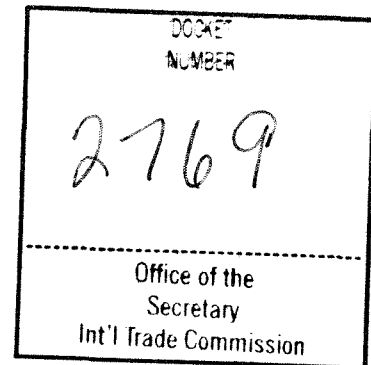


SMITH R. BRITTINGHAM IV
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November 5, 2010

CBI 11-41
VIA HAND DELIVERY

The Honorable Marilyn Abbott
Secretary
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436



Re: *Certain Turbomachinery Blades, Engines, and Components
Thereof*

Dear Secretary Abbott:

Enclosed for filing on behalf of complainant United Technologies Corporation are the following documents in support of complainant's request that the Commission commence an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended. A request for confidential treatment of confidential exhibits 20 and 21 is included with this filing.

Complainant submits the following documents for filing:

1. An original and twelve (12) copies of the verified complaint and an original and six (6) copies of the accompanying exhibits, with the confidential exhibits segregated from the other material submitted (original and one (1) copy unbound, without tabs) (Rules 201.6(c), 210.4(f)(3)(i), and 210.8(a)(1)(i));
2. Two (2) additional copies of the complaint and accompanying non-confidential and confidential exhibits for service upon the proposed respondents (Rules 210.4(f)(3)(i), 210.8(a)(1)(iii), and 210.11(a));
3. Certified copies of United States Patent No. RE 38,040 ("the '040 patent"), included as exhibit 1 in the original complaint, and copies thereof included respectively as exhibit 1 in all copies of the complaint (Rule 210.12(a)(9)(i));
4. Certified copies of the assignments involving the '040 patent included as exhibit 3 in the original complaint, and copies thereof

The Honorable Marilyn Abbott
November 5, 2010
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included as exhibit 3 in all copies of the complaint (Rule 210.12(a)(9)(ii));

5. An identification of each license agreement for the '040 patent in paragraph ¶ 38 of the complaint (Rule 210.12(a)(9)(iii));
6. Certified copies and three (3) copies thereof of the prosecution history of the '040 patent are included as appendices A and B (Rule 210.12(c)(1));
7. Four (4) copies of each reference document mentioned in the prosecution histories of applications leading to the issuance of the asserted patents included as appendices C and D (Rule 210.12(c)(2));
8. One (1) additional copy of the complaint and the accompanying non-confidential exhibits for service upon the embassy in Washington, D.C. of the country of the foreign respondent (Rules 210.8(a)(1)(iv) and 210.11(a)(1)(ii)); and
9. A letter and certification pursuant to Commission Rules 201.6(b) and 210.5(d) requesting confidential treatment of confidential exhibits 20 and 21.

The products at issue in this investigation are engines used on commercial aircraft and components of such engines. Due to the size and expense of both the accused products and the domestic industry products, and the non-availability of the accused products, physical samples have not been provided. (Rule 210.12(b)).

Thank you for your attention to this matter.

Sincerely,



Smith R. Brittingham IV

Enclosures

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

In the Matter of:

**CERTAIN TURBOMACHINERY
BLADES, ENGINES, AND
COMPONENTS THEREOF**

Investigation No. 337-TA-____

**COMPLAINT UNDER SECTION 337
OF THE TARIFF ACT OF 1930, AS AMENDED**

COMPLAINANT

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PROPOSED RESPONDENTS

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Exhibit	Document
1.	Certified Copy of: Spear, <i>et al.</i> , United States Reissue Patent No. RE38,040, for Swept Turbomachinery Blade (Mar. 18, 2003)
2.	Certified Copy of: Spear, United States Patent No. 5,642,985, for Swept Turbomachinery Blade (Jul. 1, 1997)
3.	Certified Copy of the assignment records of the United States Patent and Trademark Office of Spear, <i>et al.</i> , United States Reissue Patent No. RE38,040, for Swept Turbomachinery Blade (Mar. 18, 2003)
4.	Copy of the 2009 Annual Report of Rolls Royce Group, plc
5.	List of foreign counterpart patents to RE38,040
6.	Declaration of Jayant Sabnis, Ph.D.
7.	Copy of <i>Trent 1000 Newsletter—May 2008 Issue 11</i>
8.	Copy of Rolls-Royce Brochure: <i>Trent 1000</i> (Jan. 6, 2010)
9.	Claim Charts: Infringement of Claims 1 and 2 of U.S. Patent RE38,040 by Representative Accused Product, Rolls Royce Trent 1000 Blades, Fans, and Engines.
10.	Lancashire Telegraph (June 2, 2004), “Rolls-Royce Order Joy”, http://www.lancashiretelegraph.co.uk/archive/2004/06/02/Lancashire+Archive/5837829.Rolls_Royce_order_joy/ .
11.	BBC News 20 July 2010 “Dreamliner jet makes flypast over Rolls-Royce in Derby,” http://www.bbc.co.uk/news/uk-england-derbyshire-10681946 .
12.	Copy of <i>Trent 1000 Newsletter Update</i> July 2007, Issue 8.
13.	Copy of pages from Rolls-Royce Website: http://www.rolls-royce.com/civil/products/largeaircraft/trent_1000/programme.jsp .
14.	Copy of Rolls-Royce’s “ <i>Trent 1000 Newsletter—March 2010 Issue 17</i> ”.
15.	Boeing Press Release (Jan. 22, 2008), http://www.boeing.com/news/releases/2008/q1/080122d_nr.html
16.	Boeing Press Release (Dec. 27, 2007), http://www.boeing.com/news/releases/2007/q4/071226a_nr.html
17.	<i>Rowlands v. Spear, et al.</i> , Patent Interference No. 105,195 (February 2, 2005).
18.	<i>Rolls-Royce v United Technologies Corporation</i> , 1:05-CV-362 (E.D. Va. 2006) Memorandum Opinion (March 31, 2009)
19.	<i>Rolls-Royce v United Technologies Corporation</i> , (Fed. Cir. 2006-1307) (May 5, 2010)

20.	CONFIDENTIAL: Claim Chart: The GP7000 Engine Practices the Invention of Representative Claim 1 of U.S. Patent RE38,040
21.	CONFIDENTIAL: Identification of United Technologies' Domestic Industry (Manufacturing)

TABLE OF APPENDICES

Appendix	Document
A	Certified copy of the prosecution history of: Spear, <i>et al.</i> , United States Reissue Patent No. RE38,040, for Swept Turbomachinery Blade (Mar. 18, 2003)
B	Certified copy of the prosecution history of: Spear, <i>et al.</i> , United States Patent No. 5,642,985, for Swept Turbomachinery Blade (Jul. 1, 1997)
C	Copies of References Cited in the Spear, <i>et al.</i> , United States Reissue Patent No. RE38,040, for Swept Turbomachinery Blade (Mar. 18, 2003)
D	Copies of References Cited in the prosecution history of: Spear, United States Patent No. 5,642,985, for Swept Turbomachinery Blade (Jul. 1, 1997)

I. INTRODUCTION

1. This Complaint is filed by United Technologies Corporation (“UTC”) under Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, based on the unlawful importation into the United States, the sale for importation, and the sale within the United States after importation, by owners, importers, or consignees of certain turbomachinery blades, engines, and components thereof that infringe United States Reissue Patent RE38,040 E (“the ’040 reissue patent” or “the asserted patent”).

2. The Respondents are Rolls-Royce Group plc and Rolls-Royce plc (sometimes collectively referred to as “Rolls-Royce”).

3. A certified copy of the ’040 reissue patent is attached to this Complaint as Exhibit 1. A certified copy of the prosecution history of the ’040 reissue patent is attached to this Complaint as Appendix A. The ’040 reissue patent was reissued from Spear, United States Patent No. 5,642,985 for Swept Turbomachinery Blade (the “ ’985 patent”). A certified copy of the ’985 patent is attached to this Complaint as Exhibit 2. A certified copy of the prosecution history of the ’985 patent is attached to this Complaint as Appendix B. Copies of the references cited in the ’040 reissue patent and ’985 patent are attached hereto as Appendices C and D, respectively.

4. UTC owns all right, title, and interest in the ’040 reissue patent. A certified copy of the recorded assignment of the ’040 reissue patent to UTC is attached to this Complaint as Exhibit 3.

5. An industry, as required by 19 U.S.C. § 1337(a)(2) and (3), exists in the United States relating to the technology protected by the asserted patent.

6. UTC seeks, as relief, an exclusion order barring from entry into the United States infringing turbomachinery blades, engines, and components thereof, imported by or on behalf of the Respondents. UTC also seeks, as relief, cease-and-desist orders prohibiting the sale for importation, importation, sale after importation, offer for sale, advertising, testing, the solicitation of sales, and other commercial activity relating to infringing turbomachinery blades, and engines, and components thereof.

II. COMPLAINANT

7. Complainant, United Technologies Corporation, is a Delaware corporation, with its principal place of business at the United Technologies Building, Hartford, Connecticut 06101.

8. UTC is engaged in the research and development, engineering, testing, and manufacturing, of aerospace and commercial products, in the United States, and throughout the world. UTC operates through seven companies (divisions): Carrier Corporation (A Delaware Corporation); Chubb Corporation (a Delaware corporation); UTC Fire & Security Corporation (a Delaware corporation); Hamilton Sundstrand Corporation (a Delaware corporation); Otis Elevator Company (a New Jersey corporation); Pratt & Whitney (an unincorporated division of UTC); Sikorsky Aircraft Corporation (a Delaware Corporation); and UTC Power Corporation (a Delaware corporation). UTC's Pratt & Whitney division is engaged in the research and development, engineering, testing, manufacture, and sale of jet engines and components thereof including turbomachinery blades. UTC's Pratt & Whitney division operates worldwide and produced revenues of \$12.58 billion in 2009, with approximately 36,000 employees supporting 11,000 customers in 195 countries around the world.

9. UTC's Pratt & Whitney division designs, conducts research and development, engineers, tests, manufactures, and sells turbomachinery blades and jet engines, and components

thereof, that practice the invention of the '040 reissue patent. Pratt & Whitney's products include commercial and military turbofan engines; spare parts and product support; and specialized engine maintenance and overhaul and repair services for airline, government, and private fleets, among other products and services.

10. Pratt & Whitney has engineering and research and development facilities in East Hartford, Connecticut; West Palm Beach, Florida; Mayaguez, Puerto Rico; and Canoga Park, California, among other locations throughout the world. At its East Hartford, Connecticut, facilities, Pratt & Whitney conducts research and development activities relating to turbomachinery blades, and engines, and components thereof, of the '040 reissue patent.

11. Pratt & Whitney has assembly and test facilities in East Hartford, Connecticut; Middletown, Connecticut; Bridgeport, West Virginia; and West Palm Beach, Florida, among other locations throughout the world. At its East Hartford, and Middletown, Connecticut, facilities, Pratt & Whitney conducts assembly and testing activities relating to turbomachinery blades and engines, and components thereof, of the '040 reissue patent.

12. Pratt & Whitney has manufacturing facilities in East Hartford, Connecticut; Middletown, Connecticut; Clayville, New York; Middletown, New York; Middletown, Pennsylvania; Madison, Florida; West Palm Beach, Florida; Columbus, Georgia; North Berwick, Maine; and Canoga Park, California, among other locations throughout the world. At its East Hartford, and Middletown, Connecticut, facilities, Pratt & Whitney conducts manufacturing activities relating to turbomachinery blades, engines, and components thereof, of the '040 reissue patent.

13. Pratt & Whitney has service facilities in Cheshire, Connecticut; East Hartford, Connecticut; Rocky Hill, Connecticut; Windsor Locks, Connecticut; North Berwick, Maine;

Lester, Pennsylvania; South Burlington, Vermont; Springdale, Arkansas; Jacksonville, Florida; Columbus, Georgia; Indianapolis, Indiana; Wichita, Kansas; Lansing, Michigan; Dallas, Texas; San Antonio, Texas, and in other locations throughout the world.

III. RESPONDENTS

14. Respondent, Rolls-Royce Group plc (“Rolls-Royce Group”), is an English corporation, with its principal place of business at 65 Buckingham Gate, London SW1E6AT, England, United Kingdom. Rolls-Royce Group is involved in the design, research and development, engineering and testing, manufacture, and sale of turbomachinery blades, and engines, and components thereof, among other products. Rolls-Royce Group, through its Civil Aerospace business unit, is responsible for the manufacture in the United Kingdom, importation, sale for importation, and sale after importation into the United States of infringing turbomachinery blades, fans, and engines, and components thereof. The business operations of Rolls-Royce Group are described more fully in its Annual Report for 2009, a copy of which is attached to this Complaint as Exhibit 4.

15. Respondent, Rolls-Royce plc (“Rolls-Royce plc”), is a wholly-owned subsidiary of Respondent, Rolls-Royce Group. Rolls-Royce plc owns various trademarks and patents under which Rolls Royce plc sells turbomachinery blades and jet engines, and is involved in the design, research and development, engineering and testing, and service of infringing turbomachinery blades and jet engines. Rolls-Royce plc manufactures in the United Kingdom and imports, sells for importation, and sells after importation into the United States infringing turbomachinery blades, fans and jet engines, and components thereof.

IV. THE TECHNOLOGY AND PRODUCTS-AT-ISSUE

16. The technology and products-at-issue are turbomachinery blades, engines, and components thereof.

A. Overview of Jet Engines

17. Today's jet aircraft are propelled by the thrust generated by jet engines. The thrust forces the aircraft forward, causing air to flow over the wings.

18. Most commercial aircraft in service today use turbofan engines. Figure 1 depicts a turbofan engine having two spools (or shafts) but it should be noted that there are engines with three spools. In a traditional two-spool engine, the high pressure turbine (6) is on the same spool (or shaft) and drives the high pressure compressor (4) while the low pressure turbine (7) is on the same spool (or shaft) and drives the low pressure compressor (3) and fan (2). In a typical three-spool arrangement, the high pressure turbine is on the same spool (or shaft) and drives the high pressure compressor, the intermediate turbine is on the same spool (or shaft) and drives the intermediate compressor, and low pressure turbine is on the same spool (or shaft) and drives the fan.

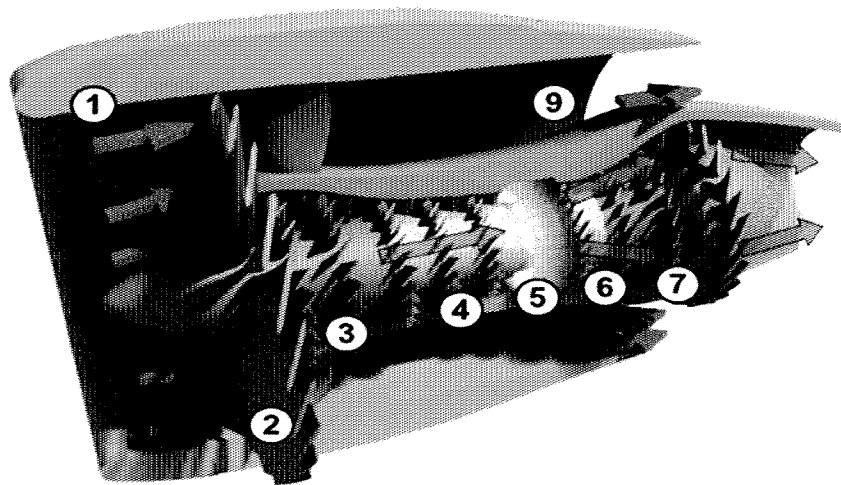


Figure 1
Turbofan Engine

19. The '040 reissue patent discloses and claims an invention for improving the efficiency of the engine through the design of the turbomachinery blades.

20. The fan draws large volumes of air into the front of the engine. The fan is driven by the low pressure turbine portion of the engine and the fan blades are specifically designed to bring as much bypass air as possible through the engine to increase the engine's efficiency.

21. In a turbofan engine, the intake air that is drawn into the engine by the fan is divided into two streams, as shown in Figure 1. Most of the intake air is channeled into a ring-shaped cylindrical passage that directs airflow around the core of the engine, bypassing the compressor, combustor, and turbine. This larger volume of intake air is commonly called the "bypass air" and is labeled 9 in Figure 1.

22. The remaining portion of the intake air is commonly known as the "primary" or "core" air, and is directed to the core of the engine where it is compressed through the

compressor, ignited with fuel in the combustor which creates a hot accelerated gas that drives the turbine stages, and the gases are then passed through the exhaust nozzle, where it joins the bypass air. The core air is depicted by the red arrows in Figure 1.

23. The primary or core air provides the gasses needed to drive the fan and power the engine, while the bypass air generates the majority of the thrust which drives the aircraft forward.

24. Figure 2 shows a cut-away view of two turbofan engines: the image on the left is of the accused Trent 900 engine; and the image on the right is of the accused Trent 1000 engine. See <http://www.rolls-royce.com/>.

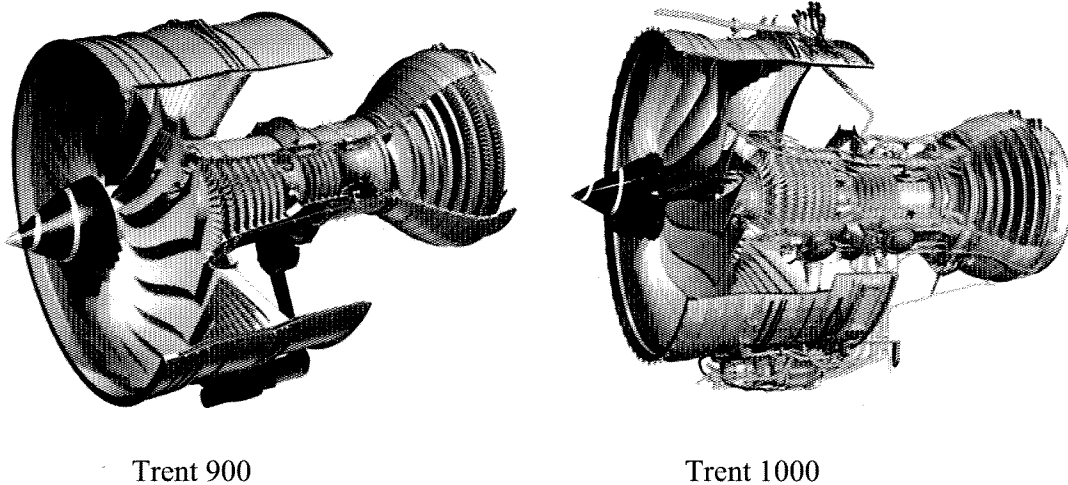


Figure 2
Cutaway View of Accused Trent 900 and Trent 1000 Jet Engines

B. Turbomachinery Blades

25. The turbomachinery blades disclosed and claimed in the asserted '040 reissue patent have at least a portion of the leading edge that is swept rather than straight. Leading edge sweep has the effect of reducing the relative velocity of the airflow normal to the fan blade leading edge.

26. A shock wave is a compressional wave. It is a disturbed region that is small but has a definite thickness within which very abrupt changes occur in the pressure, density, and velocity of the medium. "Sonic booms" are caused by shock waves from aircraft traveling at supersonic speeds.

27. The function of the fan stage of a gas turbine turbofan engine is, essentially, to increase the pressure of the air flowing through it. Under normal operating conditions, the blades are rotating at very high speeds. The portion of the blades farthest from the root and closest to the tip are moving the fastest. In normal operation in a modern engine, along a substantial portion of the length of the leading edge of each blade, the relative velocity of the air is supersonic.

28. As the air passes over the airfoil section of the fan blades it slows to subsonic speeds. The transition of the air through the sound barrier from supersonic to subsonic velocities generates a shock wave. Fan designers have tried to design fan blades to minimize shocks and other adverse aerodynamic effects, while maintaining or increasing stability.

29. UTC and the General Electric Company ("GE") each produce jet aircraft engines used for civil aviation. Through a joint venture, the Engine Alliance, UTC and GE supply jet engines for the new Airbus A380 aircraft being made by Airbus S.A.S.

30. Rolls-Royce will supply jet engines for the Boeing 787 "Dreamliner" being made by The Boeing Company, and also for the Airbus A380 being made by Airbus S.A.S. The engine that Rolls-Royce will supply for the Boeing 787 is called the Trent 1000. The engine that Rolls-Royce supplies for the Airbus A380 is called the Trent 900. These engines, the turbomachinery blades that they contain, and components of the engines, as well as any future

turbomachinery blade, engine, or component thereof using the patented technology, are accused of infringement in this complaint.

V. THE ASSERTED PATENT AND NON-TECHNICAL DESCRIPTION OF THE INVENTION

31. U.S. Reissue Patent No. RE38,040 issued to David A. Spear, Bruce P.

Biederman, and John A. Orosa, on March 18, 2003. Exhibit 1. The '040 reissue patent is a reissue of U.S. Patent No. 5,642,985, which issued on July 1, 1997. Exhibit 2.

32. The '040 patent is assigned to United Technologies Corporation. See Exhibit 3.

33. The '040 patent discloses, among other things, certain turbomachinery blades that reduce or minimize certain adverse effects of the shock waves formed in the intake section of the engine. The specification of the '040 reissue patent acknowledges that it was well known in the art that turbomachinery blades with sweep would increase the efficiency of the fan blade. Exhibit 1, Col. 1, ll. 42-47. Such blades, however, cause a shock wave to reflect into another flow passage between the next set of blades, creating an additional shock, in addition to the passage shock in the flow passage. The '040 reissue patent refers to this shock as "endwall shock." *Id.* Col. 1, ll. 48-67. This "endwall shock" causes the air flowing through a flow passage between two blades to encounter both the endwall and passage shocks, causing losses in efficiency. *Id.* at ll. 61-67. Additional energy is dissipated when the airflow encounters an endwall and a passage shock in a flow passage, and this lost energy cannot be recovered. In addition, having separate endwall and passage shocks in a flow passage may cause the engine to become unstable under certain operating conditions.

34. The invention of the '040 reissue patent improves on prior turbomachinery blades by bringing the endwall and passage shock waves together, so that the air encounters only

the passage shock, reducing the adverse effects of encountering both the endwall and passage shocks.

35. Claims 1 and 2 of the '040 reissue patent express the invention in functional language.

VI. FOREIGN COUNTERPART PATENTS AND APPLICATIONS

36. Attached as Exhibit 5 hereto is a list of foreign counterpart patents and applications related to each patent-in-issue, with an indication of the status of each application.

VII. LICENSES UNDER THE PATENT-IN-SUIT

37. No licenses have been granted under the '040 reissue patent.

VIII. UNLAWFUL AND UNFAIR ACTS OF THE PROPOSED RESPONDENTS—PATENT INFRINGEMENT

38. The accused products are turbomachinery blades, engines, and components thereof, including the infringing turbomachinery blades.

39. Generally, any of Respondents' turbomachinery blades, engines, and components thereof, having turbomachinery blades in which the endwall shock and passage shock coincide infringe claims 1 and 2 of the '040 reissue patent, including the Trent 900 and Trent 1000 engines.

40. United Technologies does not have access to Trent 900 and Trent 1000 turbomachinery blades. In order to confirm that the accused products are covered by the '040 reissue patent claims, UTC has analyzed the properties of comparable blades under comparable conditions, and the results of this analysis establish the infringement allegations set forth in the accompanying claim charts that are attached to this complaint as Exhibit 6. Without limiting the scope of the infringing products, Exhibit 6 applies the asserted claims to representative fan

blades. Other turbomachinery blades in the accused Trent 900 and Trent 1000 engines may also infringe.

41. UTC does not have access to a Trent 1000 engine and, consequently, UTC has been unable to measure the shock waves in the fan section of Rolls-Royce's Trent 1000 engine. It is generally accepted in the industry to employ mathematical modeling based on Navier-Stokes equations to model the performance of the blades and fan stage of a turbofan engine. These models are generally accepted and reasonably relied upon by engine manufacturers in analyzing the conditions within various portions of engines.

42. The Trent 1000 is representative of the infringing Rolls-Royce products, and Claim 1 is representative of claims 1 and 2 of the '040 reissue patent. The analysis of infringement for the Trent 900 is the same as for the Trent 1000 and is apparent from the pictures of the Trent 900 and Trent 1000 which follow.

43. Charts that apply independent claims 1 and 2 of the '040 reissue patent to certain of the accused Trent 1000 turbomachinery blades, engines, and components thereof, is attached to this Complaint as Exhibit 6. The accompanying Declaration of Jayant Sabnis, Ph.D., establishes that the Trent 1000 engine includes the elements of Claims 1 and 2 of the '040 reissue patent.

44. The accused Trent 900 engine is depicted in Figure 3.

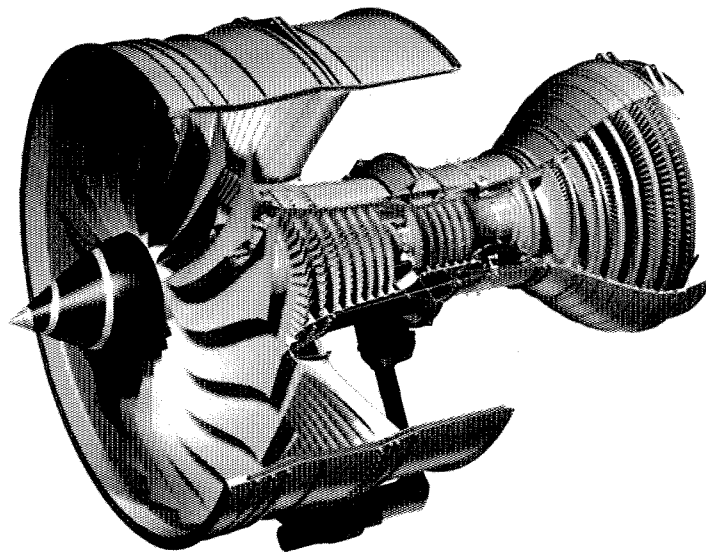


Figure 3
Cutaway View of Accused Trent 900 Jet Engine

45. The accused Trent 1000 engine is depicted in Figure 4.

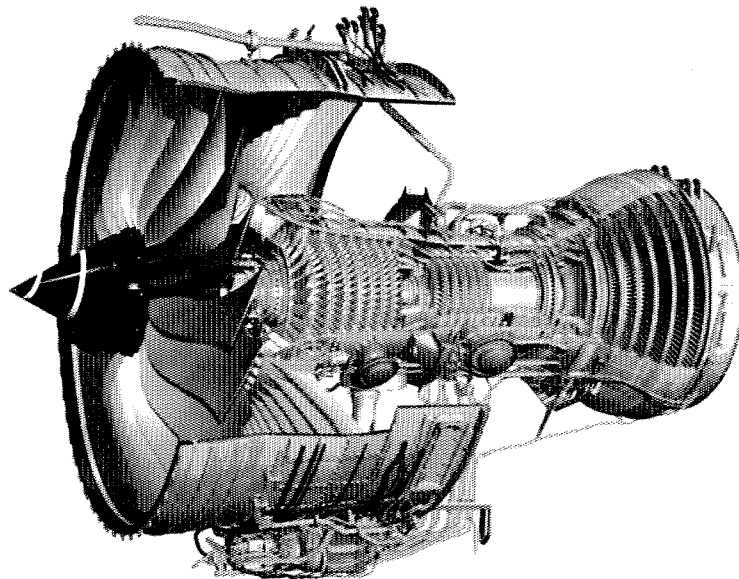


Figure 4
Cutaway View of Accused Trent 1000 Jet Engine

46. The accused Trent 900 and Trent 1000 products infringe both directly and indirectly.

47. Respondents have had notice of the '040 reissue patent since at least 2003.

48. Respondents have had notice of the infringement of the '040 reissue patent since at least their receipt of this Complaint.

49. The accused Trent 900 and Trent 1000 products are specifically designed to infringe claims 1 and 2 of the '040 reissue patent.

50. Respondents induce infringement by others of claims 1 and 2 of the '040 reissue patent by promoting their accused products, by providing sales and service for the accused products in the United States, and by providing technical assistance in connection with the accused products.

IX. SPECIFIC INSTANCES OF UNFAIR IMPORTATION AND SALE

51. Respondent, Rolls-Royce plc, has imported into the United States Trent 900 and Trent 1000 jet engines that contain turbomachinery blades that infringe the '040 reissue patent. Excerpts from a video depicting an imported Rolls-Royce Trent 1000 engines being flight-tested on a 787 "Dreamliner" at Boeing's Everett, Washington, facility appears at <http://www.youtube.com/watch?v=966KbI0x3v4&feature=related>, and specifically at 4:15 to 6:35 of the video.¹

¹ The following video links provide substantial additional detail regarding Rolls-Royce production and importation of the accused infringing Trent 1000 products: <http://www.youtube.com/watch?v=p2B9oY2pdas>; <http://www.youtube.com/watch?v=s6q1M-gvzPY&NR=1>; <http://www.youtube.com/watch?v=lvvjUsS-Jno&feature=related>; <http://www.youtube.com/watch?v=E0jCXSVGHYU&NR=1>; <http://www.youtube.com/watch?v=QU9hnx2gCHQ&feature=related>; and <http://www.youtube.com/watch?v=966KbI0x3v4&feature=related>.

52. The infringing turbomachinery blades are made at Rolls-Royce's facility at Barnoldswick, England. See Exhibit 10. The infringing Trent 900 and Trent 1000 engines, and components thereof that include infringing turbomachinery blades, are assembled at Rolls-Royce's facility at Derby, England. See Exhibit 11. Rolls-Royce does not manufacture the accused products in the United States.

53. Rolls-Royce imports into, sells for importation, and/or sells after importation, the accused Trent 1000 turbomachinery blades, engines, and components thereof, in the United States.

54. Rolls-Royce has imported into the United States one or more Trent 1000 engines. The Trent 1000 was developed to be used on the Boeing 787 "Dreamliner" aircraft. The Boeing 787 aircraft is a twin engine aircraft, employing two Trent 1000 engines.

55. Boeing assembles the 787 aircraft in Everett, Washington. See Exhibit 12. The accused Trent 1000 engines sold by Rolls-Royce for use on Boeing 787 aircraft have been and will be imported into the United States for assembly on Boeing 787 aircraft at Boeing's Everett, Washington, assembly plant.

56. A Trent 1000 engine was delivered to Arnold Engineering Development Center in Tullahoma, Tennessee, for altitude testing on May 1, 2007. http://www.rolls-royce.com/civil/products/largeaircraft/trent_1000/programme.jsp, a copy of which is attached hereto as Exhibit 13.

57. Rolls-Royce reports on its website that the first Trent 1000 engines were delivered to Boeing on June 4, 2007, enabling Boeing to rollout the first 787 Dreamliner on July 8, 2007. Exhibit 13.

58. A Trent 1000 engine was delivered to Stennis, Mississippi, for noise testing on July 1, 2008. Exhibit 13.

59. Between December 15, 2009 and March 2010, Trent 1000 engines were delivered to Boeing and used to power four 787 flight test aircraft used by Boeing's Seattle, Washington-based flight test group. Trent 1000 Newsletter--March 2010 Issue 17., a copy of which is attached hereto as Exhibit 14.

60. Thus, Rolls-Royce has imported into the United States multiple Trent 1000 engines that have been used by Boeing at Stennis, Mississippi; Tulaoma, Tennessee; and Everett, Washington.

61. By 2008, Boeing had orders for over 800 787 "Dreamliner" aircraft. Exhibit 15. The Trent 1000 is one of the engine options available on the 787 "Dreamliner". British Airways alone has ordered dozens of 787 Dreamliners with Trent 1000 engines. Exhibit 16.

X. HARMONIZED TARIFF SCHEDULE ITEM NUMBERS

62. The Harmonized Tariff Schedule of the United States item numbers under which the infringing Trent 900 and Trent 1000 products may be imported into the United States may be at least HTSUS 8411.91.90 (81) and (85); 8411.99.90 (90); 8411.12.40; and 8803.10, 8803.30, and subsections thereof.

XI. RELATED LITIGATION

63. There has been no prior court or agency litigation, domestic or foreign, involving the specific acts of unfair competition asserted in this Complaint.

64. Neither the '040 reissue patent nor the '985 patent, from which the '040 reissue patent reissued, has been the subject of prior litigation.

65. While the '040 reissue patent was pending, UTC filed a continuation application, U.S. Application No. 09/874,931 (the " '931 application"). The '931 application claims priority to the parent application of the '985 patent. UTC attempted to provoke and interference with Rolls-Royce plc's U.S. Patent No. 6,071,077, Swept Fan Blade ("the '077 patent"). UTC copied claim 8 of the '077 patent as Claim 23 of the '931 application for purposes of provoking an interference with the '077 patent.

66. On December 31, 2003, the U.S. Patent and Trademark Office declared an interference between the '077 patent and the '931 application. The U.S. Patent and Trademark Office awarded priority of invention to UTC. *Rowlands v. Spear, et al.*, Patent Interference No. 105,195 (February 2, 2005). A copy of the U.S. Patent and Trademark Office decision is attached as Exhibit 17.

67. Pursuant to 35 U.S.C. Section 146, Rolls-Royce plc filed for review of the interference decision in the U.S. District Court for the Eastern District of Virginia. *Rolls Royce plc v. United Technologies Corporation*, Civil Action No. 1:05 - CV 362 (LMB)(LO) (E.D. Va.). The district court reversed the PTO's decision awarding priority to UTC, finding that there was no interference-in-fact between Claim 23 of the '931 application and Claim 8 of the '077 patent. A copy of the district court's decision is attached hereto as Exhibit 18.

68. UTC appealed the district court's decision to the Federal Circuit. On May 5, 2010, a panel of the Federal Circuit affirmed the district court's finding that there is no interference-in-fact between Claim 23 of the '931 application and Claim 8 of the '077 patent. A copy of the Federal Circuit decision is attached hereto as Exhibit 19.

69. Contemporaneously with the filing of this Complaint, UTC is filing an amended complaint in *United Technologies Company v Rolls-Royce plc*, Civil Action No. 3:10-cv-01523-SRU (D. Conn.), asserting a cause of action for infringement of the '040 reissue patent.

XII. DOMESTIC INDUSTRY

70. UTC has established a domestic industry under at least 19 U.S.C. § 1337(a)(3)(C).

71. A domestic industry exists with respect to Pratt & Whitney's activities in the United States that exploit the asserted '040 reissue patent by reason of substantial investment in plant and equipment, substantial employment of labor and capital, and significant investment in research and development related to the articles produced by Pratt & Whitney and covered by the '040 reissue patent. Pratt & Whitney's domestic activities with respect to articles protected by the '040 reissue patent date back to the development of the patented invention and continue today.

72. Specifically, Pratt & Whitney operates facilities in East Hartford and Middletown, Connecticut that are used for the research and development, assembly, and manufacture of turbomachinery blades, fans, and engines covered by the '040 reissue patent.

73. The turbomachinery blades manufactured by Pratt & Whitney for the GP7200 series engines are covered by at least claim 1 of the '040 reissue patent.

74. The GP7200 series of engines are sold by The Engine Alliance, a joint venture between General Electric and Pratt & Whitney to Airbus S.A.S. in Toulouse, France, and are used on the Airbus 380. The GP7200 engine is depicted in Figure 5, below.

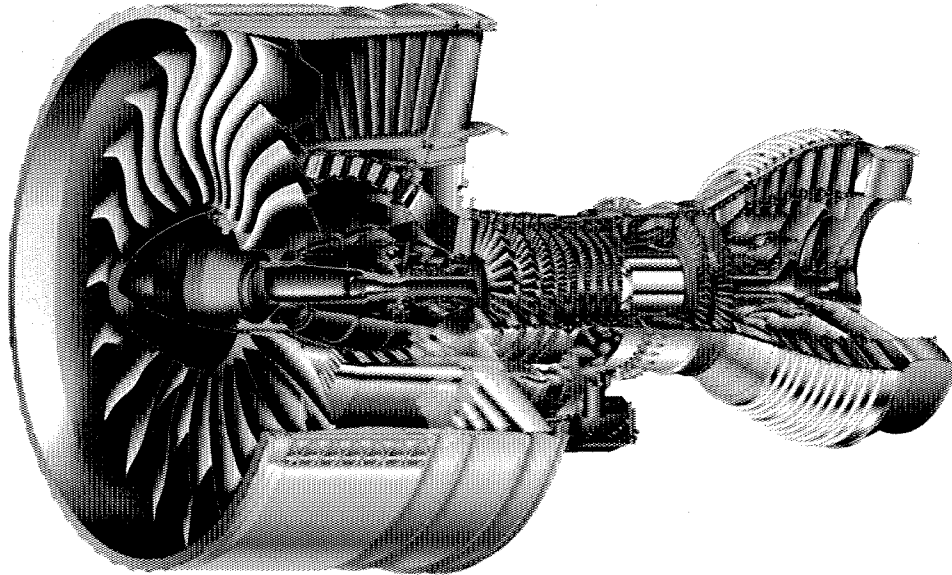


Figure 5
Cutaway View of GP7200 Jet Engine

75. In 2003, Pratt & Whitney began manufacturing turbomachinery blades for use in the GP7200 series of engines at its East Hartford, Connecticut, facility.

76. After the blades are machined, they are assembled into fans at Pratt & Whitney's Middletown, Connecticut facility.

77. Additional portions of the GP7200 series of engines are also manufactured and assembled at Pratt & Whitney's East Hartford and Middletown, Connecticut facilities.

78. The extent of Pratt & Whitney's plant and equipment and the number of employees involved in these production-related activities are set forth in Confidential Exhibit 12, a copy of which is attached to this complaint.

79. A chart that applies claim 1 of the '040 reissue patent to the GP7200 fan blades, fan, and engine is attached to this Complaint as Exhibit 20.

XIII. REQUEST FOR RELIEF

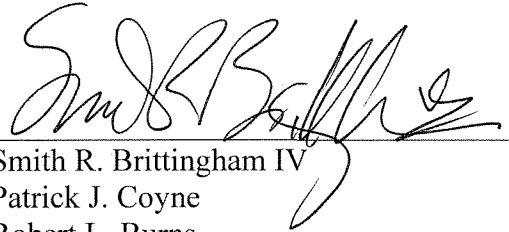
80. WHEREFORE, Complainant UTC respectfully requests that the United States International Trade Commission:

- a. Institute an immediate investigation pursuant to Section 337(b)(1) of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337(a)(1)(B)(i) and (b)(1) with respect to violations of Section 337 based on the importation, sale for importation, sale after importation into the United States of infringing turbomachinery blades, engines, and components thereof, that infringe one or more of the asserted claims of the '040 reissue patent;
- b. Schedule and conduct a hearing on said unlawful acts and, following said hearing;
- c. Issue a permanent exclusion order, pursuant to 19 U.S.C. §1337(d)(1) barring from entry into the United States all infringing turbomachinery blades, engines, and components thereof, imported by or on behalf of Respondents;
- d. Issue a permanent cease-and-desist order, pursuant to 19 U.S.C. §1337(f), directing each Respondent to cease and desist from importing, marketing, advertising, demonstrating, testing, offering for sale, selling, distributing, licensing, or using turbomachinery blades, engines, and components thereof, that infringe one or more claims of United States Reissue Patent No. RE38,040 E; and

- e. Grant all such other and further relief as the Commission deems just and proper based on the facts as determined by the Investigation and the authority of the Commission.

Dated: November 5, 2010

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Smith R. Brittingham IV", written over a horizontal line.

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United Technologies Corporation

VERIFICATION OF COMPLAINT

I, Ramsaran Maharajh, Jr., declare, in accordance with 19 C.F.R. §§210.4 and 210.12(a), under penalty of perjury that the following statements are true:

1. I am a registered patent attorney, and am an associate general counsel for United Technologies Corporation ("UTC"). I am duly authorized to sign this complaint on behalf of UTC.
2. I have read the foregoing complaint.
3. To the best of my knowledge, information, and belief, based on reasonable inquiry, the foregoing complaint is well-founded in fact and is warranted by existing law or by a non-frivolous argument for the extension, modification, or reversal of existing law or establishment of new law.
4. The allegations and other factual contentions have evidentiary support or are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery.
5. The foregoing complaint is not being filed for an improper purpose, such as to harass or cause unnecessary delay or needless increase in the cost of litigation.

Executed on: November 3, 2010



RAMSARAN MAHARAJH, JR.
Associate General Counsel