Report No. DODIG-2019-082



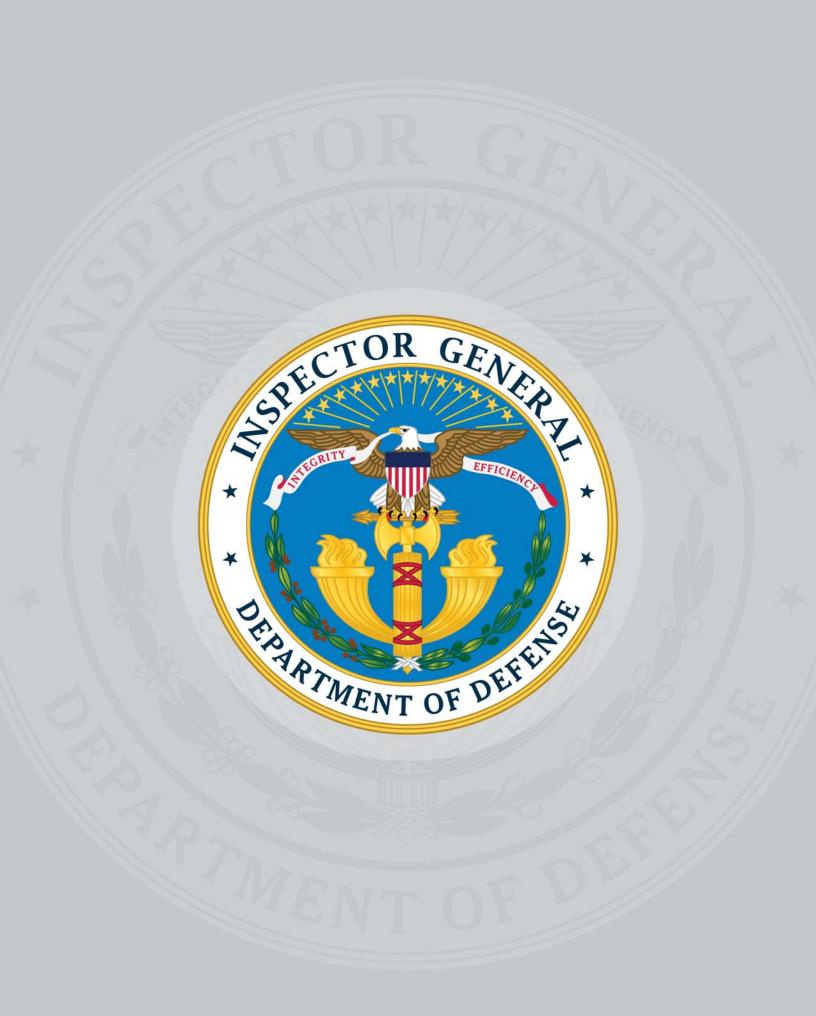
INSPECTOR GENERAL

U.S. Department of Defense

APRIL 25, 2019



INTEGRITY \star INDEPENDENCE \star EXCELLENCE



REPORT OF INVESTIGATION: MR. PATRICK M. SHANAHAN ACTING SECRETARY OF DEFENSE

I. INTRODUCTION AND SUMMARY

This report of investigation describes the results of a Department of Defense Office of Inspector General (DoD OIG) investigation into allegations that Acting Secretary of Defense Patrick M. Shanahan, took actions to promote his former employer, Boeing, and disparage its competitors, allegedly in violation of his ethical obligations.¹

We received similar allegations from various referrals. On February 7, 2019, a Senate Committee on Armed Services attorney forwarded an anonymous allegation to the DoD OIG that asserted Mr. Shanahan violated ethics rules by promoting Boeing. For example, the allegation stated that Mr. Shanahan tried to force the Commandant of the Marine Corps, General Robert Neller, to buy Boeing F/A-18s, and threatened to cut other Air Force programs unless the Air Force Chief of Staff, General David Goldfein, supported buying Boeing F-15Xs.²

On February 14, 2019, Senator Elizabeth Warren's staff forwarded three additional allegations to the DoD OIG that asserted Mr. Shanahan pressured the Military Services to purchase Boeing aircraft.

Several newspaper articles reported similar allegations. For example, a *Politico* article stated that Mr. Shanahan made remarks that "spurred accusations" that he was "boosting" Boeing which "fuel[ed] questions about whether he harbors an unfair bias against other big military contractors." A *Bloomberg* article stated that the DoD's initial decision to purchase Boeing F-15X aircraft came from "top leadership," which included "prodding" from Mr. Shanahan.

On March 13, 2019, the Citizens for Responsibility and Ethics in Washington (CREW) sent a letter to the DoD OIG, referring to media reports of allegations against Mr. Shanahan and asking the DoD OIG to investigate the allegations. The CREW letter alleged that Mr. Shanahan "made numerous statements promoting his former employer Boeing and has disparaged the company's competitors before subordinates."

On March 14, 2019, Mr. Shanahan testified before the Senate Committee on Armed Services. Senator Richard Blumenthal noted that CREW had requested that the DoD OIG investigate whether Mr. Shanahan had "broken any ethics rules by promoting Boeing." He asked Mr. Shanahan, "Do you support such an investigation?" Mr. Shanahan replied, "Yes, I do."

¹ Acting Secretary of Defense Shanahan was the Deputy Secretary of Defense during the events addressed in this report. We refer to him as Mr. Shanahan throughout this report.

² In this report, we examine Mr. Shanahan's actions regarding various aircraft, such as the Boeing F/A-18, a multi-role fighter aircraft designed for aerial combat and ground attack; the Boeing F-15X, a fighter aircraft; the Lockheed Martin F-35 (Joint Strike Fighter), a stealthy, multi-role fighter aircraft designed for ground attack and aerial combat; and the Boeing KC-46, an aerial refueling tanker and cargo transport aircraft.

A. Scope of the DoD OIG Investigation

On March 15, 2019, the DoD OIG initiated this investigation into allegations that Mr. Shanahan violated his ethical obligations in matters regarding Boeing. Specifically, the DoD OIG examined allegations that Mr. Shanahan:

- 1. "Boosted" or "praised" Boeing in meetings.
- 2. Made disparaging remarks about Boeing's competitors and Lockheed Martin's Chief Executive Officer (CEO), Marillyn Hewson.
- 3. "Repeatedly dumped" on the F-35 aircraft in meetings and called the F-35 aircraft "f---ed up."
- 4. Put "his finger on the scale when it comes to Pentagon priorities" for procuring Boeing aircraft that the Military Services did not want. Specifically, Mr. Shanahan allegedly tried to force General Neller to buy Boeing F/A-18s, and threatened to cut other Air Force programs unless General Goldfein supported buying Boeing F-15Xs. These allegations relate to the mix of "4th and 5th generation" aircraft that the DoD was purchasing.³
- 5. "Involved himself" in the KC-46 program by "weighing on" the Air Force to accept the aircraft after technical problems delayed Boeing's delivery.

Additionally, we reviewed three other issues raised during our interviews – that Mr. Shanahan allegedly:

- 1. Should not have met with Elon Musk, the CEO of Space Exploration Technologies (SpaceX), which competed with Boeing on a launch vehicle contract;
- 2. Suggested that a DoD official visit a Boeing simulation facility; and
- 3. Discussed a classified matter related to a Boeing product.

If substantiated, the allegations we investigated could violate Federal ethics regulations, the President's Ethics Pledge, or Mr. Shanahan's Ethics Agreement. When Mr. Shanahan was nominated to be the Deputy Secretary of Defense, he signed an ethics agreement stating that if confirmed, he would not participate personally and substantially in any particular matter where Boeing, is or represents a party for the duration of his tenure, unless authorized. When he began his duties as the Deputy Secretary of Defense, Mr. Shanahan also signed an Ethics Pledge, required of Executive Branch Appointees, in which he agreed to other restrictions.⁴

³ The Background section in this report discusses the difference between 4th and 5th generation aircraft.

⁴ Executive Order 13770, "Ethics Commitments by Executive Branch Appointees," requires every appointee in an executive agency, appointed on or after January 20, 2017, to sign the Ethics Pledge.

Additionally, ethics rules that apply to all federal employees prevent Mr. Shanahan from using his public office for private gain; for the endorsement of any product, service, or enterprise; or for the private gain of friends, relatives, or persons with whom he is affiliated in a nongovernmental capacity.

We include his ethics agreement, his Ethics Pledge, and an excerpt from the applicable Joint Ethics Regulation in the Appendix to this report.

B. The DoD OIG Investigation

Our investigation specifically sought to determine what Mr. Shanahan said about Boeing or its competitors, whether he made any of the alleged comments, whether he participated in decisions on Boeing products, and whether any actions or comments by Mr. Shanahan violated his ethics agreements or his ethical obligations.

To conduct this investigation, we interviewed Mr. Shanahan and 33 witnesses. Our interviews were conducted under oath and transcribed. We interviewed the most senior officials in the DoD; witnesses who had frequent interaction with Mr. Shanahan; and witnesses who were involved in the review, consideration, or decisions to purchase or budget for Boeing and Lockheed Martin systems related to the allegations. We also interviewed DoD officials who advised Mr. Shanahan on ethics issues and DoD officials who were responsible for screening Boeing matters from Mr. Shanahan.

Other than General Neller and General Goldfein, the allegations did not identify specific witnesses who may have heard the comments about Boeing or its competitors. Therefore, we interviewed a wide range of witnesses who had frequent interaction with Mr. Shanahan and who most likely would have knowledge of such remarks if they had been made. These witnesses included former Secretary of Defense James Mattis; the Chairman and Vice Chairman of the Joint Chiefs of Staff; Military Service Chiefs; DoD Under Secretaries and other senior officials who regularly dealt with acquisition and budget issues; and other senior DoD civilian and military leaders.⁵ We also interviewed other witnesses who were identified to us during our interviews as potentially having information relevant to our investigation.

All of the witnesses we interviewed, including Mr. Shanahan, cooperated fully with our investigation and answered all of our questions.

We reviewed more than 5,600 pages of unclassified documents and approximately 1,700 pages of classified documents related to the allegations and the relevant major defense acquisition systems. These documents included Secretary and Deputy Secretary of Defense executive correspondence, information papers, action memorandums, briefing slides, e-mails, point papers, calendar events, ethics records, news articles, Government Accountability Office and Congressional reports, and relevant Congressional testimony.

In addition, we obtained and reviewed search results from the Executive Secretariat database of correspondence for terms related to Boeing and Boeing products, including the aircraft cited in the allegations. From these results, we identified and reviewed action and information memorandums

⁵ Former Secretary of Defense James Mattis was the Secretary of Defense during the events addressed in this report. We refer to him as Secretary Mattis throughout this report.

relating to the allegations. We also reviewed written ethics advice, including e-mails and ethics reviews, provided to Mr. Shanahan or his staff.

C. DoD OIG Conclusions

We did not substantiate any of the allegations. We determined that Mr. Shanahan fully complied with his ethics agreements and his ethical obligations regarding Boeing and its competitors.

We determined that Mr. Shanahan did not make the alleged comments and did not promote Boeing, or disparage its competitors. While Mr. Shanahan did routinely refer to his prior industry experience in meetings, witnesses interpreted it, and told us, that he was doing it to describe his experience and to improve Government management of DoD programs, rather than to promote Boeing or its products. We also determined that Mr. Shanahan's comments about Boeing's competitors were directed at holding contractors accountable and saving the Government money, consistent with his duties as the Deputy Secretary of Defense, rather than to disparage particular companies and individuals, or to promote Boeing.

Specifically, with regard to the alleged comments about the aircraft made by Boeing and its competitors, we concluded that Mr. Shanahan did not "repeatedly dump" on the F-35 *aircraft* in meetings. Rather, we determined that Mr. Shanahan's comments related to the F-35 *program* and its performance, and were consistent with other comments about problems in the F-35 program made by other senior DoD officials.

We also determined that Mr. Shanahan only participated in broad policy discussions and not in specific discussions about quantities and types of aircraft, including the mix of 4th and 5th generation aircraft. He did not participate in any discussions relating to the purchase of specific aircraft or Boeing products. There also was no evidence that he made any comments pressuring General Neller, General Goldfein, or anyone else, about purchasing F-15 or F/A-18 aircraft, as alleged. In addition, we found no evidence that Mr. Shanahan was involved in discussions or decisions regarding the acceptance of the KC-46 aircraft or tried to pressure the Air Force into accepting that aircraft.

Regarding the three additional matters raised during our interviews – the meeting with Mr. Musk, the suggestion to visit a Boeing simulation facility, and the classified matter involving a Boeing product – we did not find any ethical violations by Mr. Shanahan.

Finally, we determined that DoD ethics officials provided initial and ongoing ethics training to Mr. Shanahan and his staff. Mr. Shanahan's staff and other senior DoD officials were generally aware of Mr. Shanahan's Boeing disqualifications. Both he, and they, adhered to the recusal requirements. For example, we were told about several instances when a specific Boeing matter was raised at a meeting and Mr. Shanahan and others stopped the discussion, or Mr. Shanahan left the meeting so the matter could be discussed. We also determined that the DoD Standards of Conduct Office (SOCO), Mr. Shanahan, and his staff created a rigorous multi-layered screening process to identify Boeing matters from which Mr. Shanahan was disqualified and divert these Boeing matters to alternate DoD officials. That process was adhered to and worked well to keep specific Boeing matters from Mr. Shanahan.

In sum, we found that the allegations were not substantiated and that Mr. Shanahan fully complied with his ethics agreements and ethical obligations regarding Boeing and its competitors.

The following sections of this report provide more detailed results of our investigation. We first discuss background information regarding Mr. Shanahan, the organizational relationships within the Office of the Secretary of Defense (OSD) and other offices, the duties and responsibilities of the Deputy Secretary of Defense, and Mr. Shanahan's recusal and screening arrangement. We then discuss in detail the various allegations against Mr. Shanahan. Finally, we provide our overall conclusions.

II. BACKGROUND

A. Patrick M. Shanahan's Background

Mr. Shanahan worked for Boeing from March 1986 to June 2017, in various positions. He served as Senior Vice President of Commercial Airplane Programs, managing profit and loss for the 737, 747, 767, 777, and 787 programs and the operations at Boeing's principal manufacturing sites; Vice President and General Manager of the 787 Dreamliner program; Vice President and General Manager of Boeing Missile Defense Systems; and Vice President and General Manager of Boeing Rotorcraft Systems, in which he had oversight of the Apache, Chinook, and Osprey. From April 2016 until he was nominated to be the Deputy Secretary of Defense, he served as Boeing's Senior Vice President for Supply Chain and Operations.

On June 7, 2017, the President nominated Mr. Shanahan to become the Deputy Secretary of Defense. On July 18, 2017, the Senate confirmed his nomination. He began service as the Deputy Secretary of Defense on July 19, 2017.

On January 1, 2019, upon the resignation of Secretary Mattis, Mr. Shanahan assumed duties as the Acting Secretary of Defense. He currently serves in that position.

B. Deputy Secretary of Defense Duties and Responsibilities

As Deputy Secretary of Defense, Mr. Shanahan served as the DoD's Chief Operating Officer. In that position, he was responsible for: (1) ensuring that DoD-wide capabilities and resources supported the DoD strategic plan, (2) serving as the accountable official for DoD management and performance, and (3) developing and maintaining a DoD strategic plan. See DoD Directive (DoDD) 5105.02, "Deputy Secretary of Defense."

On October 5, 2017, Secretary Mattis sent a memorandum to DoD personnel to share his guidance for Fiscal Year 2018. In this memorandum, Secretary Mattis tasked the DoD with "three lines of effort": (1) restore military readiness as we build a more lethal force; (2) strengthen alliances and attract new partners; and (3) bring business reforms to the DoD.

Secretary Mattis told us that the primary focus he tasked to Mr. Shanahan was the third "line of effort" from this memorandum – to reform DoD business practices to ensure that the DoD would be ready to fight future wars. Secretary Mattis told us that he instructed Mr. Shanahan to use "every bit of [his industry background] to get more return on the dollar." Secretary Mattis said that Mr. Shanahan's

industry background brought to the DoD "his understanding of supply chains, his technical understanding of what we needed to do for the Army's communication system, or for the Army's artillery system." Secretary Mattis also said that Mr. Shanahan "had an appreciation for how industry works [and] that allowed him to be very critical as he reviewed data and looked for cost savings, and looked for what we could do to maintain the best, the absolute best return on our dollars."

C. Office of the Secretary of Defense

The Office of the Secretary of Defense (OSD) oversees DoD-wide policy development, strategic planning, resource management, fiscal controls, and program evaluation and oversight. In this report, we refer to various offices and positions within OSD, including the offices of the Secretary and Deputy Secretary of Defense, the Under Secretaries of Defense, the General Counsel, and the Cost Assessment and Program Evaluation (CAPE). Figure 1 shows the relationships between those offices, those positions, other offices relevant to this investigation, and includes some of the senior officials we interviewed in this investigation.

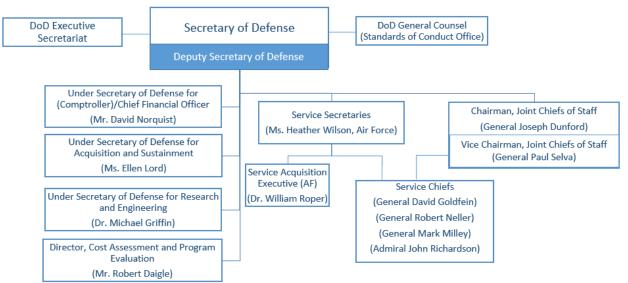


Figure 1. Office of the Secretary of Defense Organizational Relationships

Note: This figure is not intended to depict the entire OSD organization, with all specific supervisory or reporting channels. It highlights only those offices and relationships relevant to this investigation.

D. The Deputy Secretary of Defense's Role in the Defense Acquisition System

The Deputy Secretary of Defense is responsible for ensuring that DoD-wide capabilities and resources are sufficient to carry out the DoD strategic plan. The Deputy Secretary of Defense oversees three processes that support the Defense Acquisition System: (1) requirements, (2) funding, and (3) acquisition management.

Requirements. The Vice Chairman of the Joint Chiefs of Staff chairs the DoD's Joint Requirements Oversight Council, which approves capabilities and operational performance that are required for warfighters to fulfill their mission.

Funding. The CAPE Director is in charge of developing a 5-year program designed to equip the DoD to perform its mission. The DoD Comptroller is in charge of developing the annual budget for the DoD. Each fall, the CAPE Director and the Office of the DoD Comptroller lead a series of reviews that produce the DoD's annual budget and the 5-year program. The Deputy Secretary of Defense assists the Secretary of Defense by managing the day-to-day operation of the programming and budgeting processes and by providing leadership and oversight. The Secretary of Defense makes major funding decisions on issues not resolved at lower levels, and approves the program and budget.

Acquisition Management. The Under Secretary of Defense for Acquisition and Sustainment is the top acquisition executive in the DoD. The Under Secretary can delegate decision-making authority for major programs to the Military Service Secretaries, who may delegate them to their respective Service Acquisition Executives.

- E. Mr. Shanahan's Boeing Disqualification Requirement, Screening Arrangement, and Additional Ethics Guidance
 - 1. Disqualification Requirement

After Mr. Shanahan was nominated to become the Deputy Secretary of Defense, he signed a letter disqualifying himself from particular matters involving Boeing. Specifically, in a June 7, 2017, letter to the SOCO Director, Mr. Shanahan disqualified himself from participating personally and substantially in any particular matter involving specific parties if he knew Boeing was a party or represented a party, unless he was first authorized in writing by the Designated Agency Ethics Official (DAEO) to participate, pursuant to Title 5 Code of Federal Regulation (CFR) section 2635.502(d).⁶

On July 19, 2017, the day he began his duties as the Deputy Secretary of Defense, Mr. Shanahan also signed his Ethics Pledge, which by Executive Order 13770 is required of all Executive Branch appointees. According to this Ethics Pledge, Mr. Shanahan agreed that for a period of 2 years from the date of his appointment, he would not participate in any particular matter, including regulations and contracts involving specific parties, directly and substantially related to Boeing.

Additionally, the prohibition in 5 CFR section 2635.702 applies to DoD employees such as Mr. Shanahan. This provision bars government officials from using public office for private gain, for the endorsement of any product, service, or enterprise, or for the private gain of friends, relatives, or persons with whom he is affiliated in a nongovernmental capacity.

2. Screening Arrangement for Boeing Matters

To ensure that Mr. Shanahan was not involved in Boeing matters, after his appointment as the Deputy Secretary of Defense, Mr. Shanahan worked with the SOCO to establish a "screening arrangement" designed to ensure that he would not be involved with Boeing matters in his role as Deputy Secretary of Defense. Mr. Shanahan described his screening arrangement in a July 25, 2017, memorandum, addressed to Secretary Mattis. In the memorandum, Mr. Shanahan repeated the Boeing-related restrictions from his June 7, 2017, ethics agreement and his July 19, 2017, Ethics Pledge.

⁶ The disqualification period is usually for 2 years. Mr. Shanahan agreed to a disqualification period for the duration of his service with the DoD.

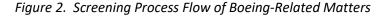
The memorandum stated, "when not taking any official action, I may be allowed to attend meetings and receive information regarding" Boeing. He also affirmed his commitment to ensure that his "participation in a matter involving Boeing would not cause a reasonable person to question my impartiality." The memorandum stated:

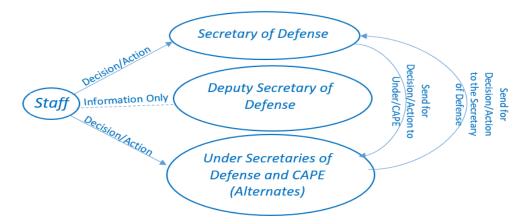
- I have directed my staff to screen all matters directed to my attention that involve outside entities or that require my participation, to determine if they involve [Boeing].
- If my staff determines that [Boeing] is or represents a party to the matter, they will refer the matter to the DAEO without my knowledge or involvement.⁷
- In order to make sure that I do not inadvertently participate in matters from which I should be recused, my staff will seek the assistance of the DAEO if uncertain whether or not I may participate in a matter.

Mr. Shanahan's letter concluded by stating that the DAEO could issue additional guidance related to Boeing or any other ethics issues.

Mr. Shanahan's staff worked with the SOCO to develop a defined screening process to help ensure that Mr. Shanahan did not violate his ethics requirement and ethical obligations.

All documents entered through the Executive Secretariat before being sent to Mr. Shanahan's staff for processing. We created Figure 2 to illustrate the screening process flow of Boeing-related matters while Mr. Shanahan served as the Deputy Secretary of Defense. Figure 2 shows the flow of information related to Boeing, in accord with the screening arrangement, after it was sent to Mr. Shanahan's staff. When a matter related to Boeing required a decision or action, Mr. Shanahan's staff bypassed Mr. Shanahan and sent it to Secretary Mattis or an alternate official (such as an Under Secretary of Defense or CAPE). When the matter was for "information only," the staff could provide it to Mr. Shanahan.





⁷ The DAEO is the DoD General Counsel. In this case, officials within the SOCO acting as the Alternate DAEO provided advice to Mr. Shanahan and his staff on his ethical obligations.

On January 7, 2019, Mr. Shanahan issued an "updated screening arrangement" after he became the Acting Secretary of Defense. This update contained no substantive changes to the screening arrangement relevant to the allegations.

3. Additional Ethics Guidance

On five occasions between October and December 2017, the SOCO provided additional written advice for when or how Mr. Shanahan could, and could not, participate in matters that could impact Boeing. According to the advice the SOCO issued, Mr. Shanahan could:

- Discuss capabilities and broad-based strategic themes.
- Make high-level decisions about architecture and capabilities that do not involve specific companies or programs.
- Provide broad budget guidance and participate in budget decisions which were not directly and substantially related to Boeing.
- Be briefed for situational awareness on programs in which Boeing was a party, but could not comment on or direct a particular course of action.
- Receive information [about Boeing] that did not require a decision.
- Decide to alter the overall funding emphasis and prioritization to develop or grow certain capabilities.
- Change a top-line budget allocation to a Service to develop a particular capability.
- Approve the use of a program where Boeing was not a vendor as an offset to provide additional funding for a program on which Boeing was a vendor where the decision to add funds to the Boeing contract or program was made independently by another official.

Additionally, the SOCO advised Mr. Shanahan that he could not provide direction or decisions about programs where Boeing was a party, and not participate in discussions about specific programs or contracts where Boeing was party or represented a party.

We discuss our findings regarding Mr. Shanahan's screening arrangement in more detail in the Facts and Analysis section of this report.

F. The Mix of 4th and 5th Generation Capabilities in Fighter Aircraft

The Air Force, Navy, and Marine Corps all use different types and variants of fighter aircraft to fulfill specific missions. The aircraft may have a single-role or multiple-roles. Their costs also differ, as do their capabilities in areas such as speed, stealth, altitude, and firepower.

It was therefore necessary for the DoD to decide on the best mix of older, so-called 4th generation fighter aircraft and newer, so-called 5th generation fighter aircraft. Fifth generation advocates question how effective older, 4th generation fighter aircraft can be in a future "high-end fight" against potential adversaries. Fourth generation advocates believe older fighters can continue to fulfill a variety of mission requirements for less money.

Boeing's F-15 and F/A-18 are examples of 4th generation fighter aircraft. Lockheed Martin's F-35 is an example of a 5th generation fighter aircraft.

Among other functions, the CAPE assesses the capabilities required to implement the National Defense Strategy and estimates costs associated with different mixes of fighter aircraft. A June 2017 "CAPE Fighter Force Mix Study Final Report" analyzed the capabilities of 4th and 5th generation aircraft and made conclusions and recommendations on the mix.

Our investigation examined the nature of Mr. Shanahan's participation in decisions on the fighter aircraft mix and the type and number of fighter aircraft that the DoD decided to acquire.

III. FACTS AND ANALYSIS

Chronology of Significant Events

Table 1 provides a chronology of key events related to this investigation.

Table 1.	Chronology	of Significant	Events

Date	Event	
March 1986	Mr. Shanahan begins his employment with Boeing.	
April 2016 - June 2017	Mr. Shanahan serves as Senior Vice President of Supply Chain and Operations at Boeing.	
March 16, 2017	The President announces his intent to nominate Mr. Shanahan to become the Deputy Secretary of Defense.	
June 2017	"CAPE Fighter Force Mix Study Final Report" analyzes the mix of 4th and 5th generation fighter aircraft.	
June 7, 2017	The President nominates Mr. Shanahan to become the Deputy Secretary of Defense. Mr. Shanahan submits his ethics agreement that requires him not to participate personally and substantially in any particular matter involving Boeing.	
July 18, 2017	The Senate confirms Mr. Shanahan's nomination.	
July 19, 2017	Mr. Shanahan becomes the Deputy Secretary of Defense and signs his Ethics Pledge.	
July 25, 2017	Mr. Shanahan sends memorandum to Secretary Mattis describing his screening arrangement concerning Boeing matters.	
March 2018	Mr. Shanahan asks DoD personnel to visit Boeing's Virtual Warfare Center and Lockheed Martin's Lighthouse.	
April - May 2018	Secretary Mattis tasks Mr. Shanahan to review the F-35 program.	
June 4, 2018	Three DoD personnel visit Boeing's Virtual Warfare Center.	
December 6, 2018	Mr. Shanahan meets with Elon Musk.	
December 7, 2018	CAPE Director issues Fiscal Year 2020-2024 program decisions, which include funding level guidance for F/A-18, F-15X, and F-35 aircraft.	
December 21, 2018	<i>Bloomberg</i> publishes article, "Pentagon to Seek \$1.2 Billion for New Boeing F-15 Fighters," which includes allegations about Mr. Shanahan and Boeing.	
January 1, 2019	Deputy Secretary Shanahan becomes the Acting Secretary of Defense.	
January 7, 2019	Mr. Shanahan notifies the DoD's DAEO of his updated screening arrangement.	
January 9, 2019	<i>Politico</i> publishes article, "New Pentagon Chief Under Scrutiny Over Perceived Boeing Bias," which also includes allegations about Mr. Shanahan and Boeing.	
January 10, 2019	Air Force accepts first KC-46 aircraft delivery from Boeing.	
February 7, 2019	Senate Committee on Armed Services attorney forwards an allegation regarding Mr. Shanahan to the DoD OIG.	
February 14, 2019	Senator Warren's office forwards three additional allegations to the DoD OIG.	
March 13, 2019	The Citizens for Responsibility and Ethics in Washington sends a letter to the DoD OIG requesting investigation.	
March 14, 2019	Mr. Shanahan testifies before the Senate Committee on Armed Services and responds that he supports a DoD OIG investigation.	
March 15, 2019	The DoD OIG initiates this investigation.	

The following sections describe our findings with regard to the general allegations related to Mr. Shanahan promoting Boeing and disparaging its competitors, then the specific comments Mr. Shanahan allegedly made about Boeing products and the three additional matters discussed by witnesses during our interviews.

A. Alleged Comments about Boeing

Allegedly, Mr. Shanahan made remarks "boosting" or "praising" Boeing in meetings.

However, none of the witnesses told us that they heard Mr. Shanahan praise Boeing in discussions or meetings. Many witnesses said they never heard him talk about Boeing. Some witnesses told us that Mr. Shanahan shared with them best practices that he learned during his experience as an industrial engineer manufacturing commercial aircraft and managing large programs and supply chains, and referred to his experience at Boeing.

For example, some witnesses told us that Mr. Shanahan noted his experience at Boeing when he was discussing how to drive costs down and increase performance from Government contractors in general, but they did not take it as promoting Boeing. Others said they understood his comments about Boeing to discuss general practices relating to building and sustaining commercial aircraft, not as a way to praise Boeing or promote its specific products. None of the witnesses told us that he praised any specific Boeing product or pressured them to buy Boeing products.

For example, the Chairman of the Joint Chiefs of Staff, General Joseph Dunford, told us that he has never heard Mr. Shanahan talk about Boeing, except for when they were preparing for Congressional testimony. General Dunford told us:

I have never heard him mention, nor have I had a conversation [with him] about Boeing, and to the extent that the issue has come up we did Congressional testimony together, and when we were asked about issues related to Boeing I took those questions in testimony, and we arranged that that would be the case during our pre-testimony preparations.

Vice Chairman of the Joint Chiefs of Staff, General Paul Selva, told us that Mr. Shanahan shared a "wealth of experience" from his commercial industrial engineering background, but he did not favor Boeing. General Selva added that Mr. Shanahan was "conscious of his potential to be interpreted as an advocate for one company or the other." General Selva told us:

He has a wealth of experience that we can benefit from. In my experience, he's been very careful not to say something like, "At Boeing we would do it this way." What he would do is say, "In commercial industrial engineering processes or system design processes, here are the things I have learned."

The Under Secretary of Defense for Acquisition and Sustainment, Ms. Ellen Lord, told us that she never heard Mr. Shanahan praise Boeing with respect to Government contracts. She said that while Mr. Shanahan had lot of pride in the commercial aircraft that he worked on at Boeing, she never heard Mr. Shanahan promote Boeing, other than talking about best practices of how they manufactured commercial aircraft. The Air Force Chief of Staff, General Goldfein told us, "I never heard him say anything about Boeing. My experience is that he's been very disciplined about adhering to the recusal." General Goldfein stated:

For me [a meeting with Mr. Shanahan] was actually pretty helpful to hear him and then [Ms. Lord] with her time at Textron would say ... "Let me tell you the way we would look at this." ... It was really helpful ... for us to understand the kinds of things that we ought to be thinking about.

The Secretary of the Air Force, Ms. Heather Wilson told us, "It's not as though he touts Boeing as a company ... I don't recall him saying something specific about Boeing." She also told us, "In almost every meeting there were references to the Dreamliner. And I never really took those issues as being any kind of an ethical problem."

Ms. Wilson also stated that Mr. Shanahan may have said, "We would never have done it this way. Or we wouldn't do it this way." She added, "It was more comparing his experience and criticizing a contractor that he felt wasn't getting the supply chain right."

The CAPE Director, Mr. Robert Daigle, told us that he never heard Mr. Shanahan praise Boeing. Mr. Daigle said:

To the extent that there was a Boeing discussion, it was all about how to generate efficient business processes, how to ingest those business ideas into the Department of Defense to improve performance across the board.... So he has been trying to instill in the Department of Defense a new way of doing business processes, and sustainment, and supply chain management.

Vice Admiral Mathias Winter, the Program Executive Officer for the F-35 Joint Program Office, told us that he did not recall Mr. Shanahan "referencing Boeing military aircraft." Vice Admiral Winter stated:

[Mr. Shanahan's] references to Boeing were predominantly in the context of his experiences in the commercial aircraft production enterprise, and the best practices, lessons learned, data metrics that he used as that leadership element in Boeing ... and I continued to take as good, insightful guidance, counsel, and lessons learned.

The Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics, who also serves as the Air Force's Service Acquisition Executive, Dr. William Roper, told us that Mr. Shanahan would often discuss his experiences in solving issues on the Boeing commercial Dreamliner as program techniques that should be used. Dr. Roper stated, "I never felt like he was trying to make me feel differently about the companies at play."

When we asked Mr. Shanahan about whether he made comments praising Boeing, he told us that he never praised a Boeing military product. He said he "probably" praised the Dreamliner commercial aircraft, "I think it's a great product, I worked on it." However, he also stated:

Part of this has added context. If somebody said, did I ever praise the 787? Probably, but did I praise the KC-46? No. Did I praise the F-15? No. Did I praise the F/A-18? No. I just say, relative to military products, never.

Mr. Shanahan also told us, "it was always a contrast of performance and experience that I've had, not about ... Boeing."

B. Alleged Comments about Boeing Competitors

Conversely, the allegations also asserted that Mr. Shanahan made disparaging remarks about Boeing's competitors. Specifically, Mr. Shanahan allegedly: (1) said Lockheed Martin "doesn't know how to run a program;" (2) said "Boeing would have done much better" than Lockheed Martin had Boeing "been awarded a fighter jet contract;" and (3) would "complain about Lockheed's timing and their inability to deliver, and from a Boeing point of view, say things like, 'We would never do that.'" Additionally, Mr. Shanahan allegedly made disparaging remarks about Lockheed Martin's CEO, Ms. Hewson.

We did not find any support for these allegations. None of the witnesses told us that they heard Mr. Shanahan make any of these statements. Additionally, none of the witnesses told us that they heard Mr. Shanahan make disparaging remarks about Lockheed Martin as a company or its CEO.

For example, Secretary Mattis told us that Mr. Shanahan's comments about Lockheed Martin were about reducing cost to get the aircraft "at a price that we can afford to sustain." Secretary Mattis said that Mr. Shanahan at times did make comments that others might have considered disparaging about the F-35 program, but Secretary Mattis added:

If that at times appears disparaging as we look with more than a spectator's view at [the F-35 program], in other words we're looking at it as an owner of the airplane, yeah maybe he said something like that but he's doing his job as far as I'm concerned. I didn't pay him to be a shrinking violet when it came to saving the Government money.

Admiral John Richardson, the Chief of Naval Operations, told us that he disagreed with the qualifier "disparaging" in the allegation. He characterized Mr. Shanahan's comments regarding the F-35 as "appropriately probing."

General Neller, the Commandant of the Marine Corps, told us:

this goes back to the discussion about his experience. I think people have complained and I think I've heard him opine as to [contractor] timeliness and their quality, and then go back, "When I was at Boeing working this program."

Other witnesses told us that Mr. Shanahan's communications to them were about programs and not about a particular company. Several witnesses specifically told us that Mr. Shanahan is "agnostic" towards companies or aircraft platforms and "biased towards performance."

Mr. Shanahan responded to us that he has never made a disparaging remark about Lockheed Martin or its CEO. Mr. Shanahan also told us that he partnered with Lockheed Martin during the 5 years he worked on Defense programs at Boeing. He stated that during that time he was a supplier, customer, and strategic partner with Lockheed Martin.

Mr. Shanahan told us that in his tenure in the DoD, his comments about Lockheed Martin have always been in the context of the F-35 program. He said he was "disappointed and frustrated" that Lockheed Martin was not supporting its customer, the DoD, properly, and was not taking the initiative to give the Government a plan for improving its F-35 program.

C. Comments about F-35 Program

In addition to the general allegation that Mr. Shanahan disparaged Boeing's competitors, the allegation specifically asserted that Mr. Shanahan "repeatedly dumped" on the F-35 aircraft in meetings and called the F-35 aircraft "f---ed up."⁸

All but one witness told us that they did not hear Mr. Shanahan "dump" on the F-35 *aircraft*; however, all witnesses told us that Mr. Shanahan was critical of how Lockheed Martin and the DoD Joint Program Office managed the F-35 *program*.

This criticism was fully consistent with what other senior officials believed and said. For example, General John E. Hyten, U.S. Air Force, Commander of the U.S. Strategic Command, told us, "many people criticized the F-35 program. I've criticized the F-35 program in public."

Additionally, during an April 12, 2018, House Committee on Armed Services hearing, Secretary Mattis stated, "the F-35 aircraft is performing well, but [Lockheed Martin] is not delivering the affordability that keeps solvency and security as our guideposts." In addition, he stated that "we have got to drive down the costs" on the F-35 program "and that is both the purchase cost, but it is also the flight-hour cost, the sustainment cost, and the cost of spare parts."

Secretary Mattis also explained to us why Mr. Shanahan was involved in the F-35 program:

He was trying to get the program to a point that we can have confidence in the numbers we said we were going to buy. If you say you're going to buy them and the cost is supposed to go down and each block comes off, and the plant gets more efficient, the supply chain is more efficient is not happening that we say that the cost per flight hour is going to be lower and the cost per flight hour is not going lower then you've got a problem. The program is unsustainable.

⁸ One allegation was that Mr. Shanahan made comments about the F-35 that "angered" several Members of Congress during a 2018 retreat at the Greenbrier resort in West Virginia. In fact, we determined that Secretary Mattis, and not Mr. Shanahan, attended this event. Mr. Shanahan told us that he has never been to the Greenbrier resort.

In addition, Secretary Mattis told us, "Secretary Shanahan would have been derelict in his duties if he didn't point that out bluntly and carry out his responsibilities for the tax dollars that we were spending."

Other witnesses made similar statements to us about Mr. Shanahan's comments about the F-35 program and Lockheed Martin. The following are representative examples of what they said:

- General Goldfein: Never heard him actually criticize any company by name ever. He was critical of the F-35 in terms of some of the costs and performance. But to be clear, he was equally critical about space procurement cost and performance, nuclear recapitalization costs and performance, intelligence surveillance reconnaissance costs, and performance. So, I didn't see anything in the F-35 discussions that I wasn't seeing in other portfolios that he was scrubbing and looking at.
- General Selva: So I'd say that's not unique to Lockheed Martin because
 [Mr. Shanahan's] a systems engineer.... If he sees an inefficiency in production he's
 actually not bashful about bringing it up, and by the way he's agnostic as to company.
 So, I haven't heard him specifically say pejorative things about Lockheed Martin. I have
 heard him talk about production processes across multiple companies saying, "We're
 not getting out of them the efficiencies we need to get out of them." ... And so he just
 keeps asking hard questions about production processes.
- General Dunford: [Mr. Shanahan] says, "Hey, look. I'm an engineer. I come at this from a different way. In industry here's how you account for things." So he's certainly brought his industry executive experience into a number of meetings that I've attended, but more from the perspective of looking at a problem from a different angle and suggesting a different way to attack it.
- Ms. Wilson: I think he just, as an industry executive it's almost like he knew ... where the fat was [in contract proposals] and he knew how he was going to get it taken out.
- Mr. Daigle: I think saying somewhat critical things about the program is reasonable, and I think [Mr.] Shanahan said critical things about the program, but then again so have most of the people in the building.
- Dr. Michael Griffin, Under Secretary of Defense for Research and Engineering: I will say again that it is my best understanding that when [Mr. Shanahan] talks about his dissatisfaction with the F-35 program, which as Deputy Secretary of Defense, he has some oversight of it, my observation and my understanding was always that he's talking about the Government management of the program. "How did we, the Government get ourselves in this position, not the contractor? The contractor is following Government direction."

 Dr. Roper: Secretary Shanahan was certainly critical of the performance that we were getting from Lockheed.... There's a difference between being critical of a company writ large, and being critical of the performance.... He was quite critical of the fact that Lockheed [Martin] was not making decisions on their production line that I guess were commensurate with commercial practices, and he really drove an emphasis on final assembly saying this is where you'll have to focus, and flow rates, and economizing the line. Bringing his experience from industry, I think he was really trying to fix the [F-35] program.

Only one witness, Vice Admiral Winter, who was the Program Executive Officer for the F-35 Joint Program Office, told us that he heard Mr. Shanahan say the F-35 *aircraft* was "f---ed up." Vice Admiral Winter told us this happened in the first few weeks of Mr. Shanahan's tenure as Deputy Secretary of Defense, approximately in July 2017. Vice Admiral Winter told us, "This is a couple of occasions and the first couple of meetings [with him]. I push back in that my team's working hard ... and then he says, 'Well, it's not just you [the F-35 Joint Program Office]. It's Lockheed [Martin].' So, those were factual."

Vice Admiral Winter added that discussions with Mr. Shanahan centered on Lockheed Martin's performance and included other industry partners' performance in meeting the required cost and performance schedules for the F-35 program.

We asked Vice Admiral Winter if the "f---d up" comment was made about the F-35 aircraft. He responded:

We brought data to debunk that [the aircraft is] screwed up. We brought the warfighter in. They talked about flying the [F-35], and they talk about how good [the F-35] is. So it started -- that -- when the warfighter talked [Mr. Shanahan] goes, "Okay. [The F-35 aircraft] works. But it costs too much." "Yes, sir." Okay. So now the [F-35] program is screwed up because it costs too much. It's screwed up because you are accepting the poor performance of your industry partners to include Lockheed Martin.

All other witnesses told us that they did not hear Mr. Shanahan "dump" on the F-35 fighter *aircraft*. However, as noted above, some stated that he was justifiably critical of how the F-35 Joint Program Office and Lockheed Martin managed the F-35 *program*.

Moreover, we found other instances in which various senior Government officials spoke critically of the F-35 program. For instance, on April 26, 2016, in a Senate Committee on Armed Services hearing, the Committee Chairman, Senator John McCain, stated that the F-35 program was the largest and most expensive acquisition program in the DoD, and that the F-35 program was a "scandal and a tragedy with respect to cost, schedule, and performance."

We also found that from April 2016 through June 2018, the Government Accountability Office published three reports critical of the F-35 program. The reports highlighted numerous "significant" issues, including cost, schedule, and performance problems, readiness, reliability, and sustainment challenges.

On April 12, 2018, in a House Committee on Armed Services hearing, Secretary Mattis testified, the F-35 is a "superb aircraft," but "we have got to drive down" purchase, flight-hour, sustainment, and spare part costs. He also testified that between Ms. Lord and Mr. Shanahan, "I have got two very capable people ... going after this with the contractor and getting the best value on this aircraft."

We also asked witnesses who had direct and frequent interaction with Mr. Shanahan about the assertion that Mr. Shanahan said Lockheed Martin "doesn't know how to run a program." All witnesses responded that they never heard Mr. Shanahan make that statement.

General Selva's response represented the unanimous witness testimony we received regarding this assertion:

I've never heard that done in a pejorative or a critical way. It's simply, "We have to get the best deal for the taxpayers." I've heard him say multiple times, "Our contracting officers take the most conservative approach on every acquisition. That's not the way to squeeze value out of a company." And he doesn't say which company. He just says "a company" and you can infer that to mean Boeing, Lockheed Martin, Ingalls Shipbuilding, General Dynamics, you pick it. But I never saw him sort of point that at a company, at a singular company and say, "They don't manage well."

Another allegation was that Mr. Shanahan "may harbor an unfair bias against other big military contractors" competing with Boeing. None of the witnesses told us they heard Mr. Shanahan make statements that would indicate to them that he had an unfair bias against other military contractors. For example, Ms. Lord told us:

[Mr. Shanahan] has a strong bias towards performance of all of our Defense industrial base. So, he has a pretty pointed [view] about expectations and when companies don't meet those expectations.

In addition, we asked witnesses to respond to the assertion that Mr. Shanahan "slammed" or made disparaging remarks about Lockheed Martin's CEO, Ms. Hewson. All of the witnesses told us that they never heard Mr. Shanahan make any negative remarks about Ms. Hewson.

We asked Mr. Shanahan about these allegations. He told us that when he assumed his duties as Deputy Secretary of Defense, DoD's efforts to reduce costs in the F-35 program were "insufficient." He said that DoD's management of the F-35 program was "inadequate to meet the expectations of the President and then-Secretary Mattis." He added, "my goal was to build the plan that gave high confidence that we would achieve lower unit cost. That we would achieve mission capability. That we would achieve higher quality."

According to Mr. Shanahan, he focused on three specific areas of the F-35 program: (1) development, (2) production, and (3) sustainment. He told us that he was "critical" of the program because it was overproducing aircraft that required "expensive retrofits" after production. He stated, "from a taxpayer standpoint and then more importantly from the warfighter standpoint those airplanes would sit on the ground" waiting for retrofits before they could be deployed. However, Mr. Shanahan told us that he did not say that the F-35 *aircraft* was "f---ed up." He told us that the F-35 aircraft is "awesome." Mr. Shanahan told us that he said the F-35 *program* was "f---ed up." He added that these comments were "always relative to a level of performance, and the number of categories where you have ... fundamental problems." According to Mr. Shanahan, his overall criticisms of the F-35 program were based on:

insufficient spare parts in the inventory, the cost per flight hour not decreasing fast enough. The logistics support system not having the functionality that the warfighters need to sustain the aircraft, and then the capability rates, the mission capability rates. To me, unacceptably low.

We also asked Mr. Shanahan if he had said that Lockheed Martin "doesn't know how to run a program." He told us, "I said program management on the F-35 is inadequate. My comments are always about the F-35 [program]."

In response to the assertion that he made disparaging remarks about Ms. Hewson, Mr. Shanahan told us, "Well, I didn't. My comments are always in the context of the F-35 [program]." However, he told us that he was "disappointed and frustrated" that Lockheed Martin was not delivering more in the form of an "improvement plan."

DoD OIG Conclusions on Comments about Boeing, its Competitors, and the F-35 Program

We determined that Mr. Shanahan did not make comments promoting or favoring Boeing. Rather, Mr. Shanahan shared his aircraft industry experience to highlight best practices, decrease costs, and increase performance, not specifically to promote Boeing or any specific aircraft.

We also concluded that Mr. Shanahan did not make comments that specifically disparaged Boeing's competitors, including Lockheed Martin and its CEO. We determined that Mr. Shanahan's comments were directed at holding contractors accountable and saving the Government money, consistent with his duties as Deputy Secretary of Defense.

We also concluded that Mr. Shanahan did not "repeatedly dump" on the F-35 aircraft. We determined that Mr. Shanahan's comments about the F-35 *program* were substantive, related to the program's performance, and were consistent with comments about the F-35 program made by other senior Government officials.

In sum, we concluded that his comments, and his actions regarding Boeing and its competitors, complied with his ethics agreements and ethical obligations.

D. Decision about the 4th and 5th Generation Aircraft Mix and about the Purchase of F/A-18 and F-15X Aircraft

In addition, the allegations asserted that Mr. Shanahan put "his finger on the scale when it comes to Pentagon priorities" for procuring "antiquated model planes" from Boeing that the military services did not want.⁹

Specifically, Mr. Shanahan allegedly tried to force General Neller to buy Boeing F/A-18s, but General Neller convinced Secretary Mattis to intervene. It was also alleged that Mr. Shanahan threatened to cut other Air Force programs unless General Goldfein supported buying Boeing F-15Xs. These allegations relate to the 4th and 5th generation mix discussed in the Background section of this report.

In this section, we first discuss the general allegation that Mr. Shanahan put his "finger on the scale" during talks on the mix of 4th and 5th generation aircraft and then discuss the specific allegations about the F/A-18 and F-15X aircraft.

1. Decision about the 4th and 5th Generation Mix

The issue of setting priorities and determining the optimum mix of 4th and 5th generation fighters pre-dated Mr. Shanahan's nomination as Deputy Secretary of Defense. Before Mr. Shanahan assumed duties as the Deputy Secretary of Defense, CAPE had recommended a mix of 4th (Boeing) and 5th (Lockheed Martin) generation aircraft for the Navy and the Air Force.

Witnesses told us that Mr. Shanahan was involved in general ongoing discussions regarding what mix of 4th and 5th generation aircraft would allow DoD to implement the National Defense Strategy within cost constraints, but that he was not involved in the details or decisions regarding the number of each type of aircraft the Services would purchase.

For example, General Selva, who co-chaired meetings with Mr. Shanahan to consider the 4th and 5th generation mix, told us that Mr. Shanahan supported CAPE's analysis. General Selva told us that during one meeting:

He and I were co-chairs up until the point where we went from a conceptual conversation about mix to a specific conversation about what model design series of airplanes, because model design series drives you to [a] company. Mix is about the generational difference between the airplanes and there are choices to be made if you're making it 4th generation or 5th generation fighters.

⁹ The allegation asserted that during an early December 2018 Pentagon Tank session, Mr. Shanahan pushed to include Boeing aircraft in the DoD budget. Tank sessions are attended by the DoD's most senior military general and flag officers to discuss top-level strategic issues that affect all of the military Services. We did not find any such Tank sessions on the DoD budget held in December 2018. In addition, as discussed below, we did not find any evidence that Mr. Shanahan pushed to include Boeing aircraft in the DoD budget in any meeting.

General Selva also told us:

the question of did [Mr. Shanahan] put his finger on the scales in favor of Boeing comes up, and to be quite blunt in summary I never saw him do that. In fact, quite the opposite. He's very circumspect about not doing it.

Other witnesses told us that the Navy and the Air Force agreed with CAPE's recommendation concerning the 4th and 5th generation mix. For example, Lieutenant General Anthony lerardi, who directs the Joint Staff's Force Structure, Resources, and Assessment Directorate, told us that the Navy agreed with CAPE's recommendation. He said that this recommendation afforded the Navy flexibility to allow the Marine Corps to have all 5th generation aircraft because the Navy could absorb all of the 4th generation aircraft.

General Neller told us that Mr. Daigle was in charge of the mix discussions and Secretary Mattis made the mix decisions. Admiral Richardson told us that CAPE was the focal point for the mix discussions. He also told us that the Navy's position, even before Mr. Shanahan became the Deputy Secretary of Defense, was that they should have both generations of fighter aircraft. Similarly, Ms. Wilson told us that the Air Force agreed with CAPE's recommendation on the mix.

In November 2018, CAPE briefed Secretary Mattis on its agreement with the Air Force and Navy regarding the 4th and 5th generation aircraft mix. Witnesses told us that Secretary Mattis made the aircraft mix decisions. His decisions were reflected in a December 7, 2018, CAPE memorandum that described the number and type of fighter aircraft the DoD wanted to buy for the Air Force and Navy during the next 5 years.

The CAPE Director, Mr. Daigle, told us that he only discussed mission capabilities regarding the mix of 4th and 5th generation mix with Mr. Shanahan and did not discuss specific fighter aircraft with him. Mr. Daigle stated:

The direction that we were given by the SOCO was, "We can have a strategic [tactical aircraft] mix and capacity conversation through the Secretary [of Defense], through the Deputy [Secretary] to the Secretary [of Defense], but we can't talk any of the specific [aircraft] platforms within that portfolio." So, that's the guidance that we followed.

Mr. Daigle also said that Secretary Mattis made the decision on 4th and 5th generation aircraft mix.

We also reviewed an e-mail that SOCO wrote to Mr. Shanahan's special assistant on December 5, 2017, advising that Mr. Shanahan,

was not prohibited from receiving information about the capability and force posture levels DoD can buy at different funding levels. His recusal obligations do not prevent him from giving broad budget guidance either. For example, he may provide guidance emphasizing one capability (e.g. missile defense, generally) over another when evaluating where to allocate limited funds. The SOCO Acting Director told us that the advice he gave Mr. Daigle was that Mr. Shanahan could talk broadly when it came to 4th and 5th generation mix discussions but not be "specific as to the actual [aircraft] platform." He also told us that Mr. Shanahan "didn't review the analytics of how many of each [aircraft] we should have."

Secretary Mattis told us that before Mr. Shanahan's confirmation as Deputy Secretary of Defense, he had already decided that the DoD would have a mix of 4th and 5th fighter generation, but that he had not decided by that time what the ratios would be for the different military Services. He added that he never heard Mr. Shanahan talk about any Boeing aircraft.

Mr. Norquist told us that Mr. Shanahan was not involved in discussions about specific aircraft models or manufacturers. He told us that he signed the budget-related decision memorandum and Mr. Daigle signed the program-related decision memorandum. Mr. Norquist added that Mr. Shanahan received the information after the fact on what was in the program and budget because he had a need to know when, for example, he had to testify before Congress.

Mr. Shanahan similarly told us that Secretary Mattis made the decisions related to the 4th and 5th generation mix. Mr. Shanahan said that he did not participate in 4th and 5th generation mix discussions and did not provide any guidance or direction on that subject.

2. Alleged Pressure Regarding the Purchase of F/A-18 Aircraft

As noted above, Mr. Shanahan allegedly tried to force General Neller to buy Boeing F/A-18s, but allegedly General Neller convinced Secretary Mattis to intervene.

We found no evidence to support this allegation. According to General Neller, the Marine Corps did not want to purchase any new F/A-18s, a 4th generation aircraft. He said, "the pressure came from CAPE" to have a mix of 4th and 5th generation aircraft. General Neller told us that Secretary Mattis made the decision to allow the Marine Corps to only purchase 5th generation aircraft. General Neller said that Mr. Shanahan never discussed or pressured him concerning the F/A-18. He also told us, "I did not feel in any way, shape, or form pressured or intimidated [by Mr. Shanahan] or [that] I would be punished or penalized if I did one thing or the other."

Regarding the assertion that Secretary Mattis intervened on his behalf, General Neller told us that he did not get Secretary Mattis to intervene on his behalf, adding "Nobody gets [Secretary] Mattis to do anything."

No witness told us that Mr. Shanahan pressured General Neller or anyone else to purchase F/A-18s. For example, Dr. Griffin said, "I've never been in a meeting where [Mr.] Shanahan tried to force any Service Chiefs to do anything."

Secretary Mattis told us that he never talked to Mr. Shanahan about the F/A-18, and that Mr. Shanahan was not involved. He said, "The fact that we were going to have a mix was decided before [Mr.] Shanahan ever came in [as Deputy Secretary of Defense]." Secretary Mattis added that he never heard Mr. Shanahan propose, initiate, respond to, or address the F/A-18.

Mr. Shanahan told us that he did not pressure General Neller, Secretary Mattis, or anyone else into purchasing the F/A-18. He also stated that he did not have any conversations with either General Neller or Secretary Mattis concerning the F/A-18.

3. Alleged Threats Regarding the Purchase of F-15X Aircraft

As noted above, Mr. Shanahan, allegedly, threatened to cut other Air Force programs unless General Goldfein supported buying Boeing F-15Xs.¹⁰ According to the allegations, the Air Force did not want the F-15X.

We also found no evidence to support this allegation. General Goldfein told us that he did not have any conversation with Mr. Shanahan about the F-15X because of Mr. Shanahan's recusal. He also told us all the conversations he had on the F-15X were with CAPE, and that Mr. Shanahan was never present.

Other witnesses told us that Mr. Shanahan was not involved in the decision to buy F-15Xs. For example, Mr. Daigle told us that the Air Force agreed with CAPE's 4th and 5th generation mix proposal to buy new F-15Xs. He added that CAPE had a meeting with Secretary Mattis, Ms. Wilson, and General Goldfein regarding the 4th and 5th generation mix. Mr. Daigle told us that during this meeting, Ms. Wilson and General Goldfein told Secretary Mattis that the Air Force agreed with the CAPE recommendation. In addition, Mr. Daigle told us that he was not aware of any influence that Mr. Shanahan had on the decision to purchase F-15Xs. Ms. Wilson told us that she had no conversations with Mr. Shanahan about F-15Xs.

Mr. Shanahan told us that that he never pressured or influenced General Goldfein or any other DoD official to purchase F-15Xs. He said that he was not involved in any decisions involving the F-15X. He also said that Secretary Mattis made the decision to purchase F-15Xs.

DoD OIG Conclusions on Decisions about the 4th and 5th Generation Mix, and the F/A-18 and F-15X Aircraft

We concluded that, consistent with his ethical obligations, Mr. Shanahan only participated in broad policy discussions and not in specific discussions about quantities and types of aircraft that DoD decided for its budget request. Secretary Mattis made the aircraft mix decision, and Navy, Air Force, and CAPE officials made the decisions on which specific types and numbers of aircraft to purchase. Mr. Shanahan did not participate in these discussions or decisions, and he did not provide any guidance or direction on this subject.

We also found no evidence that Mr. Shanahan pressured General Neller or the Marine Corps to buy Boeing F/A-18s. We likewise found no evidence that Mr. Shanahan threatened to cut Air Force programs unless General Goldfein supported purchasing Boeing F-15Xs.

¹⁰ We found some documents and articles that referred to this aircraft as F-15EX. However, the allegations, witnesses, and other articles referred to the aircraft as an F-15X or F-15s. For the purposes of this report, we use the term F-15X.

E. KC-46 Aerial Refueling Tanker Acceptance

The allegations asserted that Mr. Shanahan "involved himself" in the KC-46 program by "weighing on" the Air Force to accept delivery of KC-46 aircraft after technical problems delayed Boeing's delivery.

Additionally, Ms. Wilson expressed concern to us that Mr. Shanahan or his staff may have created the appearance of favoritism by tasking Ms. Lord, who supported accepting the delivery of KC-46 aircraft, to convene a meeting on the issue. However, Ms. Wilson added, "it is entirely possible that [Mr.] Shanahan knew nothing about any of that swirling around him, and hence it was a staff problem in a huge swirling change from the departure of [Secretary] Mattis."

The Air Force manages the KC-46 program, and Dr. Roper, the Air Force Service Acquisition Executive, has the authority to make all decisions regarding the KC-46 program. Ms. Wilson told us that she kept Secretary Mattis informed on significant issues regarding the KC-46 program.

On November 8, 2018, Ms. Wilson sent an information memorandum to Secretary Mattis about KC-46 deficiencies. The information memorandum advised Secretary Mattis that the Air Force and Boeing had already agreed on a plan to address two major KC-46 deficiencies. According to the memorandum's routing information, Mr. Shanahan's staff screened the memorandum because it involved a Boeing matter and sent it to Secretary Mattis. The memorandum was not sent to Mr. Shanahan.

On December 7, 2018, Air Force KC-46 program officials signed an agreement with Boeing that defined plans for addressing two major deficiencies. The Air Force expected to begin accepting deliveries in December 2018 and Boeing would fix the deficiencies after acceptance. Boeing would pay to fix the more serious deficiency and the Air Force would pay for the other fixes. Further, the Air Force would withhold a percentage of payments to incentivize Boeing.

According to Ms. Wilson, her concerns related to the following sequence of events. On December 14, 2018, she sent a second information memorandum to Secretary Mattis updating him about the Air Force's agreement with Boeing on fixing KC-46 deficiencies. On December 17, 2018, Mr. Shanahan's staff coordinated with the SOCO and diverted Ms. Wilson's memorandum directly to Secretary Mattis' office, because it related to a particular matter concerning Boeing.

Secretary Mattis had questions about the acceptance agreement between the Air Force and Boeing, and on December 21, 2018, Secretary Mattis' executive secretariat tasked Ms. Wilson to coordinate with Ms. Lord and answer Secretary Mattis' questions. On December 26, 2018, Ms. Wilson's military assistant reported to her that Mr. Shanahan's "office" wanted her to also coordinate with Dr. Griffin to answer Secretary Mattis' questions.

Ms. Lord concurred with the Air Force's plans to accept KC-46 delivery, but Dr. Griffin did not concur with accepting the KC-46 unless Boeing addressed the deficiencies before delivery. Mr. Shanahan's chief of staff told us he had observed this difference of opinion between Ms. Lord and Dr. Griffin, and suggested by e-mail that Ms. Lord should lead a meeting during the first week of 2019 to discuss the issue, since Mr. Shanahan was recused. Mr. Shanahan's chief of staff also told us that he asked Ms. Lord to lead the meeting because the KC-46 acceptance issue involved acquisition and sustainment of a product, which fell under her area of responsibility as Under Secretary of Defense for Acquisition and Sustainment.

According to Ms. Wilson, when Mr. Shanahan's chief of staff asked Ms. Lord to lead an Office of the Secretary of Defense (OSD) meeting to discuss Ms. Wilson's December 14, 2018, KC-46 information memorandum, Ms. Wilson believed that the chief of staff created the appearance that Mr. Shanahan or his staff favored Boeing. Ms. Wilson said she believed this because Ms. Lord had previously concurred with the agreement between the Air Force and Boeing to fix the KC-46 tanker after delivery. According to Ms. Wilson, she felt she had "to make sure that the [KC-46] procurement was protected from undue influence."

However, Ms. Wilson acknowledged to us that Ms. Lord was the senior DoD official who would typically handle Boeing-related matters from which Mr. Shanahan was disqualified. Ms. Wilson also said that it was the Air Force's decision to accept the KC-46, not OSD's, and that she had no knowledge as to whether Mr. Shanahan was involved in this matter. She said the information memorandum she sent to Secretary Mattis was for information only and not for a decision.

On December 28, 2018, Ms. Wilson told her staff that she withdrew her information memorandum for Secretary Mattis. She noted to her staff, Mr. Shanahan's recusal and expressed her concern that Mr. Shanahan's office had received a copy of her memorandum. Ms. Wilson also told her staff that she would decide on the next steps herself, and directed Air Force personnel not to participate in an OSD meeting that Mr. Shanahan's chief of staff suggested Ms. Lord should convene.

We reviewed documents and e-mails concerning the KC-46 acceptance. None of the documents we reviewed indicated that Mr. Shanahan received Ms. Wilson's information memorandum, asked questions of any involved parties, expressed an opinion, issued guidance, made a recommendation, or otherwise participated in the matter of the Air Force acceptance of the KC-46.

In addition, none of the witnesses told us that Mr. Shanahan was involved in the KC-46 acceptance decision. For example, Mr. Shanahan's chief of staff told us that he, not Mr. Shanahan, asked Ms. Lord to lead the meeting because the acquisition issue fell in her area of responsibility.

Ms. Lord told us that the KC-46 acceptance matter was an example of Mr. Shanahan's staff screening Mr. Shanahan from participation in Boeing-related matters. General Goldfein said that Mr. Shanahan did not pressure the Air Force to accept delivery, and he knew of no involvement by Mr. Shanahan. Secretary Mattis told us that Mr. Shanahan had "zero" involvement in this matter.

Dr. Roper, the Air Force Service Acquisition Executive, told us that he eventually made the decision to accept the delivery of the KC-46. Dr. Roper stated that he had the authority to make the decision, and the media reports that Ms. Lord made the decision were not accurate. According to Dr. Roper, Mr. Shanahan was not involved, did not influence him, and the allegation that Mr. Shanahan pressured the Air Force to accept the KC-46 was "absolutely untrue."

Mr. Shanahan also told us that he was not involved and he did not pressure the Air Force to accept the KC-46 delivery.

DoD OIG Conclusion on KC-46 Aerial Tanker Acceptance

We concluded that Mr. Shanahan had no involvement in the Air Force's acceptance of the KC-46 delivery. Dr. Roper made the decision. Mr. Shanahan's staff sought the SOCO's advice and screened Mr. Shanahan from this matter. Ms. Lord cited the KC-46 acceptance as a specific example of an effective screening process that diverted a Boeing-related particular matter from Mr. Shanahan to alternate DoD officials. We determined that Mr. Shanahan complied with his ethics agreements and ethical obligations in this matter.

F. Additional Matters Not Raised in the Allegations

In addition to the specific allegations, we explored other matters that witnesses raised during interviews. First, we discuss concerns raised about Mr. Shanahan's meeting with Mr. Musk, the SpaceX CEO. We then discuss a concern raised about Mr. Shanahan's comment about the Boeing Virtual Warfare Center. Finally, we discuss a comment Mr. Shanahan made about a classified matter related to a Boeing product.

1. Mr. Shanahan's Meeting with Mr. Musk

Ms. Wilson told us that she was concerned about a meeting between Mr. Shanahan and Mr. Musk, the SpaceX CEO. Mr. Shanahan and Ms. Wilson were both scheduled to meet with Mr. Musk, separately, on December 6, 2018. Ms. Wilson told us that she thought that Mr. Shanahan should not have met with Mr. Musk because SpaceX and Boeing were competitors for an Air Force launch services contract.

We determined that on November 29, 2018, in preparation for the meeting scheduled between Mr. Shanahan and Mr. Musk on December 6, 2018, a member of Mr. Shanahan's staff sought advice from the SOCO regarding the proposed meeting. The SOCO Acting Director responded in an e-mail that he had "no ethics objection to the proposed meeting" as long as discussion did not involve an ongoing procurement.

Ms. Wilson told us that on the day of the meeting she told Mr. Shanahan that he "probably need[ed] to recuse" himself from the meeting because Boeing had just competed with SpaceX and won an Air Force "launch service contract." Ms. Wilson told us that Mr. Shanahan told her that Mr. Musk was not going to talk to him about the launch service contract.

Mr. Shanahan told us that he did not recall Ms. Wilson recommending to him not to meet with Mr. Musk, but Mr. Shanahan recalled her telling him that he should not talk about acquisition issues.

On December 6, 2018, Ms. Wilson met with Mr. Musk. According to Ms. Wilson, they discussed the launch service contract that SpaceX did not win.

Later that day, Mr. Shanahan met with Mr. Musk for an hour. A member of Mr. Shanahan's staff attended and summarized the meeting in a memorandum for the record (MFR). According to the MFR, Mr. Musk discussed increased competition from China, his plans to self-fund and launch communication satellites, and his production experience at Tesla. Mr. Musk also noted that SpaceX was not successful in the recent Air Force competition for a launch service contract and that SpaceX had written a poor

proposal that "missed the mark." According to the MFR, Mr. Shanahan did not comment on the bid competition.

Mr. Shanahan told us that he met with Mr. Musk because he "thought it would be interesting to talk to him about his views of the future." Mr. Shanahan told us that Mr. Musk discussed his view on "electrification and autonomy," and how he saw "that space evolving here in the next 5-years because we have some really critical decisions to make in terms of our logistics system in the Army and the combat vehicles."

After Mr. Shanahan's meeting with Mr. Musk, Ms. Wilson shared her concerns about the meeting with Mr. Thomas Ayres, the Air Force General Counsel. Mr. Ayres spoke to the SOCO Acting Director about the meeting. The SOCO Acting Director told Mr. Ayres that Mr. Shanahan's staff had contacted him prior to the proposed meeting as part of Mr. Shanahan's screening process, and that the SOCO Acting Director determined that the meeting did not violate Mr. Shanahan's ethics agreement. The SOCO Acting Director also told Mr. Ayres that "this proactive issues spotting" was "indicative of the attention" Mr. Shanahan's staff gave to screening him from Boeing matters.

Additionally, the SOCO Acting Director shared with Mr. Ayres the MFR summary of the meeting and told Mr. Ayres that based on the MFR and conversations with Mr. Shanahan's staff, the SOCO Acting Director had determined that Mr. Shanahan "did not participate personally and substantially in any particular matter involving specific parties that [were] directly and substantially related to Boeing." The SOCO Acting Director also told Mr. Ayres that Mr. Shanahan's ethics agreement "does not prevent him from receiving information. It only limits [Mr. Shanahan's] personal and substantial participation." The SOCO Acting Director also offered to speak with anyone on Mr. Ayres' team who might have questions about Mr. Shanahan's ethics agreement or screening process.

Mr. Ayres told us that the information from the SOCO Acting Director "allayed" his concern about the meeting between Mr. Shanahan and Mr. Musk, and he later told this to Ms. Wilson.

DoD OIG Conclusion on Mr. Shanahan's Meeting with Elon Musk

We concluded that Mr. Shanahan's meeting with Mr. Musk did not violate his ethical obligations. We determined that Mr. Shanahan's staff obtained an ethics opinion before the meeting and the SOCO Acting Director had no ethics objections to the proposed meeting. Additionally, the SOCO Acting Director reviewed the MFR that summarized the meeting and found that Mr. Shanahan did not discuss any particular matter involving Boeing and complied with his ethical obligations.

2. Boeing Virtual Warfare Center

Mr. Daigle told us about a comment that Mr. Shanahan made to him about visiting contractor facilities, including a Boeing facility.

According to Mr. Daigle, he and Mr. Shanahan discussed the DoD's analytical modeling and simulation capabilities on several occasions. On one occasion, sometime in March 2018, Mr. Shanahan mentioned to Mr. Daigle that Boeing's Virtual Warfare Center and Lockheed Martin's Center for

Innovation were good examples of modeling and simulation capabilities that DoD should have.¹¹ Mr. Daigle told us that Mr. Shanahan wanted the DoD to build its own modeling and simulation environment.

Mr. Daigle asked one of his deputy directors to visit the Boeing Virtual Warfare Center, and wrote to her that she "may also want to visit" Lockheed Martin's Lighthouse. According to the deputy director, she and two other DoD personnel visited the Boeing Virtual Warfare Center for 2-hours on June 4, 2018, and provided Mr. Daigle a verbal briefing on the modeling and simulation capabilities they had observed. She told us she received no information or briefings from Mr. Shanahan about the Boeing Virtual Warfare Center. She told us that she did not have the time to visit any other similar facilities. The deputy director also told us that CAPE is still in the process of evaluating modeling and simulation capabilities and that CAPE may visit other contractor facilities in the future.

Mr. Daigle told us that he and the deputy director provided Mr. Shanahan a "back brief" of the visit. Mr. Daigle said that after the visit he told Mr. Shanahan that CAPE could provide senior DoD leadership similar analytical information capabilities through "a much faster and much less expensive mechanism" than the kind of virtual simulation centers Boeing and Lockheed Martin had developed over long periods of time and at great expense. Mr. Daigle told us that he did not feel Mr. Shanahan directed him to "take action in any way" that would benefit Boeing. He also told us that he never interpreted the conversation he had with Mr. Shanahan about visiting the two facilities as "untoward."

Mr. Shanahan told us that he had a discussion with Mr. Daigle about increasing the DoD's analytical rigor and suggested that CAPE observe what private industry had done to develop war modeling and simulation tools. He stated, "I did not direct [CAPE] to go do anything other than visit Lockheed [Lighthouse] and visit Boeing [Virtual Warfare Center] because they have these capabilities."

Mr. Shanahan added that because private sector "industry" has analytical modeling capability, he encouraged DoD personnel to talk to and learn from "industry." Mr. Shanahan told us that after making the comment to Mr. Daigle, he had no involvement, and he left it up to CAPE to decide.

DoD OIG Conclusion on Boeing Virtual Warfare Center

We concluded that Mr. Shanahan's comment did not violate his ethics agreements or ethical obligations. Mr. Shanahan's suggestion to Mr. Daigle to visit Boeing and Lockheed Martin facilities to understand their capabilities did not violate any ethical obligations.

3. Classified Matter

In addition, we asked all witnesses to tell us about any other instances when they heard Mr. Shanahan talk about Boeing matters. In response, four witnesses told us different variations of comments that Mr. Shanahan made about a classified matter related to a Boeing product. This section

¹¹ The Virtual Warfare Center in St. Louis, Missouri, enables live and virtual military forces and systems to interact with one another to create realistic war scenarios in a complex and immersive learning environment. The Center for Innovation, or "The Lighthouse," in Suffolk, Virginia, is Lockheed Martin's hub for cross-domain integration, experimentation, decision analysis, and modeling and simulations, in real and synthetic environments.

provides an unclassified summary of the information we considered and our determination regarding this matter.

We determined it is likely that Mr. Shanahan made the comments at several separate meetings. One of the four witnesses provided us with names of other potential witnesses who may have heard the comments. We interviewed these other potential witnesses, but they told us they did not recall the comments.

The accounts that we received from the four witnesses provided similar information about the context and content of Mr. Shanahan's comments.

- Mr. Shanahan's comments were focused on DoD's capabilities;
- Mr. Shanahan's comments were not part of any consideration, recommendation, or decision to purchase a Boeing product; and
- The comments did not disparage any of Boeing's competitors.

In addition, Mr. Shanahan and the other senior DoD officials participated in dozens of meetings regarding the same classified matter, during which Mr. Shanahan did not make any similar comments. Other witnesses told us that Mr. Shanahan did not make any similar comments in any other venue.

Mr. Shanahan told us that any comments that he made about the classified matter were only about increasing DoD capabilities.

We also examined classified documents relating to the recommendations and decision about this matter. The documents indicate that Military Service and CAPE officials presented their recommendations related to a product directly to Secretary Mattis, who made the final decision on the matter. These documents did not include any indication that Mr. Shanahan had any involvement or influence over the recommendations or decision. Additionally, witnesses told us that Mr. Shanahan was not involved in the recommendations or decision regarding the matter. Secretary Mattis, the decision maker, also told us that Mr. Shanahan never talked to him about the matter.

DoD OIG Conclusion on Classified Matter

We concluded that Mr. Shanahan made comments about a classified matter related to a Boeing product. However, witnesses and Mr. Shanahan described his comments as addressing DoD capabilities. Consistent with his ethical obligations, Mr. Shanahan can participate in discussions and make high-level decisions regarding DoD capabilities. In this case, Mr. Shanahan's comments were about general DoD capabilities and did not constitute a recommendation or decision about a particular matter involving Boeing. Secretary Mattis made a decision about a particular matter separately, without Mr. Shanahan's input. We concluded that Mr. Shanahan's comments about this classified matter did not violate his ethical obligations.

G. Evaluation of Mr. Shanahan's Adherence to his Ethical Obligations

Finally, as part of our investigation, we asked witnesses for their observations about Mr. Shanahan's adherence to his ethical obligations. We also evaluated the screening arrangement he had with his staff for Boeing-related matters and documents sent to the Executive Secretariat. In this section, we discuss the evidence regarding these issues.

1. Witness Characterizations of Mr. Shanahan's Adherence to Ethical Obligations

We asked the witnesses if Mr. Shanahan had said or done anything that would cause them to question his ethics or impartiality. Ms. Wilson told us that she had concerns about Mr. Shanahan's involvement in the KC-46 acceptance, his meeting with Mr. Musk, and the classified matter. We addressed those issues in previous sections of this report. Ms. Wilson also told us with regard to those matters:

With respect to [when Mr. Shanahan met with Mr. Musk] ... I felt in a difficult ethical position myself in that case. So, that one directly involved [Mr. Shanahan]. So the other [KC-46 and classified matter] may be just sloppy staff work, but I think at least on one occasion, I felt uncomfortable.

None of the other witnesses told us that they had any concerns regarding his adherence to his ethical obligations. Many reported that Mr. Shanahan was attentive to his ethical obligations.

For example, Secretary Mattis told us, "I thought of him as part of my ethical standard bearer the way he carried out his duties on a whole host of issues.... I always saw him as part of my solution when it came to ethical endurance." Mr. Norquist told us that Mr. Shanahan was very careful to follow his ethics agreement and that Mr. Shanahan often reiterated that his staff put up "screening filters" for Boeing-related matters. General Goldfein told us that Mr. Shanahan was "very disciplined about adhering to the recusal." The Chief of Staff of the Army, General Mark Milley, told us, "I think I know him pretty well, reasonably well from a professional standpoint. I haven't seen him, not one iota about anything Boeing or anything else, do anything that I would consider unethical."

Additionally, many witnesses provided examples of Mr. Shanahan taking actions that demonstrated his intent to comply with his ethical obligations. For example, General Goldfein told us that on two occasions when the discussion started "straying into" the Boeing KC-46, Mr. Shanahan "actually interjected and said, 'We have to stop the conversation.' And one of those times he actually got up and said, 'Hey, I do understand you need to talk about this so I'm going to depart.'"

According to General Hyten, in September 2017, he approached Mr. Shanahan and attempted to brief him on a Boeing program. General Hyten told us that Mr. Shanahan said, "Stop. That's a Boeing program. I can't talk about it." General Hyten told us that he asked Mr. Shanahan, "Not even conceptually about future capabilities?" and that Mr. Shanahan said, "No, I can't talk about that at all."

In addition, senior DoD officials we interviewed told us that they were generally aware of Mr. Shanahan's ethics agreement and supported Mr. Shanahan's efforts to comply with his obligations. For example, Secretary Mattis told us that it was "common knowledge" that Mr. Shanahan had restrictions based on his Boeing career and many other senior DoD officials also had similar restriction

issues from their careers in private industry. Secretary Mattis told us, "we'd be looking at something and one of us would say, 'This is something that the Deputy can't be involved [in].'"

Mr. Daigle told us that the SOCO made it very clear that CAPE could not have Boeing-related discussions with Mr. Shanahan because of his ethical obligations. Mr. Daigle added that the SOCO reviewed all of the content that was going out of CAPE to Mr. Shanahan to determine if Boeing was involved. Dr. Griffin told us that everyone in his office knew that they could not discuss Boeing programs with Mr. Shanahan. Dr. Griffin added that his office ensured that Boeing related matters were sent to the "proper place" without Mr. Shanahan's involvement.

2. Mr. Shanahan's Screening Process

We also interviewed witnesses about Mr. Shanahan's specific screening process for Boeing matters. In addition, we reviewed Executive Secretariat Boeing-related documents to determine whether the process adhered to the screening arrangement.¹²

After the President nominated Mr. Shanahan to become the Deputy Secretary of Defense, the SOCO worked closely with Mr. Shanahan during the pre-confirmation vetting process, including a pre-nomination ethics brief coordinated with the Office of Government Ethics.

On July 18, 2017, the Senate confirmed Mr. Shanahan's nomination. After his confirmation, the SOCO trained Mr. Shanahan's staff several times on the screening process. The SOCO also worked closely with his staff to proactively identify and divert issues related to Boeing from which he was disqualified to alternate DoD officials. On July 25, 2017, Mr. Shanahan sent a memorandum, which we discussed in the Background section of this report, to Secretary Mattis concerning his ethics agreement and screening arrangement.

According to members of the Executive Secretariat and Mr. Shanahan's staff, they screened documents and meeting requests that involved Boeing. The staff routed requests for decisions or recommendations involving Boeing matters to alternate DoD officials and diverted Mr. Shanahan away from discussions related to Boeing products. The staff also frequently consulted the SOCO when they had any questions. The close working relationship between the SOCO and Mr. Shanahan's staff included ongoing training and feedback.

Both the SOCO Acting Director and the former SOCO Director told us that Mr. Shanahan fully complied with his ethical obligations. The SOCO Acting Director characterized Mr. Shanahan's adherence as "talking the talk" and "walking the walk because he asks for advice." The SOCO Acting Director sent an e-mail to Mr. Shanahan's chief of staff stating, "you and your team have really set the example for other OSD staffs to follow." The SOCO Acting Director and the former SOCO Director also told us that Mr. Shanahan never requested a waiver or an authorization under his ethics agreement in order to participate in any Boeing-related matters.

¹² All documents for the Secretary of Defense and the Deputy Secretary of Defense first go to the DoD Executive Secretariat. The DoD Executive Secretariat enters the documents into a database. We screened the database for documents related to Boeing.

Mr. Shanahan told us, "I didn't want to get any waivers or exemptions." Mr. Shanahan also told us that his staff worked closely with the SOCO to "put in a pretty exhaustive screening process and it was multi-layered.... the process works, it works very well, and that the people in the office are well trained on it." Mr. Shanahan added that he was "ultimately" responsible for the screening arrangement, and the SOCO Acting Director was in a "constant audit role."

IV. DOD OIG'S OVERALL CONCLUSIONS

We did not substantiate any of the allegations. We determined that Mr. Shanahan fully complied with his ethics agreements and his ethical obligations regarding Boeing. We determined that Mr. Shanahan did not make the alleged comments and did not promote Boeing or disparage its competitors.

While Mr. Shanahan did routinely refer to his prior industry experience in meetings, witnesses interpreted it, and told us, that he was doing it to describe his experience and to improve Government management of DoD programs, rather than to promote Boeing or its products.

With regard to the specific alleged comments about Boeing, we determined that Mr. Shanahan did not make comments promoting or favoring Boeing. Rather, Mr. Shanahan shared his aircraft industry experience as an industrial engineer and supply chain manager to highlight best practices, decrease costs, and increase performance for the DoD's benefit, not to promote Boeing or any specific aircraft.

We also concluded that Mr. Shanahan did not make any comments that specifically disparaged Boeing's competitors, including Lockheed Martin and its CEO. We determined that Mr. Shanahan's comments were directed at holding contractors accountable and saving the Government money, consistent with his duties as Deputy Secretary of Defense.

Mr. Shanahan did not "repeatedly dump" on the F-35 aircraft in meetings as alleged. One witness said that Mr. Shanahan initially called the F-35 aircraft "f---ed up" early in his tenure as Deputy Secretary of Defense, but changed his opinion about the aircraft after meeting with F-35 pilots. Other comments by Mr. Shanahan referred to the F-35 *program*, not the aircraft. We determined that Mr. Shanahan's comments were about the F-35 *program* were substantive, related to the program's performance, and were consistent with comments about the F-35 program made by other senior Government officials.

We concluded that Mr. Shanahan's participation in the 4th and 5th generation mix discussion was fully consistent with his ethical obligations. We determined that Mr. Shanahan only participated in broad policy discussions and not in specific discussions about quantities and types of aircraft to purchase. We found no evidence that Mr. Shanahan pressured General Neller or the Marine Corps to buy Boeing F/A-18s. We likewise found no evidence that Mr. Shanahan threatened to cut Air Force programs unless General Goldfein supported purchasing Boeing F-15Xs. We concluded that Secretary Mattis made the fighter mix decision, and that Navy, Air Force, and CAPE officials made the decisions on which specific types and numbers of aircraft to purchase.

We also concluded that Mr. Shanahan did not pressure the Air Force to accept the KC-46 delivery. Dr. Roper made the decision, and we found no evidence that Mr. Shanahan was involved in the matter personally or through guidance to his staff.

With regard to three additional matters raised during our witness interviews, we concluded that Mr. Shanahan complied with his ethical obligations. Mr. Shanahan's meeting with Mr. Musk did not violate any ethics agreement or ethical obligations. Mr. Shanahan's staff obtained an ethics opinion before the meeting that the DoD Standards of Conduct Office (SOCO) Acting Director had "no ethics objection to the proposed meeting." Additionally, the SOCO Acting Director reviewed the MFR that summarized the meeting and found that Mr. Shanahan complied with his ethical obligations.

We determined that Mr. Shanahan's suggestion to Mr. Daigle to visit Boeing and Lockheed Martin facilities did not provide any preferential treatment to Boeing or violate any ethical obligation.

Mr. Shanahan made comments about a classified matter related to a Boeing product, but witnesses and Mr. Shanahan described his comments as addressing DoD capabilities. Consistent with his ethical obligations, Mr. Shanahan can participate in discussions and make high-level decisions regarding DoD capabilities. In this case, Mr. Shanahan's comments were about general DoD capabilities and did not constitute a recommendation or decision about a particular matter involving Boeing. Secretary Mattis made a decision about the particular matter separately and without Mr. Shanahan's input. Mr. Shanahan's comments did not violate his ethical obligations.

Finally, we determined that the SOCO provided initial and ongoing ethics training to Mr. Shanahan and his staff, and that Mr. Shanahan's alternate DoD officials were well-informed about Mr. Shanahan's Boeing disqualifications. Other senior DoD officials were generally aware of Mr. Shanahan's Boeing disqualifications. We also were told of several instances when a specific Boeing matter was raised at a meeting and Mr. Shanahan and others stopped the discussion, or Mr. Shanahan left the meeting so the matter could be discussed. We determined that Mr. Shanahan and his staff, working closely with the SOCO, created a rigorous multi-layered screening process to identify Boeing matters from which Mr. Shanahan was disqualified and divert them to alternate DoD officials.

In sum, we found that the allegations were not substantiated, and that Mr. Shanahan fully complied with his ethics agreements and ethical obligations regarding Boeing and its competitors.

APPENDIX – ETHICAL STANDARDS AND AGREEMENTS

Executive Order 13770, "Ethics Commitments by Executive Branch Appointees," January 28, 2017

The order requires every appointee in every executive agency appointed on or after January 20, 2017, to sign a pledge. This pledge includes a requirement for appointees to not, for a period of 2 years from the date of appointment, participate in any particular matter involving specific parties that was directly and substantially related to the appointee's former employer or clients, including regulations and contracts.

DoD 5500.07-R, "Joint Ethics Regulation (JER)," August 30, 1993, including changes 1-7 (November 17, 2011)

The JER provides a single source of standards of ethical conduct and ethics guidance for DoD employees. Chapter 2, Section 1, of the JER, "Standards of Ethical Conduct," incorporates Title 5, Code of Federal Regulations (CFR), Part 2635, "Standards of Ethical Conduct for Employees of the Executive Branch," in its entirety.

Subpart A, "General Provisions"

Section 2635.101(b)(14), "General Principles," requires employees to endeavor to avoid any actions creating the appearance that they are violating the law or ethical standards set forth in Part 2635. Whether particular circumstances create an appearance that the law or these standards have been violated shall be determined from the perspective of a reasonable person with knowledge of the relevant facts.

Subpart D, "Conflicting Financial Interests"

Section 2635.402, "Disqualifying financial interests," states, in part, an employee is prohibited by criminal statute, Title 18, United States Code, section 208(a), from participating in an official capacity in any particular matter in which, to his knowledge, he or any person whose interests are imputed to him has a financial interest, if the particular matter will have a direct and predictable effect on that interest. Unless there is a waiver or exemption, an employee shall disqualify himself from participating in such matters by not participating in them. An employee responsible for his own assignment [to a particular matter] should take whatever steps are necessary to ensure that he does not participate in the matter from which he is disqualified.

Appropriate oral or written notification of the employee's disqualification may be made to coworkers by the employee or a supervisor to ensure that that employee is not involved in a matter from which he is disqualified. Where an employee's official duties create a substantial likelihood that the employee may be assigned to a particular matter from which he is disqualified, the employee should advise his supervisor or other person responsible for his assignments so that conflicting assignments can be avoided.

Subpart E, "Impartiality in Performing Official Duties"

Section 2635.502, "Personal and business relationships," states, in part, where an employee knows that a particular matter involving specific parties is likely to have a direct and predictable effect on the financial interest of a member of his household, or knows that a person with whom he has a covered relationship is or represents a party to such matter, and where the employee determines that the circumstances would cause a reasonable person with knowledge of the relevant facts to question his impartiality in the matter, the employee should not participate in the matter unless he has informed the agency designee of the appearance problem and received authorization from the agency designee.

Subpart G, "Misuse of Position"

Section 2635.702, "Use of public office for private gain," states, in part, an employee shall not use his public office for his own private gain, for the endorsement of any product, service, or enterprise, or for the private gain of friends, relatives, or persons with whom the employee is affiliated in a nongovernmental capacity.

Subsection 2635.702(c) states, in part, an employee shall not use or permit the use of his Government position or title or any authority associated with his public office to endorse any product, service, or enterprise.

JER, Chapter 2, Section 2, "Supplemental Standards of Ethical Conduct For Employees of the Department of Defense"

Paragraph 2-204, "Standard for Accomplishing Disqualification"

Subparagraph 2-204a, "Disqualifying Financial Interests," states, in part, that a DoD employee who is required, in accordance with 5 CFR section 2635.402(c), to disqualify himself from participation in a particular matter to which he has been assigned shall, notwithstanding the guidance in 5 CFR section 2635.402, provide written notice of disqualification to his supervisor upon determining that he will not participate in the matter.

Subparagraph 2-204b, "Disqualification to Ensure Impartiality," states, in part, that a DoD employee who is required, in accordance with 5 CFR section 2635.502(e), to disqualify himself from participation in a particular matter involving specific parties to which he has been assigned shall, notwithstanding the guidance in 5 CFR section 2635.502(e)(1) and (2), provide written notice of disqualification to his supervisor upon determining that he will not participate in the matter.

JER, Chapter 3, "Activities with Non-Federal Entities"

Section 2, "Official Participation in Non-Federal Entities"

Paragraph 3-204, "Impartiality of DoD Employees," states, in part, that DoD employees are generally prohibited from engaging in any official activities in which a non-Federal entity is a party or has a financial interest if the DoD employee has been an officer in the non-Federal entity within the last year.

Paragraph 3-209, "Endorsement," states, in part, endorsement of a non-Federal entity, event, product, service, or enterprise may neither be stated nor implied by DoD or DoD employees in their official capacities and titles, positions, or organization names may not be used to suggest official endorsement or preferential treatment of any non-Federal entity.

The following pages are copies of Mr. Shanahan's ethics agreement, dated June 7, 2017, and his Ethics Pledge, dated July 19, 2017.

June 7, 2017

Ms. Ruth M.S. Vetter Alternate Designated Agency Ethics Official Office of the General Counsel Department of Defense Washington, DC 20301

Dear Ms. Vetter:

The purpose of this letter is to describe the steps that I will take to avoid any actual or apparent conflict of interest in the event that I am confirmed for the position of Deputy Secretary of Defense.

As required by 18 U.S.C. § 208(a), I will not participate personally and substantially in any particular matter in which I know that I have a financial interest directly and predictably affected by the matter, or in which I know that a person whose interests are imputed to me has a financial interest directly and predictably affected by the matter, unless I first obtain a written waiver, pursuant to 18 U.S.C. § 208(b)(1), or qualify for a regulatory exemption, pursuant to 18 U.S.C. § 208(b)(2). I understand that the interests of the following persons are imputed to me: any spouse or minor child of mine; any general partner of a partnership in which I am a limited or general partner; any organization in which I serve as officer, director, trustee, general partner or employee; and any person or organization with which I am negotiating or have an arrangement concerning prospective employment.

Within 90 days of my confirmation, I will divest my interests in the entities listed in Attachment A. With regard to each of these entities, I will not participate personally and substantially in any particular matter that to my knowledge has a direct and predictable effect on the financial interests of the entity until I have divested it, unless I first obtain a written waiver, pursuant to 18 U.S.C. § 208(b)(1), or qualify for a regulatory exemption, pursuant to 18 U.S.C. § 208(b)(2).

Upon confirmation, I will resign from my position with the University of Washington. For a period of one year after my resignation from this entity, I will not participate personally and substantially in any particular matter involving specific parties in which I know that entity is a party or represents a party, unless I am first authorized to participate, pursuant to 5 C.F.R. § 2635.502(d).

My employment with the Boeing Company will end on June 7, 2017. I will not participate personally and substantially in any particular matter involving specific parties in which I know the Boeing Company is a party or represents a party, unless I am first authorized to participate, pursuant to 5 C.F.R. § 2635.502(d), in a writing that describes the circumstances necessitating the authorization.

Ms. Ruth M.S. Vetter Page 2

Following my departure from the Boeing Company, I will receive a lump sum annual cash incentive payment, as well as a cash performance award payment, for the work I performed up to the date of my departure from the Boeing Company. These payments will be pro-rated based on service time. These payments will be made within 30 days of leaving the Boeing Company, and are consistent with payments made to other departing Boeing executives. The Boeing Company will use an objective formula to calculate these payments. If these payments are not made before I assume the duties of Deputy Secretary of Defense, they will be forfeited. I will also receive payment for accrued vacation that I have not used, consistent with company practice for departing employees. If I begin my service as Deputy Secretary of Defense prior to receiving this payment, I will not participate personally and substantially in any particular matter that to my knowledge has a direct and predictable effect on the ability or willingness of the Boeing Company to make this payment to me, unless I first obtain a written waiver, pursuant to 18 U.S.C. § 208(b)(1).

I own shares of Boeing Company common stock. I also own vested and unvested Restricted Stock Units (RSUs) in the Boeing Company. Following the date my employment with the Boeing Company ends, unvested RSU awards will vest on a pro rata basis based on service time, pursuant to stated company policy. Unvested Supplemental RSUs and unvested Career Shares will vest in full. Performance Based Restricted Stock Units (PBRSUs) will vest pro rata based on service time, with payment awarded at target performance for the periods February 2015 – February 2018, February 2016 – February 2019, and February 2017 – February 2020. The Boeing Company will distribute all RSUs to me within 30 days of my separation from the Boeing Company. If the RSUs are not distributed to me before I assume the duties of Deputy Secretary of Defense, they will be forfeited. Within 90 days of my confirmation, I will divest all of my common stock in the Boeing Company. Until I have divested all of these financial interests, I will not participate personally and substantially in any particular matter that to my knowledge has a direct and predictable effect on the financial interests of the Boeing Company, unless I first obtain a written waiver, pursuant to 18 U.S.C. § 208(b)(1), or qualify for a regulatory exemption, pursuant to 18 U.S.C. § 208(b)(2)

I also own vested stock options for shares of Boeing Company common stock. I do not own unvested stock options. Within 90 days of my confirmation, I will divest my vested stock options in the Boeing Company. If I divest the stock options by exercising them, I will divest the resulting stock within 90 days of my confirmation. Until I have divested all of these financial interests, I will not participate personally and substantially in any particular matter that to my knowledge has a direct and predictable effect on the financial interests of the Boeing Company, unless I first obtain a written waiver, pursuant to 18 U.S.C. § 208(b)(1), or qualify for a regulatory exemption, pursuant to 18 U.S.C. § 208(b)(2).

I participate in the Boeing Company Deferred Compensation and Supplemental Benefit plans, which include Boeing stock. Upon my departure from the Boeing Company, I will receive lump sum payouts of these plans within 30 days of my separation. If these payments are not made before I assume the duties of Deputy Secretary of Defense, they will be forfeited.

As a retirement eligible executive of the Boeing Company, I am entitled to continued participation in retiree benefits, consisting of two defined benefit plans, health insurance and life insurance, charitable matching contributions for the rest of my life, and tax preparation services Ms. Ruth M.S. Vetter Page 3

for the 2017 tax year, consistent with the corporation's practice for departing executives. Therefore, I will not participate personally and substantially in any particular matter that to my knowledge has a direct and predictable effect on the ability or willingness of the Boeing Company to provide these contractual benefits, unless I first obtain a written waiver, pursuant to 18 U.S.C. § 208(b)(1).

If I have a managed account or otherwise use the services of an investment professional during my appointment, I will ensure that the account manager or investment professional obtains my prior approval on a case-by-case basis for the purchase of any assets other than cash, cash equivalents, investment funds that qualify for the exemption at 5 C.F.R. § 2640.201(a), obligations of the United States, or municipal bonds.

I will meet in person with you during the first week of my service in the position of Deputy Secretary of Defense in order to complete the initial ethics briefing required under 5 C.F.R. § 2638.305. Within 90 days of my confirmation, I will document my compliance with this ethics agreement by notifying you in writing when I have completed the steps described in this ethics agreement.

I understand that as an appointee I will be required to sign the Ethics Pledge (Exec. Order No. 13770) and that I will be bound by the requirements and restrictions therein in addition to the commitments I have made in this ethics agreement.

I understand that I may be eligible to request a Certificate of Divestiture for qualifying assets and that a Certificate of Divestiture is effective only if obtained prior to divestiture. Regardless of whether I receive a Certificate of Divestiture, I will ensure that all divestitures discussed in this agreement occur within the agreed upon timeframes and that all proceeds are invested in non-conflicting assets.

I have been advised that this ethics agreement will be posted publicly, consistent with 5 U.S.C. § 552, on the website of the U.S. Office of Government Ethics with ethics agreements of other Presidential nominees who file public financial disclosure reports.

Sincerely

Patrick M. Shanahan

1 2

Ms. Ruth M.S. Vetter Page 4

AbbVie (ABBV)

Accenture (ACN)

ATTACHMENT A

~	neconnaio (nen)
3	Alfa Laval ADR (ALFVY)
4	Allete Inc (ALE)
5	Ashtead Group ADR (ASHTY)
6	Assa Abloy ADR (ASAZY)
7	Astrazeneca PLC (AZN)
8	Atlas Copco ADR (ATLKY)
9	Avery Dennison (AVY)
10	BAE Systems ADR (BAESY)
11	Baxter International (BAX)
12	Bayer ADR (BAYRY)
13	BBA Aviation ADR (BBAVY)
14	Berkshire Hathaway Class B (BRKB)
	Boeing Company (BA) (including the Boeing
15	Stock Fund)
16	BP PLC (BP)
17	CA Inc. (CA)
18	CACI International (CACI)
19	Coherent (COHR)
20	Compass Group ADR (CMPGY)
21	CSL LTD ADR (CSLLY)
22	Cummins Inc (CMI)
23	Dassault Systems ADR (DASTY)
24	Edison International (EIX)
25	Edwards Lifesciences (EW)
26	Electronics For Imaging (EFII)
27	Emcor (EME)
28	Emerson Electric (EMR)
29	Enersys (ENS)
30	Entergy Corp (ETR)
31	Fastenal (FAST)
32	Fresenius SE&KGAA ADR (FSNUY)
33	General Motors (GM)
34	GlaxoSmithKline (GSK)
35	Globus Medical (GMED)
36	Granite Construction (GVA)
37	Grifols SA ADR (GRFS)
38	Home Depot (HD)

Ms. Ruth M.S. Vetter Page 5 39 Informa ADR (IFJPY) 40 Integra Lifesciences (IART) 41 Intel Corp (INTC) 42 International Business Machines (IBM) 43 Iridium Communications (IRDM) 44 KDDI Corp (KDDIY) 45 Komatsu ADR (KMTUY) 46 Korn/Ferry Intl (KFY) 47 L3 Technologies (LLL) 48 Linde AG ADR (LNEGY) 49 Matson (MATX) 50 Medtronic (MDT) 51 Mercury Systems (MRCY) 52 Merit Medical (MMSI) 53 Microsemi (MSCC) 54 Mitsui & Co ADR (MITSY) 55 Morgan Stanley (MS) 56 Motorola Solutions (MSI) 57 Nestle SA ADR (NSRGY) 58 Novartis AG (NVS) 59 Omnicell (OMCL) 60 Orbital ATK (OA) Park24 Company LTD ADR (PKCOY) 61 62 Pfizer (PFE) 63 POSCO (PKX) 64 Procter & Gamble (PG) 65 Qualcomm Incorporated (QCOM) 66 Roche Holdings (RHHVF) 67 Roche Holdings Limited ADR (RHHBY) 68 Royal Dutch Shell (RDS/A) 69 Royal Dutch Shell ADR (RDSA) 70 SAP SE (SAP) 71 Shire ADR (SHPG) 72 Sinclair Broadcast (SBGI) 73 SK Telecom LTD (SKM) 74 Sonova Holdings ADR (SONVY) 75 Sony Corporation (SNE) 76 Stamps.com (STMP) 77 Sysco (SYY)

- 78 Sysmex ADR (SSMXY)
- 79 Total SA (TOT)

Ms. Ruth M.S. Vetter Page 6

- 80 Total System Services (TSS)
- 81 Tyson Foods (TSN)
- 82 United Rentals (URI)
- 83 Valero Energy (VLO)
- 84 Verisk Analytics (VRSK)
- 85 Wolters Kluwer ADR (WTKWY)
- 86 Wolverwine Worldwide (WWW)
- 87 WPP PLC ADR (WPPGY)

ETHICS PLEDGE

As a condition, and in consideration, of my employment in the United States Government in an appointee position invested with the public trust, I commit myself to the following obligations, which I understand are binding on me and are enforceable under law:

1. I will not, within 5 years after the termination of my employment as an appointee in any executive agency in which I am appointed to serve, engage in lobbying activities with respect to that agency.

2. If, upon my departure from the Government, I am covered by the post-employment restrictions on communicating with employees of my former executive agency set forth in section 207(c) of title 18, United States Code, I agree that I will abide by those restrictions.

3. In addition to abiding by the limitations of paragraphs 1 and 2, I also agree, upon leaving Government service, not to engage in lobbying activities with respect to any covered executive branch official or non-career Senior Executive Service appointee for the remainder of the Administration.

4. I will not, at any time after the termination of my employment in the United States Government, engage in any activity on behalf of any foreign government or foreign political party which, were it undertaken on January 20, 2017, would require me to register under the Foreign Agents Registration Act of 1938, as amended.

5. I will not accept gifts from registered lobbyists or lobbying organizations for the duration of my service as an appointee.

6. I will not, for a period of 2 years from the date of my appointment, participate in any particular matter involving specific parties that is directly and substantially related to my employer or former clients, including regulations and contracts.

7. If I was a registered lobbyist within the 2 years before the date of my appointment, in addition to abiding by the limitations of paragraph 6, I will not, for a period of 2 years after the date of my appointment, participate in any particular matter on which I lobbied within the 2 years before the date of my appointment or participate on the specific issue area in which that particular matter falls.

8. I agree that any hiring or other employment decisions I make will be based on the candidate's qualifications, competence, and experience.

9. I acknowledge that the Executive Order entitled 'Ethics Commitments by Executive Branch Appointees,' issued by the President on January 28, 2017, which I have read before signing this document, defines certain terms applicable to the foregoing obligations and sets forth the methods for enforcing them. I expressly accept the provisions of that Executive Order as a part of this agreement and as binding on me. I understand that the obligations of this pledge are in addition to any statutory or other legal restrictions applicable to me by virtue of Government service.

Signature

7/19 .2017

Shanahan, Patrick M.

Print or type your full name (Last, First, Middle)

the state

Whistleblower Protection U.S. Department of Defense

Whistleblower Protection safeguards DoD employees against retaliation for protected disclosures that expose possible waste, fraud, and abuse in government programs. For more information, please visit the Whistleblower webpage at http://www.dodig.mil/Components/ Administrative-Investigations/Whistleblower-Reprisal-Investigations/ Whisteblower-Reprisal/ or contact the Whistleblower Protection Coordinator at Whistleblowerprotectioncoordinator@dodig.mil

For more information about DoD OIG reports or activities, please contact us:

Congressional Liaison 703.604.8324

Media Contact public.affairs@dodig.mil; 703.604.8324

> **DoD OIG Mailing Lists** www.dodig.mil/Mailing-Lists/

Twitter www.twitter.com/DoD_IG

DoD Hotline www.dodig.mil/hotline



DEPARTMENT OF DEFENSE | OFFICE OF INSPECTOR GENERAL

4800 Mark Center Drive Alexandria, Virginia 22350-1500 www.dodig.mil Defense Hotline 1.800.424.9098

