 *Approvals*, states that:

> "[w]herever this [Subcontract] provides for submittal of designs,

> components, or other items for approval of BUYER, such approvals shall not be construed as BUYER's agreement as to the adequacy of said design, component, or item, nor as an agreement or acknowledgement that the design, component, or item shall meet the requirements of this [Subcontract]. Such approvals are solely for the purpose of insuring BUYER's knowledge of SELLER's plans and progress and shall indicate only that SELLER's general approach towards meeting requirements under this [Subcontract] is satisfactory. ***Such approvals shall in no way relieve the SELLER of its responsibility for any error or deficiency which may exist in the submitted design, component, or other item, as SELLER shall be responsible for meeting all requirements of this [Subcontract].***

(Emphasis added).

Statement of Work

16. The SOW "defined the effort required to develop the detailed design of the Main Propulsion Gearbox, manufacture production units, and [to] support the SSC craft test program."

17. Under the SOW (§ 3.0, *Scope of Work*), Meritor must provide "all of the facilities, material, equipment, logistics, services, manpower, quality assurance, inspection, test facilities, management organization, and control required for design, engineering, procurement, management, construction, testing, trials, and delivery of the Main Propulsion Gearbox in accordance with the requirements of this SOW."

18. The SOW required Meritor to provide one ship set of Main Propulsion Gearbox for use on LCAC 100, with options for additional ship sets, i.e., LCACs 102 through 108, if exercised.

19. The Main Propulsion Gearbox had to comply with the Specification and the SOW.

20. The SOW required a Preliminary Design Review ("PDR"), Critical Design Review ("CDR"), and FA Test.

21. The SOW also required Meritor to provide certain Subcontract Data Requirements List (SDRLs). Of relevance to Meritor's breach, the SOW required Meritor to provide:

SB095-1	Test Plan Gearbox First Article Test Plan
SB096-1	Test Procedure Gearbox First Article Test Procedure

22. Under § 4.5, *Commonality*, the SOW states:

> If, for any reason, the supplier proposes to install hardware or software on the Main Propulsion Gearbox that is a different make or model from the hardware or software installed on the first shipset, the supplier shall submit a substitution request to TM&LS for approval via a Certificate of Equivalency.

23. Related to design or hardware changes, §5.5.1, *Changes in Design*, states:

> No changes shall be made in the design or materials or parts listed in an approved parts list except when such changes are approved by TM&LS engineering. Approval of changes does not relieve the supplier of full responsibility for the results of such changes on any component characteristics. Change requests shall be submitted in accordance with SDRL SA003. Temporary material substitutions shall be made only after written approval of TM&LS Engineering.

24. The Program Schedule (§ 5.1) in the Statement of Work required the following delivery dates for the Main Propulsion Gearbox:

Date	**Event**
665 DAC	LCAC 100 Production Readiness Review (PRR)
700 DAC	LCAC 100 Start of Construction
20 July 2015	LCAC 100 Main Propulsion Gearbox Delivery Date
1695 DAC	LCAC 100 Craft Delivery
14 Jan 2016	LCAC 101 Main Propulsion Gearbox Delivery Date
15 Sep 2017	LCAC 102 Main Propulsion Gearbox Delivery Date
04 Dec 2017	LCAC 103 Main Propulsion Gearbox Delivery Date
22 Feb 2017	LCAC 104 Main Propulsion Gearbox Delivery Date
13 May 2018	LCAC 105 Main Propulsion Gearbox Delivery Date
02 Aug 2018	LCAC 106 Main Propulsion Gearbox Delivery Date
18 Oct 2018	LCAC 107 Main Propulsion Gearbox Delivery Date
30 Dec 2018	LCAC 108 Main Propulsion Gearbox Delivery Date

25. The schedule presented at CDR in January 2014 stated that FA Test would occur in January 2015 and that LCAC 100 gearboxes would be delivered in August 2015.

The Main Propulsion Gearbox Specification

26. As stated above, the Subcontract included Revision G of the Specification dated February 15, 2013.[2]

27. The Specification referenced in the Subcontract states that "a complete set of requirements for the SSC Gearbox System shall be obtained by referencing both this specification and the SSC General Specification. This specification's requirements take precedence over the SSC General Specification in case of conflict."

28. According to the Specification, the Gearbox System is mission critical equipment. Thus, it was critical for Meritor to deliver a compliant Gearbox System on time.

29. In § 3.1.1.9, *Lubrication Oil System*, the Specification provided the maximum inlet and outlet oil temperature and flow rate:

a. Gearbox inlet lube oil temperature: 71° C (160° F) maximum.
b. Gearbox outlet lube oil temperature: 93° C (200° F) maximum.
c. Gearbox lube oil flow rate: 80 GPM

30. The specification also specifically calls out the standards to use for gearbox bearings. Under § 3.6.7, the Specification stated:

> ***The gearbox shall be designed in accordance with*** the following standards: American National Standards Institute (ANSI)/American Gear Manufacturer's Association (AGMA) 6032, ANSI/AGMA 6011, ***ANSI/AGMA 2001***, ANSI/AGMA 6133, ***ANSI/AGMA 925***, and Mil. Spec. MIL-G-17859. The ANSI/AGMA and ANSI/AGMA ISO Standards shall take precedence over MIL-G-17859 in the event of conflicting requirements.

[2] On July 17, 2015, purchase order No. 95123, change order No. 5 modified the contract to replace revision G with revision H. Revision H dated October 7, 2014, made several changes, none of which are pertinent to Textron's claims. References to the Specification refer to revision G unless otherwise specified.

31. With respect to testing, the Specification defines testing failure. Article 4.0, *Quality Assurance* section 4.1.2, *Load (Cyclic) Test* states that:

> if the wear metal content exceeds the gear and bearing element manufacturers' recommended maximum levels, the source of the wear metals shall be determined, and repairs or redesign shall be effected as necessary. The 100-hour load (cyclic) test shall then be repeated. ***A failure of any critical (power path) gearbox component shall require a 100-hour retest.*** If a critical (power path) gearbox component fails, the 100-hour test shall be restarted following repair. ***Critical (power path) gearbox components include the following: gear elements, bearing elements,*** housings, gear element stub shafting and couplings connected to the test apparatus.

(Emphasis added).

32. Section 4.1.2 also states that "***a failure*** (cracks, breakage, overheating, ***scoring, and excessive wear) of any critical (power path) gearbox component as determined by the inspection shall require a 100-hour retest with new or redesigned components replacing the failed components***." (Emphasis added).

33. Under article 4.2, *Acceptance Testing*, § 4.2.2 *Load (Cyclic) Test* states that the ***lubrication oil temperature could not exceed the maximum allowable temperature*** specified by the gearbox manufacturer and that if it did, the five hour test would be stopped and the reason for overheating would be specified. Section 4.2.2 requires, like § 4.1.2, a five-hour retest if there is ***any*** failure of ***any*** critical (power path) gearbox component. Critical (power path) gearbox components is as defined in § 4.1.2. (Emphasis added).

Meritor's First Article Test Plan

34. In accordance with the Subcontract SOW, Meritor provided a FA Test plan, SDRL SB095-1 dated October 23, 2015. The plan stated that testing would be "performed on the Main Propulsion Gearbox Assembly to verify the design concurrent with the build for

LCAC 100 based upon gearbox need dates."

35. The FA Test required two tests on one gearbox assembly – a no load spin test and a 100 hour load cyclic test. The tests were to be performed in accordance with the Specification.

36. The test plan provided the following test schedule:

Task	Expected Start	Expected Completion
First Article Build	12/7/15	12/28/15
First Article Spin Test	1/11/16	1/15/16
First Article Durability Test	1/18/16	2/15/16
First Article Test Report	2/16/16	3/16/16

37. The test plan provided test objectives for both tests. For the no load spin test, test objectives relevant to Textron's claims include ensuring the gearbox ***did not***: (1) ***generate excessive heat***, i.e. the lube oil leaving the gearbox could not exceed 200 F; (2) exhibit leakage of lubrication oil greater than the Specification, i.e. 30 cc/hour from entire gearbox; and (3) ***exhibit signs of abnormal wear, tooth contact or tooth damage after the test***.

38. For the 100 hour load cyclic test, test objectives relevant to Textron's claims include ensuring the gearbox ***did not***: (1) ***generate excessive heat***, i.e., the lube oil leaving the gearbox could not exceed 200 F; (2) contaminate the lubrication oil with excess metal particles, or water content exceeding 1,500 ppm; (3) exhibit leakage of lubrication oil greater than the Specification, i.e. 30 cc/hour from entire gearbox; and (4) ***exhibit unacceptable gear tooth contact patterns***.

39. The 100 hour load cyclic test prohibited failure of any critical component. The plan defined "failure" as **"**cracks, breakage, ***overheating, scoring, or excessive wear"*** and ***critical components as "power path, gears, bearings, housing,*** shafts and couplings.*"* A critical failure would require a 100-hour retest with new or re-designed components replacing

the failed ones.

First Article Test Procedure

40. In addition to the FA Test plan, Meritor provided the FA Test Procedure, SDRL SB096-1, revision 5 dated February 2, 2017. The FA Procedure was a summary of the procedures in the Specification.

41. The FA Procedure stated – like the test plan – that the FA Test comprised the no load spin test and the 100 hour load cyclic test.

42. For both tests, the FA Procedure provided requirements that included language similar to the FA Test Plan's test objectives regarding the prohibition on excessive heat and abnormal wear.

43. After the 100 hour load cyclic test, the FA Procedure required observation of the gears for scuffing and referenced the scuffing criteria provided as Appendix E to the FA Procedure.

44. Appendix E: Scuffing Criteria stated that acceptance criteria was based on paragraph 4.1.2 of the Specification, and that the criteria for scuffing was based upon AGMA 1010 E95 and ASTM D5182-97.

45. The scuffing criteria stated:

> 1. Each gear will be evaluated independent of other gears.
> 2. Failure criteria reached when the summed total width of scuffing (adhesive wear) or scoring damage on all teeth on a gear is estimated to equal or exceed 10% of the total gear teeth width….
> 3. No single tooth may show scuffing (adhesive ear) or moderate scoring across more than 25% of the gear tooth width….
> 4. Gear teeth will be documented and measured (as required) during the gear tooth contact pattern checks performed during LT1 of the First Article Testing.
> 5. Final documentation and measurements will be performed upon the completion of the 100 hour First Article Testing and the subsequent tear-down inspection.

46. In addition to providing scuffing failure criteria, the failure criteria also included visual definitions of gear wear, i.e., photographs that would be used to determine failure criteria in accordance with AGMA 1010 E95 and ASTM D5182-97.

Meritor's Design Fails to Meet the Specification

47. Performance issues began early on in the project, starting with the design of the Main Propulsion Gearbox. The design issues were predominantly due to Meritor's insistence on designing to ISO standards, specifically ISO 6336. The Subcontract neither references nor allows compliance with "ISO 6336." During the design phase, the Navy consistently found conflicts between the lower ISO 6336 standards and the more stringent (and safe) AGMA standards required under the Subcontract.

48. On August 24, 2014, the Navy disapproved of Meritor's gearbox design by issuing its response to Contract Data Requirements List ("CDRL") B102-001. This was the first time that Textron learned about the Navy disapproval of Meritor's design. The Navy noted that Powertrain Engineers, Inc.'s high speed gear analysis was performed using ISO 6336 standards and pointed out that the Specification required compliance with AGMA 2001. The Navy sought confirmation that the gearbox would meet the requirements of AGMA 2001.

49. On January 26, 2015, the Navy disapproved Meritor's gearbox design by issuing its response to CDRL B102-001-1. The Navy noted that Meritor's 95% chance of scuffing was "very troubling." The Navy pointed Meritor to AGMA 925, which states that a probability greater than 30% is considered high risk. The Navy asked Meritor to explain why 95% scuffing was acceptable and agreed that checking for scuffing after FA Test was an acceptable but incomplete mitigation plan.

50. The Navy also noted concerns over the gear life of the gearboxes and cited

AGMA 2001 noncompliance as an issue. As stated above, Specification section 3.6.7, *Bearings* required compliance with AGMA 2001. Specifically, the Navy was concerned that the "lack of safety factor seems to artificially inflate the life of the gears or provide an extremely marginal design considering the lack of prior experience and testing in this particular application."

51. On March 30, 2015, Textron notified Meritor that its gearbox design "will fall significantly short of design life requirements with critical component failings within less than 100 operational hours based on the AGMA standard called out in Reference 2 [Rev. H of the Specification]." Textron sought confirmation from Meritor that its gearbox configuration was compliant or that Meritor would provide a plan to ensure that the gearbox would be fully compliant with Reference 2.

52. Three months after the CDRL B102-001-1 disapproval, the Navy again rejected CDRL B102-001-2 on April 6, 2015 due to Meritor's design. One of the issues with Meritor's design related to the gear life.[3] Specifically, the CDRL disapproval referenced Meritor's failure to design allowable stresses with calculations based on ANSI/AGMA 2001. Meritor's design used ISO 6336-5 calculations – which were not included in the Subcontract SOW or Specification. AGMA and ISO have different allowable stress values for gear material at the gear's contact pressure. Thus, it was improper for Meritor to rely on ISO 6336.

53. The Navy also rejected Meritor's gearbox design because it found Meritor's tolerance for a high risk of scuffing unacceptable. Because the first article gearbox was already built, the Navy permitted Meritor to proceed with the FA Test, which would confirm

[3] The two primary limits for gear life are pitting (a fatigue failure resulting from repeated cycles of high contact pressure on the gear teeth eventually resulting in loss of small pockets of metal) and bending (the fatigue life of the gear teeth undergoing cyclic stress loads and deflecting the teeth).

whether the risk of scuffing was actually low risk as claimed by Meritor.

54. Additionally, the Navy took issue with the 50% reliability factor for bending and the 90% reliability factor for pitting (surface). The Navy stated that "[f]ailure due to bending fatigue provides little, if any, warning and can result in catastrophic and collateral damage." The Navy advised that if there was a rationale for the factors being used then a deviation would be considered. If there was no rationale for the factors being used then the Navy sought revised calculations and documentation.

55. Ultimately, Meritor's gearbox design did not comply with Subcontract Specification, § 3.6.7, *Bearings* and AGMA 2001.

56. Meritor provided a new schedule for the FA Test and the delivery of LCAC 100 gearboxes. The schedule pushed the FA Test to October 2015 and the LCAC 100 delivery to November 2015.

57. Following the Navy's April 2015 design rejection, Textron engaged Bell Helicopter Flight Systems (hereinafter "Bell") to assist with the gear redesign. With Bell's assistance, Meritor provided a revised gearbox design that met the AGMA 2001 gear life requirements.

58. On April 29, 2015, in a letter to Meritor, Textron explained that Subcontract Specification, Revision H, § 3.6.6 required compliance with "American National Standard Institute (ANSI)/American Gear Manufacturer's Association (AGMA) 6032, ANSI/AGMA 6011, ***ANSI/AGMA 2001***, ANSI/AGMA 6133, ***ANSI/AGMA 925***, and Mil. Spec. MIL-G-17859." Textron further explained that Meritor's reference and reliance on ISO 6336 was noted as a non-conformance in the comments section in SDRL SB102, dated September 2, 2014, and in subsequent revisions to SDRL SB102.

59. For Mean Time Between Failure ("MTBF"), Textron stated that Specification § 3.6.6 required compliance with AGMA standards and did not reference or contemplate "ISO 6336."

60. Textron further explained that the gear life requirement is separate and distinct from the MTBF requirements listed in § 3.8.1, and that Meritor could meet 4900 hour MTBF with one or more gears below 4,500 hour design life but the gears would not comply with §§ 3.2.7 or 3.6.23. Textron stated that Meritor "must show how the gearbox meets the life requirement of 3.2.7 and 3.6.20" of the Specification.

61. For gear scuffing, Textron explained that while there is "no explicit pass/fail requirement for scuffing probability, a gear set that exhibits scuffing and scoring will create other issues with gear and gear box life. The AGMA 925 calculation showing 95% probability of scuffing indicates a high risk of the gears exhibiting wear that will lead to other issues." Textron also explained away Meritor's test results that exhibited no scuffing. Meritor's test was run at a much lower operating temperature. Thus, the Specification's actual conditions of speed and temperature were not duplicated.

62. Textron further noted that per Specification § 4.1.2, following the 100-hour test "***a failure*** (cracks, breakage, ***overheating, scoring, and excessive wear) of any critical (power path) gearbox component as determined by the inspection shall require a 100-hour retest with new or redesigned components replacing the failed components."*** Because scoring and excessive wear were defined as "failure[s]," Textron warned Meritor that it would be responsible for redesign and replacement. Textron advised Meritor to take the contractually required approach and design to AGMA's scuffing probability.

63. In the letter's concluding paragraph Textron stated:

> Textron remains ***extremely concerned with [Meritor's] insistence to ignore [sic] the high scuffing probability risk resulting from the AGMA analysis and the reluctance to incorporate corrective actions prior to conduct of [sic] first article test***. This reluctance to significantly reduce the scuffing probability prior to conduct of [sic] the first article test could have a ***detrimental effect on the success of the gearbox test and subsequent delivery of the gearbox for LCAC 100***.

(Emphasis added). Textron requested a revised plan and schedule to revise the gearbox design by COB May 6, 2015.

64. On August 12, 2015, Meritor provided a new schedule that slated FA Testing for December 2015 and LCAC 100 gearbox delivery in January 2016.

65. Finally, on September 28, 2015, in order to maintain the prime contract's schedule, the Navy conditionally approved Textron's CDRL deliverable B102-001-4. The Navy stated, however, that based on AGMA 925 calculations, many of Meritor's gears had a high risk of failure due to scuffing. The Navy stated "in the interest of maintaining LCAC 100 schedule, CDRL B102-001-4, the Gearbox Design and Analysis Report, is 'conditionally approved.'"

66. The Navy and Textron believed that the high probability of scuffing was due to Meritor's decision to proceed with the less expensive 8620 alloy steel material Meritor used to build all the power path gears. While Textron and the Navy agreed back in April/May 2015 that the use of X-53 material would reduce the probability of scuffing, Meritor insisted on using the 8620 material. The Navy noted that if Meritor used the 8620 material then Meritor needed a plan to mitigate schedule risk if scuffing was observed during the 100 hour FA Test.

67. On November 6, 2015, Textron notified Meritor that its failure to pass the FA Test and deliver a compliant gearbox was endangering performance on Textron's prime contract. Textron warned Meritor that it needed to strictly "adhere to the currently scheduled

dates for first article tests and material delivery dates." The letter stated affirmatively that "no movement to the right on the schedule will be tolerated" and that "suppliers slipping scheduled dates would be assessed decrements to invoices and potentially be charged back for efforts [Textron's] Production team incurs due to a lack of material in house."

68. Meritor provided a revised schedule on November 13, 2015. The new schedule slated FA Testing in February 2016 and delivery of LCAC 100 gearboxes in March 2016.

69. As of the November 13, 2015, Meritor's design issues caused roughly nine months of schedule slippage.

Meritor's FA Gearbox Failed First Article Testing

70. The first attempt of the FA Test occurred in February 2016. The test results revealed 100% scuffing or "scoring or excessive wear" on all four gears in the propeller section of the FA gearbox. During this test, low oil pressure/reduced oil flow was also observed.

71. Although Meritor did not know at the time whether the scuffing was due to the 8620 steel material used or the reduced lube oil pressure, Meritor decided to retest the FA gearbox using the 8620 material. Textron advised against this because it would cause additional schedule slip.

72. In accordance with the Specification, the parties scheduled the next FA Test in April 2016.

73. In April 2016, the parties attempted another FA Test. Although the oil pressure and flow was acceptable, the test yet again revealed scuffing or "scoring or excessive wear," which was a test failure according to the Specification and the test plan. The FA Test Plan defined failure as scuffing or "scoring or excessive wear." Thus, there was no question

the gearbox failed FA Test.

74. Due to the FA Test failure, in accordance with the test plan and Specification § 3.6.7, *Bearings*, Meritor had to repair and retest the FA gearbox.

75. Meritor finally agreed to Textron's recommendation to test a gearbox using X-53 materials and set the next FA Test for some time in September 2016.

76. The parties convened in September 2016 to perform another FA Test. Textron suspected that the FA gearbox generated excessive heat but the test duration was too short to confirm due to the test stand failure.

77. The parties ran another FA Test in September 2016. This time, Meritor's gearbox "test stand" broke because high speed bearings in the test stand failed. The high speed bearings in the test stand are identical to the high speed bearings in the FA gearbox. In accordance with the Specification and the FA Test Test Plan, Meritor would need to redesign/rework the FA gearbox and conduct a new FA Test.

78. In response to the test stand failure, Meritor developed a recovery schedule. The schedule that included using modified 155 mm bearings as stop-gaps for interim gearboxes (and the test stand) while Meritor developed a long term solution using 180 mm bearings. The recovery schedule specified the next FA Test in March 2017 and the delivery of LCAC 100 gearboxes with modified 155 mm bearings in February 2017.

79. In a letter on December 22, 2016, Textron notified Meritor that it was "frustrated with the performance and the inability of [Meritor] to successfully test and deliver a specification compliant gearbox….Continual delays and schedule slips are of a significant concern to M&LS and have ***now resulted in disruption and a T&T craft delivery delay***." (Emphasis added).

80. Textron advised Meritor that it would hold invoices until Meritor successfully completed a 100-hour test and delivered the gearboxes due in January 2017.

81. In response to a Meritor email dated January 16, 2017, on January 19, 2017 Textron reserved its right to seek costs and additional damages due to Meritor's failure to provide a compliant gearbox and for its failure to pass FA Test. Specifically, the letter stated:

> the development of the Main Propulsion Gearbox has seen numerous challenges to reach the state that we have arrived at today…. ***The delays attributable to the aforementioned changes equal over eighteen months from the original delivery date and remains an open risk today pending completion of a successful 1st Article Test 100-hour test***. The delay of fully compliant gearboxes available to MLS SSC Production has caused significant program delays and disruptions. The magnitude of the delays and distribution include, but is not limited to, craft production schedule delays, production workarounds, out of sequence work, productions starts-and-stops, and increased involvement of outside subject matter experts (SMEs), all of which have driven additional costs that were not planned….MLS is hereby reserving our right to seek reimbursement for all additional costs and damages."

(Emphasis added).

82. The parties held Factory Acceptance Test in February 2017 of the interim gearboxes, which confirmed excessive heat generation issue. Specification § 3.1.1.9, *Lubrication Oil System*, outlines the minimum inlet and outlet oil temperature that the gearbox must meet in order to pass the test.

83. In response to the most recent failure to meet Specification requirements, Meritor began heat abatement studies. The parties decided that the next FA Test would be conducted using 180 mm bearings with heat reduction shrouds. The parties scheduled the next FA Test for some time in May 2017 and the delivery of the LCAC 100 gearboxes with 180 mm high speed bearings in July 2017.

84. During the May 2017 FA Test, Meritor's test stand failed again because a test

stand gear with a hole too close to the gear tooth caused the gear tooth to break.

85. Additionally, the test stand failed because Meritor's replacement gear was out of tolerance. Meritor's broken test stand was a violation of the Subcontract's requirement for Meritor to provide "all test facilities necessary for the delivery of the Main Propulsion Gearbox." The broken test stand delayed Meritor from performing additional FA Tests.

86. Meritor provided a revised schedule that slipped the FA Test to July 2017 and delivery of LCAC 100 gearboxes 104 and 105 in June 2017.

87. During the July 2017 FA Test, the FA gearbox completed 100 hours of testing but still failed the FA Test. Meritor's lock ring failed 75 hours into testing and Meritor had to create a temporary lock ring repair in order to complete the 100-hour test. Meritor had to revise and improve its lock ring prior to incorporation into production gearboxes.

88. Meritor has still not passed an FA Test.

Gearbox Delivery

89. The Subcontract required Meritor to deliver gearboxes for LCAC 100 through LCAC 108, which corresponds with Textron's prime contract craft delivery.

90. In January 2018, Meritor delivered LCAC 102 gearboxes 108 and 101. The gearboxes were built with an unauthorized modification to the lift fan and propeller section idlers (sleeves and pins). Later testing revealed that the gearboxes were not the final configuration and would need to be replaced.

91. In February/March 2018, Meritor delivered LCAC 103 gearboxes (102 and 103). Like LCAC 102 (gearboxes 108 and 101), the LCAC 103 gearboxes were built with an unauthorized modification to the lift fan and propeller section idlers and later testing revealed that the gearboxes were not in final configuration, which required replacement.

92. In June 2018, the parties conducted component testing of the lift fan and propeller section idlers, which revealed that all previously installed gearboxes had to be removed and replaced.

93. Meritor's unauthorized substitution of these parts violated SOW §§ 4.5 and 5.5.1, which prohibited unauthorized design changes.

94. The need to rework gearboxes 101, 102, 103, 108 added additional effort, resulted in inefficient production, and impacted the schedule.

95. On August 7, 2018, Timken submitted a report containing observations and photographs of Meritor's bearings that had been tested on Meritor's test stand. Timken noted that the most obvious damage to the bearing was due to discoloration damage to the cup OD due to fretting corrosion, which is the result of "contact under load with relative movement between the surfaces." The gearbox was also damaged on the A side roller end and small end damage as well as cone "scuff." The "[r]oller end scoring is caused by a lube film failure resulting in metal to metal contact of the roller large ends and the cone large rib. Run long enough in this condition the bearing can start to see heat generation and potential thermal run away."

96. After roughly four years of design, testing and delivery, Meritor has neither provided a compliant gearbox nor passed any FA Test.

97. As stated in Subcontract clause 25, ***time is of the essence.*** Meritor's inability to supply a compliant gearbox that can pass FA Test within a reasonable period of time is a breach of the Subcontract.

Textron Asserts Claims Against Meritor

98. On August 9, 2018, Textron notified Meritor that it has not yet delivered a compliant gearbox in accordance with the Subcontract's delivery requirements for LCAC 100 through LCAC 108.

99. The letter further stated that Meritor's design problems ***"caused significant delays without completing the detail design, first article test, and delivery production units."*** Textron specifically noted the following issues: (1) the failure to meet fundamental gear life requirements and high probability of scuffing; (2) the inadequate high-speed segment SKF bearings, which resulted in replacement of the SKF bearings with 155 mm optimized bearings and subsequently after, replacement with 180 mm bearings; (3) excessive heat generation, which required extensive modifications to incorporate shrouds, trays, and vents in the high-speed segment; and (4) the test stand experienced multiple failed gears and instrumentation problems.

100. Textron reminded Meritor that Textron had to employ the technical assistance of Bell's design group to oversee the technical management of the program and to provide program oversight, assist with material acquisition of X-53, and travel to Meritor's main plant and test sites.

101. The letter also stated:

> "[l]ate delivery and noncompliant deliverables have also resulted in Textron performing out-of-sequence work and implementing workarounds on LCAC 100 through LCAC 103. This disruption has impacted our productivity, extended the period of performance of some of our other subcontractor's, and most importantly, jeopardized our ability to successfully execute our prime contract obligations. It has also extended the prime contract's period of performance beyond that which was originally contemplated.

102. Textron went on to say that Meritor's Subcontract failure caused Textron to

incur significant additional costs due to ***rework, re-procurement costs, and significant delay and disruption in the construction and test of the SSC lead craft (LCAC 100) and subsequent crafts***. (Emphasis added). Textron stated that "Meritor's breach of contract due to noncompliances with the Subcontract and latent defects have resulted in damages totaling $7,071,244 as of 8 June 2018." Textron further stated that "[t]he damages Textron has incurred relate to the issues identified above as is through 8 June 2018. New and on-going noncompliances are not included herein and we expressly reserve our rights to pursue recovery of those damages in the future."

103. On August 15, 2018, Meritor responded that "Meritor will not pay any supposed costs or expenses incurred by Textron for alleged delays or any other alleged issues relating to the SSC gear box [sic] development under the Subcontract." Meritor's assertion that it would not pay Textron for the delays and other issues related to its noncompliant gearbox design was based on in an incorrect assumption that Textron somehow misled Meritor regarding the status of the program before the execution of the Consent to Subcontract.

104. Textron did not mislead Meritor regarding the status of the program. Before assuming liability under the Subcontract, Meritor should have performed due diligence, which would have revealed all of the issues addressed in Textron's claim letter.

105. In response to Meritor's August 15, 2018 response letter, on August 20, 2018, Textron further reiterated its claims against Meritor and explained that Meritor's recent unauthorized gearbox design change "has introduced additional delays into the schedule and will result in additional gearbox testing." Textron advised that it had "no other option but to continue with the preparation and filing of our initial claim, as well as accelerate our second claim associated with the most recent gearbox failures."

COUNT I
Breach of Contract

106. Paragraphs 1 through 105 (inclusive) of this Complaint are incorporated into this paragraph as if fully set forth herein.

107. **Gear Life:** Meritor breached § 3.6.6 of the Subcontract's Specification. Section 3.6.6 required Meritor to design its gearbox to meet AGMA 2001 Fundamental Rating Factors for gear life. In contravention of § 3.6.6, Meritor persisted in designing its gearbox to the lower, noncompliant ISO 6336 standard despite the Navy rejecting Meritor's ISO 6336 design in August 2014. After Meritor's noncompliant gearbox failed FA Test in April 2015, Textron and Bell were forced to assist Meritor with a redesign of Meritor's gearbox in order to become compliant with § 3.6.6 and meet AGMA 2001 standards. Because Meritor's breach caused schedule delays and cost impacts, Textron is entitled to damages.

108. **Scuffing:** Meritor breached Specification article 4.0 § 4.1.2, *Load (Cyclic) Test*, article 4.2 Acceptance Testing, § 4.2.2, *Load (Cyclic) Test*, and "Test Objective" ¶ 1(f) of "SDRL SB095-1," as incorporated into the Subcontract by SOW. Specification §§ 4.1.2 and 4.2.2 and SDRL SB095-1 Test Objective ¶ 1(f) prohibited failure, defined as cracks, overheating, scoring, or excessive wear, of any critical (power path; gears, bearings… shafts and couplings). As explained above, Meritor's design repeatedly failed testing due to unacceptably high levels of scuffing and scoring, which constitute "excessive wear" to the "bearings" and "power path." Under Specification § 4.1.2 and 4.2.2 and SDRL SB095-1 Test Objective ¶ 1(f), this was grounds for "failure." After Meritor's noncompliant gearbox failed FA Test in April 2015, Textron and Bell Helicopter were forced to assist Meritor with a redesign of Meritor's gearbox in order to pass Specification §§ 4.1.2 and 4.2.2 and SDRL SB095-1 Test Objective ¶ 1(f). Because Meritor's breach caused schedule delays and cost

impacts, Textron is entitled to damages.

109. **Oil Temperature:** Meritor breached § 3.1.1.9 of the Subcontract's "Equipment Specification." Section 3.1.1.9 required Meritor to design its gearbox so that it would not cause the surrounding oil to exceed the contractually specified "maximum" oil temperature. In violation of § 3.1.1.9, Meritor's gearbox failed testing in February 2017 because it, *inter alia*, caused the oil temperature at testing to exceed the contractually specified maximum temperature. Textron and Bell Helicopter were forced to assist Meritor with a redesign of Meritor's gearbox in order to become compliant with § 3.1.1.9. Because Meritor's breach caused schedule delays and cost impacts, Textron is entitled to damages.

110. **Test Stand:** Meritor breached § 3.0 of the Subcontract's SOW. Section 3.0 required that Meritor "shall provide all of the…equipment…test facilities, management organization, and control required for…testing, trials, and delivery of the Main Propulsion Gearbox in accordance with the requirements of this SOW." A piece of equipment called a "test stand" was essential equipment in order for a gearbox to be tested. During testing, Meritor's poorly designed gearbox broke the "test stand." Meritor did not have a backup test stand. As such, Meritor was required to undertake efforts to construct a new test stand. This caused a months-long schedule delay wherein no testing could occur, which in turn disrupted Textron's critical path to LCAC construction and forced Textron to incur standby and disruption costs. Because Meritor's breach caused schedule delays and cost impacts, Textron is entitled to damages.

111. **Failure to Meet Delivery Deadlines:** Meritor breached § 5.1 of the Subcontract's SOW. Section 5.1 specified the Subcontract's "Program Schedule" of delivery deadlines, including the "20 July 2015" deadline for "LCAC 100 Main Propulsion Gearbox

Delivery Date." Because Meritor designed a contractually noncompliant gearbox and failed FA Test, Meritor has missed all product delivery deadlines to date including the "100…Gearbox Delivery" deadline. Meritor's failure to timely deliver compliant products by the delivery deadlines constitutes a breach of § 5.1 of the SOW, which has forced Textron and Bell to accelerate efforts to assist Meritor with a redesign of Meritor's gearbox in order for Textron not to miss its Prime Contract delivery deadlines with the Navy. Because Meritor's breach caused schedule delays and cost impacts, Textron is entitled to damages.

112. **Unapproved Part Substitution:** Meritor breached § 4.5, *Commonality* and § 5.5.1, *Changes in Design* of the Subcontract's SOW. Meritor breached § 4.5 and § 5.5.1 of the SOW when it substituted the idler (sleeves and pins) in LCA 102 (gearboxes 108 and 101) and LCAC 103 (gearboxes 102 and 103) without prior approval from Textron. When Textron tested the gearboxes with the unauthorized idlers, the testing revealed that the gearboxes were not in final configuration and had to be removed. Thus, Meritor's unauthorized substitution of idlers resulted in inefficient production and schedule delay. Because Meritor's breach caused inefficient production and schedule delays, Textron is entitled to damages flowing therefrom.

REQUEST FOR RELIEF

Wherefore, Textron respectfully requests this Court to enter judgment in its favor against defendant Meritor that:

1. Textron is entitled to relief on all of its claims;
2. Textron is entitled to an amount in excess of $7 million in damages or an amount to be proved at trial;
3. Textron is entitled to legal interest on the damages awarded; and

4. Textron is entitled to such other and further relief as the Court deems just and equitable.

Respectfully submitted,

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