

**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA**

UNITED STATES OF AMERICA  
U.S. Department Of Justice  
Antitrust Division  
450 5<sup>th</sup> Street N.W., Suite 8700  
Washington, D.C. 20530

Plaintiff,

v.

UNITED TECHNOLOGIES CORPORATION  
10 Farm Springs Road  
Farmington, CT 06032

and

ROCKWELL COLLINS, INC.,  
400 Collins Road N.E.  
Cedar Rapids, IA 52498

Defendants.

**COMPLAINT**

The United States of America (“United States”), acting under the direction of the Attorney General of the United States, brings this civil antitrust action against United Technologies Corporation (“UTC”) and Rockwell Collins, Inc. (“Rockwell Collins”) to enjoin UTC’s proposed acquisition of Rockwell Collins. The United States complains and alleges as follows:

**I. NATURE OF THE ACTION**

1. Pursuant to an asset purchase agreement dated September 4, 2017, UTC proposes to acquire all the shares of Rockwell Collins. The transaction is valued at approximately \$30

billion. The acquisition would constitute one of the largest aerospace acquisitions in history.

2. UTC and Rockwell Collins are two of three suppliers in the world for pneumatic ice protection systems for fixed-wing aircraft (“aircraft”). Ice protection systems are critical to aircraft safety, as aircraft icing is a major hazard to aviation. The proposed acquisition would eliminate competition between UTC and Rockwell Collins for these systems.

3. UTC and Rockwell Collins are two of the leading suppliers in the worldwide market for trimmable horizontal stabilizer actuators (“THSAs”) for large aircraft. THSAs help an aircraft maintain the proper altitude during flight and are critical to the safe operation of the aircraft. The proposed acquisition would eliminate competition between UTC and Rockwell Collins for THSAs for large aircraft.

4. As a result, the proposed acquisition likely would substantially lessen competition in the worldwide markets for the development, manufacture, and sale of pneumatic ice protection systems for aircraft and THSAs for large aircraft in violation of Section 7 of the Clayton Act, 15 U.S.C. § 18.

## **II. THE DEFENDANTS**

5. UTC is incorporated in Delaware and has its headquarters in Farmington, Connecticut. UTC produces a wide range of products for the aerospace industry and other industries, including pneumatic ice protection systems for aircraft and THSAs for large aircraft. In 2017, UTC had sales of approximately \$59.8 billion.

6. Rockwell Collins is incorporated in Delaware and is headquartered in Cedar Rapids, Iowa. Rockwell Collins is a major provider of aerospace and defense electronics systems. Rockwell Collins produces, among other products, pneumatic ice protection systems

for aircraft and THSAs for large aircraft. In fiscal year 2017, Rockwell Collins had sales of approximately \$6.8 billion.

### **III. JURISDICTION AND VENUE**

7. The United States brings this action under Section 15 of the Clayton Act, 15 U.S.C. § 25, as amended, to prevent and restrain Defendants from violating Section 7 of the Clayton Act, 15 U.S.C. § 18.

8. Defendants develop, manufacture, and sell pneumatic ice protection systems for aircraft and THSAs for large aircraft in the flow of interstate commerce. Defendants' activities in the development, manufacture, and sale of these products substantially affects interstate commerce. This Court has subject matter jurisdiction over this action pursuant to Section 15 of the Clayton Act, 15 U.S.C. § 25, and 28 U.S.C. §§ 1331, 1337(a), and 1345.

9. Defendants have consented to venue and personal jurisdiction in this judicial district. Venue is therefore proper in this district under Section 12 of the Clayton Act, 15 U.S.C. § 22 and under 28 U.S.C. § 1391(c).

### **IV. PNEUMATIC ICE PROTECTION SYSTEMS**

#### **A. Background**

10. During flight, ice can accumulate on an aircraft's leading edge surfaces, such as the part of the aircraft's wings that first contact the air during flight. Such accumulation affects an aircraft's maneuverability, increases drag, and decreases lift. If it remains untreated, surface ice accumulation can lead to a catastrophic flight event.

11. A pneumatic ice protection system is engineered to remove accumulated ice on an aircraft's wings. A pneumatic ice protection system consists of two main elements, a de-icing boot and pneumatic system hardware. A de-icing boot is an inflatable tube made of rubber or a

similar material that is physically bonded to the leading edge of the aircraft's wings. The pneumatic system hardware consists of equipment designed to control the flow of air into the de-icing boot. When ice begins to accumulate on the wings, the de-icing boot is inflated. The expansion of the de-icing boot cracks the ice off the leading edge. The de-icing boot may be inflated and deflated manually (by the pilot) or automatically (by a timer).

12. Pneumatic ice protection systems are one form of ice protection technology. Ice protection systems are selected at the aircraft design stage based on the characteristics of the aircraft. The specific design features of an aircraft, such as the availability of electrical power, determines which type of ice protection system will be used on the aircraft. For example, some aircraft use electrothermal systems, but such systems require significant electrical power to heat aircraft surfaces; other aircraft may use engine bleed air systems, but those systems require significant hot air bled from engines to heat aircraft surfaces. Aircraft using pneumatic ice protection systems generally have low availability of electrical power and insufficient bleed air from the aircraft engines, and also generally require lightweight and low-cost systems. This compels manufacturers of aircraft, such as the Gulfstream G150, the Cessna Citation M2, the Beechcraft King Air, and the ATR 42, to use pneumatic ice protection systems. Once an aircraft manufacturer has selected a particular pneumatic ice protection system, that system is certified as an Original Equipment Manufacturer ("OEM") part of the aircraft's manufacturing design. Aircraft manufacturers generally only certify one supplier for ice protection systems for a particular aircraft model.

13. Pneumatic ice protection systems, and components thereof, are also sold in the aftermarket, as their components require repair or replacement after extended use. Most of the revenues related to pneumatic ice protection systems are derived from aftermarket sales.

Aftermarket purchasers include aircraft manufacturers, aircraft operators, and service centers. Although generally only one particular pneumatic ice protection system is certified with the aircraft model as original equipment, pneumatic ice protection system suppliers often procure additional certifications that allow their pneumatic ice protection system components to replace their competitors' OEM pneumatic ice protection components in the aftermarket.

14. Because surface ice accumulation may lead to a catastrophic flight event, pneumatic ice protection systems are considered critical flight components. An aircraft manufacturer or aftermarket purchaser is therefore likely to prefer proven suppliers of pneumatic ice protection systems.

## **B. Relevant Markets**

### **1. Product Market**

15. Pneumatic ice protection systems have numerous attributes (lightweight, low-cost, and low-power requirements) that make them an attractive option for aircraft manufacturers of aircraft with certain design requirements. Certain aircraft models can only use pneumatic ice protection systems. For the customers that produce that model, pneumatic ice protection systems are the best option, as they cannot effectively use other types of ice protection systems such as an electrothermal system, which requires a significant amount of electrical power, or an engine bleed air system, which requires engines large enough to generate significant excess heat.

16. Once an aircraft is certified, switching the ice protection system on a particular model of aircraft to a different type of ice protection system, even if technologically feasible, would require some re-design of the ice protection portion of the aircraft and recertification of the aircraft, potentially costing millions of dollars, requiring additional flight testing, and consuming years of time. Therefore, a small but significant increase in the price of pneumatic

ice protection systems would not cause customers of those ice protection systems to substitute an alternative type of ice protection system for the original aircraft or in the aftermarket in volumes sufficient to make such a price increase unprofitable. Accordingly, pneumatic ice protection systems are a relevant product market and line of commerce under Section 7 of the Clayton Act, 15 U.S.C. § 18.

17. Although the pneumatic ice protection system installed on each model of aircraft may be unique, and each system could therefore be deemed a separate product market, in each such market there are few competitors. The proposed acquisition of Rockwell Collins by UTC would affect competition for each pneumatic ice protection system in the same manner, as the competitive conditions are the same for each pneumatic ice protection system. It is therefore appropriate to aggregate the different systems to one pneumatic ice protection market for purposes of analyzing the effects of the acquisition.

## **2. Geographic Market**

18. The relevant geographic market is worldwide within the meaning of Section 7 of the Clayton Act, 15 U.S.C. § 18. Pneumatic ice protection systems are marketed internationally and may be sourced economically from suppliers globally, because transportation costs are a small proportion of the cost of the system and thus are not a major factor in supplier selection.

### **C. Anticompetitive Effects of the Proposed Transaction**

19. There are only three competitors in the market for the development, manufacture, and sale of pneumatic ice protection systems. These three firms are the only sources for both OEM systems and aftermarket systems and parts. Based on historical sales results, a combined UTC-Rockwell Collins would control a majority share of OEM and aftermarket sales.

Therefore, UTC's acquisition of Rockwell Collins would significantly increase concentration in an already highly concentrated market.

20. UTC and Rockwell Collins compete directly on price. In some cases, one of the companies has replaced the other's pneumatic ice protection system or components thereof on a particular aircraft in the aftermarket. This acquisition threatens to extinguish that competition, likely leading to price increases and significant harm to aircraft manufacturers and aftermarket customers that require pneumatic ice protection systems.

21. Customers have benefited from the competition between UTC and Rockwell Collins for sales of pneumatic ice protection systems by receiving lower prices, more favorable contractual terms, and shorter delivery times. The combination of UTC and Rockwell Collins would eliminate this competition and its future benefits to customers. Post-acquisition, UTC likely would have the incentive and the ability to increase prices profitably and offer less favorable contractual terms.

22. The proposed acquisition, therefore, likely would substantially lessen competition in the development, manufacture, and sale of pneumatic ice protection systems for aircraft worldwide in violation of Section 7 of the Clayton Act, 15 U.S.C. § 18.

**D. Difficulty of Entry**

23. Sufficient, timely entry of additional competitors into the markets for pneumatic ice protection systems is unlikely to prevent the harm to competition that is likely to result if the proposed acquisition is consummated. Entry of a new competitor into the development, manufacture, and sale of a pneumatic ice protection system is unlikely and cannot happen in a time period that would prevent significant competitive harm.

24. Entry is unlikely due to the small size of the pneumatic ice protection system

market. In addition, competitions for aircraft suitable for pneumatic ice protection systems are infrequent. Accordingly, there are limited bidding opportunities for OEM sales and less incentive for a new competitor to enter, which means that a supplier would be less likely to enter the market.

25. Pneumatic ice protection systems generally are not built by aircraft manufacturers, in part because pneumatic technology tends to be complicated and technically different from other aircraft systems. Therefore aircraft manufacturers are unlikely to bring production of such systems in-house in response to a price increase.

26. Although aftermarket replacement opportunities for existing pneumatic ice protection system suppliers are available in certain cases, entry is costly due to the associated certification costs. Aircraft manufacturers, operators, and servicers also hesitate to purchase aircraft systems and parts from new suppliers, particularly for critical flight components like ice protection systems.

27. As a result of these barriers, entry into the markets for pneumatic ice protection systems would not be timely, likely, or sufficient to defeat the substantial lessening of competition that is likely to result from UTC's acquisition of Rockwell Collins.

## **V. TRIMMABLE HORIZONTAL STABILIZER ACTUATORS FOR LARGE AIRCRAFT**

### **A. Background**

28. Actuators are responsible for the proper positions of an aircraft by manipulating the "control surfaces" on its wings and tail section. A trimmable horizontal stabilizer actuator ("THSA") helps an aircraft maintain the proper altitude during flight by adjusting ("trimming") the angle of the horizontal stabilizer, the control surface of the aircraft's tail responsible for aircraft pitch. This control surface is critical to the safety and performance of the aircraft, as a



loss of control could cause the aircraft to crash. The stabilizer encounters significant aerodynamic loads for extended periods of time, and the THSA must be capable of handling these loads. THSAs thus tend to be the largest and most technically demanding actuators on an aircraft.

29. THSAs vary based on the size and type of the aircraft on which they are used. Because large aircraft encounter significantly higher aerodynamic loads than smaller aircraft, THSAs for large aircraft are considerably larger, more complex, and more expensive than those used on smaller aircraft. Large aircraft primarily include commercial aircraft that seat at least six passengers abreast (such as the Airbus A320 and A350 and the Boeing 737 and 787) and military transport aircraft, but exclude regional jets, business jets, and tactical military aircraft.

**B. Relevant Markets**

**1. Product Market**

30. THSAs for large aircraft do not have technical substitutes. Large aircraft manufacturers cannot switch to THSAs for smaller aircraft, or actuators for other aircraft control surfaces, because those products cannot adequately control the lift and manage the load generated by the horizontal stabilizer of a large aircraft. A small but significant increase in the price of THSAs for large aircraft would not cause aircraft manufacturers to substitute THSAs designed for smaller aircraft or actuators for other control surfaces in volumes sufficient to make such a price increase unprofitable. Accordingly, THSAs for large aircraft are a line of commerce and a relevant product market within the meaning of Section 7 of the Clayton Act, 15 U.S.C. § 18.

## **2. Geographic Market**

31. The relevant geographic market within the meaning of Section 7 of the Clayton Act, 15 U.S.C. § 18 is worldwide. THSAs for large aircraft are marketed internationally and may be sourced from suppliers globally, because transportation costs are a small proportion of the cost of the product and thus are not a major factor in supplier selection.

### **C. Anticompetitive Effects of the Proposed Acquisition**

32. UTC and Rockwell Collins are each other's closest competitors for THSAs for large aircraft. UTC and Rockwell Collins have won two of the most significant recent contract awards for THSAs for large aircraft: the Boeing 777X and the Airbus A350. Boeing and Airbus are the world's largest manufacturers of passenger aircraft, and these aircraft represent two of only three THSA awards by these manufacturers in this century.

33. While there are other producers of THSAs for large aircraft, those producers tend to concentrate on THSAs for smaller aircraft, such as business jets or regional jets, or to focus on products for other aircraft control surfaces.

34. UTC and Rockwell Collins each view the other firm as the most significant competitive threat for THSAs for large aircraft. The two companies are among the few that have demonstrated expertise in designing and producing THSAs for large aircraft. Each firm considers the other company's offering when planning bids.

35. Customers have benefitted from the competition between UTC and Rockwell Collins for THSAs for large aircraft by receiving lower prices, more favorable contractual terms, more innovative products, and shorter delivery times. The combination of UTC and Rockwell Collins would eliminate this competition and its future benefits to customers. Post-acquisition,

UTC likely would have the incentive and the ability to increase prices profitably and offer less favorable contractual terms.

36. UTC and Rockwell Collins also invest significantly to remain leading suppliers of new THSAs for large aircraft, and aircraft manufacturers expect them to remain leading suppliers of new products in the future. The combination of UTC and Rockwell Collins would likely eliminate this competition, depriving large aircraft customers of the benefit of future innovation and product development.

37. The proposed acquisition, therefore, likely would substantially lessen competition for the development, manufacture, and sale of THSAs worldwide for large aircraft in violation of Section 7 of the Clayton Act.

**D. Difficulty of Entry**

38. Sufficient, timely entry of additional competitors into the market for THSAs for large aircraft is unlikely to prevent the harm to competition that is likely to result if the proposed transaction is consummated.

39. Developing a THSA for large aircraft is technically difficult. Even manufacturers of THSAs for smaller aircraft face significant technical hurdles in designing and developing THSAs for large aircraft. As aerodynamic loads are a major design consideration for THSAs, and such loads are tightly correlated with the size of the aircraft, THSAs for large aircraft present more demanding technical challenges than those for smaller aircraft.

40. Opportunities to enter are limited. Because certification of a THSA is expensive and time-consuming, once a THSA is certified for a particular aircraft type, it is rarely replaced in the aftermarket by a different THSA. Accordingly, competition between suppliers of THSAs generally only occurs when an aircraft manufacturer is designing a new aircraft or an upgraded

version of an existing aircraft, which are infrequent occurrences because development costs for such aircraft can be tens of billions of dollars. As a result, several years usually pass between contract awards for THSAs for a new aircraft design.

41. Potential entrants into the production of THSAs for large aircraft face several additional obstacles. First, manufacturers of large aircraft are more likely to purchase THSAs from those firms already supplying THSAs for other large aircraft. The important connection between THSAs and aircraft safety drives aircraft manufacturers toward suppliers experienced with production of THSAs of the relevant type and size. While some companies may have demonstrated experience in THSAs for smaller aircraft, such experience is not considered by customers to be as relevant as experience in THSAs for large aircraft. A new entrant would face significant costs and time to be considered a potential alternative to the existing suppliers.

42. Substantial time and significant financial investment would be required for a company to design and develop a THSA for large aircraft. Even companies that already make other types of THSAs would require years of effort and an investment of many millions of dollars to develop a product that is competitive with those offered by existing large aircraft THSA suppliers.

43. As a result of these barriers, entry into the market for THSAs for large aircraft would not be timely, likely, or sufficient to defeat the substantial lessening of competition that would likely result from UTC's acquisition of Rockwell Collins.

## **VI. VIOLATIONS ALLEGED**

44. UTC's acquisition of Rockwell Collins likely would lessen competition substantially in the development, manufacture, and sale of pneumatic ice protection systems for aircraft and THSAs for large aircraft, in violation of Section 7 of the Clayton Act, 15 U.S.C. § 18.

45. Unless enjoined, the acquisition likely would have the following anticompetitive effects, among others, relating to pneumatic ice protection systems for aircraft:

- (a) actual and potential competition between UTC and Rockwell Collins would be eliminated;
- (b) competition likely would be substantially lessened; and
- (c) prices likely would increase and contractual terms likely would be less favorable to the customers.

46. Unless enjoined, the proposed acquisition likely would have the following anticompetitive effects relating to THSAs for large aircraft, among others:

- (a) actual and potential competition between UTC and Rockwell Collins would be eliminated;
- (b) competition likely would be substantially lessened;
- (c) prices would likely increase, contractual terms likely would be less favorable to the customers, and innovation likely would decrease.

## **VII. REQUEST FOR RELIEF**

47. The United States requests that this Court:

- (a) adjudge and decree that UTC's acquisition of Rockwell Collins would be unlawful and violate Section 7 of the Clayton Act, 15 U.S.C. § 18;

- (b) preliminarily and permanently enjoin and restrain Defendants and all persons acting on their behalf from consummating the proposed acquisition of Rockwell Collins by UTC, or from entering into or carrying out any other contract, agreement, plan, or understanding, the effect of which would be to combine UTC with Rockwell Collins;
- (c) award the United States its costs for this action; and
- (d) award the United States such other and further relief as the Court deems just and proper.

Dated: October 1, 2018

Respectfully submitted,

FOR PLAINTIFF UNITED STATES:



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