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DOMESTIC PRESSURES FOR THE MAINTENANCE OF US DEFENSE EXPENDITURE: THE CASE OF THE V-22 OSPREY[1]

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ABSTRACT

This article analyzes the importance of the domestic environment in US defense budget discussions, by analyzing the case of the V-22 Osprey. During George Bush's administration, the executive branch proposed freezing the program for four consecutive years. Congress, however, intervened to prevent the cut. Our argument is based on an analysis of the actions carried out by the three vertices of the so-called Iron Triangle (military, congressmen, and businessmen). Despite the program's inefficiency and costs – far in excess of initial estimates – these actors ensured the Osprey's survival, motivated by their specific (political or economic) interests. Our discussion aims to demonstrate that theoretical perspectives that associate US strategic decisions strictly to the international environment are lackluster. While paradigmatic, the case of the V-22 is hardly an isolated one. Each year, various weapon programs benefit from their domestic political strength in order to stay afloat. Thus, the article contributes to deepen the knowledge on how specific interests compromise strategic decisions in the US.

Keywords: V-22 Osprey. Defense budget. Iron triangle. Strategic decisions.

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INTRODUCTION

Since World War II, the United States has maintained an exceptionally high level of defense spending. Despite attempted cuts by presidents such as George H.W. Bush and Barack Obama, the country›s military budget has been sustained as one of the pillars of its international insertion. Even after the decline of the USSR, processes leading to budget reduction tend to be followed by reciprocal increases[3].

The variables that explain the tendency towards US defense budget maintenance are related to: 1) international phenomena, since they refer to the country›s strategic position in the international system; 2) domestic forces that seek to influence budget debates – often attempting to extract economic and political benefits from military spending. Nevertheless, the explanations offered by the vast majority of articles on the subject, authored by realists or liberals, focus solely on the first set of factors.

Lacking an analysis of the domestic environment, these views are only partially adequate. US arms spending cannot be understood without also looking at the domestic political forces that act to increase or maintain it. These forces became especially relevant during the George Bush administration (1989–1993), mainly because Soviet decline led to a reduction in external pressures[4].

In order to deepen this debate, this article discusses how and why Congress was able to avoid cuts in military spending throughout the Bush administration, despite the Executive›s attempts at reduction. The Executive›s demands had three motifs: it was necessary to minimize the country›s budgetary crisis; Ronald Reagan›s increased defense budget had already ensured the technological supremacy the country required; and, finally, the decline of the main adversary of the US had reduced international pressures for increased spending. The Executive›s decision can therefore be associated with what Graham Allison (ALLISON;

[3] Data from the Council of Foreign Relations, among many other published data sources, corroborate the notion that the US defense budget is defined more by historical trends and continuity policies than by major shifts or ruptures (WALKER, 2014).

[4] The theoretical debate behind this argument was approached by the author in a previous article, which examined the defense-budget discussions during the Ronald Reagan (1981–1989) and George Bush (1989–1993) administrations, concluding that both ‹were marked by very strong pressures for continued elevated military spending› (CORTINHAS, 2014, p. 77, our translation).

ZELIKOW, 1999) termed the rational actor model (Model I), since it was based on a cost-benefit analysis of the country›s situation.

At that time, however, domestic agents drove the decision-making process closer to Allison›s model III (governmental policy), as the diminishing external pressures brought about by the decline of the USSR opened the opportunity for Congress to move in accordance with domestic politicians› vested interests. This article›s theoretical basis lies in two conceptual adaptations that seek to complement the three models developed by Allison (CORTINHAS, 2014, p. 58-59). The first suggests that the models are part of a continuum, with Model III prevailing when international pressures on the US decrease, as in the specific case being studied here. The second argues that, in this scenario, decision-making processes will only be understood through comprehensive observations of the role of domestic agents who participate in them, observing their preferences and pressure strategies.

This is precisely the main objective of this article, and, to this end, we will make use of the theoretical tools developed by Graham Allison within the scope of Model III, while carrying out a careful analysis of the preferences and strategies of the so-called Iron Triangle of defense (formed by military, businessmen and congressmen).

The need to take a deeper look at political attrition led to the choice of the case study as a methodological tool. The study›s object will center around the debates on the V-22 Osprey program that took place during George H.W. Bush›s administration. Despite several requests of expenditure cuts by the Executive, Congress kept the program active throughout the years. This struggle for keeping the Osprey afloat was constant. While the aircraft had its first research contract awarded in 1986, it only became operational in 2005.

The case allows us to better understand dynamics that could be applied correlatively to other US defense budget decision-making processes. During the four years of his mandate, Bush asked Congress to cancel 9 weapon programs deemed inefficient by his administration. Despite several battles with lawmakers, none of the programs were canceled, demonstrating that Osprey›s story is by no means an exception, with similar stories taking place on an annual basis. It was, however, one of the most shocking cases of its kind, due to the program›s many issues and the humongous monetary values involved.

Our discussion begins by presenting the V-22 Osprey and, from there, goes on to analyze the Executive›s attempts to end it. The main problems of the aircraft will also be examined and, finally, we shall take a look at the tools used by various congressmen, the military and contractors› lobbies in order to keep it afloat, despite the Executive›s best intentions.

A BRIEF HISTORY OF THE PROGRAM

The V-22 Osprey was the result of joint project development by Texas-based and Pennsylvania-based Boeing-Vertol JVX. In the early 1980s, these companies designed a rotary-wing aircraft that would combine the vertical takeoff ability of a helicopter with the speed of an airplane, in order to transport military personnel or equipment to combat zones. From the outset, the project was monitored with great care by the US military, who considered it interesting given the purported characteristics of future combat.

Bell had been researching rotary-wing technology since the 1950s, and Reagan›s rise to power – which underpinned the increase of the defense budget as a component of Research and Development – was the opportunity the company›s directors were hoping for in their race to consolidate a project potentially worth billions of dollars in profit. After several other models were tested, the Osprey was deemed the most attractive proposition. Its development began in 1983. Bell then invited Boeing to join the research, increasing the project›s political and financial strength.

The first government contract for Osprey R&D was awarded on March 19, 1986, stipulating a target price of US$ 1.71 billion and a maximum price of US$ 1.81 billion for the production of six aircraft prototypes throughout the next seven years (WHITTLE, 2010, p. 149-151). At first, the contract appeared amenable to the US government, as it employed the fixed-price model, i.e., if the maximum costs of each aircraft were exceeded, the companies would have to cover the additional expenditure. Bell and Boeing accepted this condition because, their awareness of the risks notwithstanding, they envisioned the possibility of long-term gains[5].

[5] As we will see throughout this article, the companies› bet was correct. After the first contract was awarded, they quickly surpassed all initial deadlines and cost estimates, having to pay for a portion of the losses resulting from the aircraft›s manufacturing. Nevertheless, the government covered the additional expenses and subsequently awarded new contracts.

The Osprey›s design was approved in December 1986, when manufacturing of the six prototypes began. Until that moment, all the Armed Forces had an interest in the project. Before long, however, its costs began to rise and the involved parties realized that the contractors would not be able to fulfill the anticipated conditions. Thus, the Army – which, during the contract negotiation phase, had foreseen the acquisition of 231 Ospreys – withdrew from the project, severely hampering its development. Explaining the Force›s withdrawal, then Army Assistant Secretary for Research, Development and Acquisition, General Donald S. Pihl, pointed out two main motivations: the aircraft›s high costs, and its limited practical application on military missions (PIHL, 1989, p. 357).

Following the withdrawal of the Army, the Air Force and the Navy also partly lost their interest. The Marines thus became the sole guarantors of the program among the military. Nevertheless, Osprey›s first flight took place on March 19, 1989, and in September the first successful demonstration of the helicopter-to-plane transition was successfully carried out. These events made 1989 an important milestone for the development of the V-22. However, 1989 also saw its biggest political battles.

From the start of the research phase until 1989, the Osprey had been strongly supported by the Executive, the Armed Forces, and Congress. But the election of George H.W. Bush made its political survival much more difficult. Conjuring great efforts towards rebuilding the US economy, Bush sought to drastically lower the defense budget, which Reagan had greatly expanded. Cuts were concentrated on the Research and Development budgetary account, and ending the V-22 Osprey became one of Bush›s top budgetary priorities, since it was considered expensive and inefficient.

The Osprey›s main political enemy at the time became Richard (Dick) Cheney, then Secretary of Defense. Despite Cheney›s protracted efforts during four years in office, the Osprey never lost support from Congress or from the Marines. It became operational in 2005, no less than 19 years after the first production contract had been awarded.

We now describe the main controversies surrounding the program, as well as the actors who participated in the budgetary discussions around it.

THE POLITICAL BATTLE FOR THE OSPREY DURING ITS RESEARCH AND DEVELOPMENT PHASE

As Secretary of Defense, one of Cheney›s main missions was to lower the defense budget without compromising US security. The Osprey was among the top nine programs the administration decided to close in order to save resources, since its understanding was that the aircraft would not provide major advances in comparison to ordinary helicopters.

After deciding in favor of ending the program, Cheney explained his stance at a hearing on spending cuts before the House Armed Services Committee on April 25, 1989. According to Whittle (2010, p. 177), Cheney›s explanations were compelling. The Secretary argued that ordinary helicopters could replace the Osprey in all major missions, and that a budget proposal that required a cut of US$ 10 billion to the previous year›s allowances left no room to fund such a program.

It is clear that Cheney›s argument was based on a rational cost-benefit logic. Faced with the overthrow of the period›s main external threat, accompanied by a deep budgetary crisis, the focus had shifted to redefining the country›s priorities and matching the new budget to the available fiscal resources. In his auto-biography, the Secretary himself confirmed his concerns at the time of the decision: "The tilt-rotor technology was difficult to develop and the cost was at least double that of a conventional helicopter. By the time I arrived at the Pentagon, the project was significantly behind" (CHENEY, 2011, p. 166).

Some members of the Navy, who used to be the project›s main client, came to agree with the Defense Department›s view. During a hearing before the House of Representatives› Armed Services Committee on May 11, 1989, Everett Pyatt, Navy assistant secretary for Shipbuilding and Logistics, justified the withdrawal of the Force from the V-22: the program was substantially behind schedule, had unresolved issues, and alternative platforms were available that could perform the same missions, with the same efficiency, at a lower cost (PYATT, 1989, p. 200-201).

Despite attempts by the Executive to rationalize spending and the withdrawal of the country›s main Armed Forces, lawmakers prevented Cheney from ending the program, denying the government a US$ 8.5 billion economy from 1989 to 1994 (GORDON, 1989a). Despite Cheney›s efforts, the congressional decision sparked a major political battle between governmental branches, marked by a clear prevalence of the Legislative.

From 1989 to 1992, the Secretary attempted to transfer, postpone or terminate his appropriations in all budgetary processes.

The table below analyzes the Executive›s cancellation requests as well as Congress-approved values for the Osprey, achieved by granting investments in the Research and Development budgetary account:

TABELA 1 – REQUERIMENTOS DA ADMINISTRAÇÃO BUSH PARA O OSPREY E VALORES APROVADOS PELO CONGRESSO:

	Requerimento da Administração	Valor Final aprovado (US$)
1989	0,00	255.000.000,00
1990	0,00	403.000.000,00
1991	0,00	625.000.000,00
1992	0,00	755.000.000,00

Fonte: *CONGRESSIONAL QUARTERLY ALMANAC* (1990, p. 765; 1991, p. 815; 1992, p. 624; 1993, p. 594).

Cancellation requests by the Administration were made annually and, in each budget debate, Congress decided to continue investing in the equipment, ignoring arguments that the Osprey was unnecessary and too expensive. In the four years of that administration alone, Congress authorized US$ 2.04 billion in armaments. These resources might have played a major role in providing budgetary balance, or even investments in more efficient programs.

According to Cheney, Congress members argued that the aircraft would be essential for landing under fire on enemy-held beaches, as it could move faster than conventional helicopters (CHENEY, 2011, p. 166). Moreover, despite the Navy›s withdrawal, some of its officers continued to argue that the aircraft would also make an important contribution to rescue operations (FACKRELL, 1990, p. ii).

While the Legislature›s decision to maintain the program came in the first year of the administration[6], the Secretary of Defense refused to spend the approved resources. Cheney believed that the fixed-price nature of the contract meant that companies would give up the equipment if he froze spending for a few years. "Cheney›s strategy was to starve the Osprey to death" (WHITTLE, 2010, p. 204).

Cheney›s refusals heightened the rivalry between the Department of Defense (DoD) and Congress, despite the good relationships the Secretary had built during his years in the House. Castro, Cray and Voorst

[6] The program›s maintenance was approved by 261 votes to 162 in the 1989 budgetary discussions.

(1989) portray how decisions concerning the Osprey program affected the relationship between the Powers:

> The DoD spent some of the money Congress appropriated to develop the aircraft, but Congressional sources accused Cheney, who continued to oppose the Osprey, of breaking the law by not moving in the direction decided by the Legislature. Cheney argued that building and testing the Osprey prototype would cost more than the appropriated values. In the spring of 1992, several Congressmen who supported the V-22 threatened to take Cheney to court over the issue.

The conflict assumed the logic of an undeclared conflict between the Executive and the Legislative: the Administration demanded cancellation, the Legislative refused to comply, and the Executive, as retaliation, refused to spend the approved resources.

In the administration›s second budget process, the differences continued and Cheney raised his tone. Attending a hearing on the Armed Services Committee of the House of Representatives on February 6, 1990, the Secretary›s position on the program was emphatic:

> Finally on the V-22 last year ... I made clear my recommendation to Congress that I thought it was one of those big ticket items that from an affordability standpoint had to be canceled ... What I agreed to with the Congress last year as part of the conference agreement was that we would support fully finishing out the R&D. R&D money would be supported but not procurement funds. ... My recommendation to Congress again this year is [for us not to] proceed with the V-22 (CHENEY, 1991, p. 125).

In 1990, when Cheney gave this statement to Congress, the Marines were dissatisfied with program cutbacks. After all, their initial estimates predicted that this would be the year they would be using the Osprey in actual missions. However, unlike the contractors› claims, budget cuts were hardly the program›s only obstacles. There were a number of mechanical and aerodynamic problems that the companies seemed unable to solve, as discussed below.

In the year of his attempted reelection (1992), Bush continued to propose the termination of the program, despite the fact that it provided a

considerable amount of jobs. As it turns out, electoral concerns were in the background, at least for the beginning of that year.

The new budget cut attempt increased the rivalries between the Executive and Congress. That year, the prevalence of members of the Legislative in budget debates was even more significant than in previous years, stemming from Bush›s low popularity, which made his reelection unlikely. Raising the tone, Cheney sent a letter to the Legislative on April 2, 1992, reiterating that he would not spend the resources that Congress had approved for the Osprey program. Members of the legislative expressed great dissatisfaction with the letter.

Even those who did not fully support the program were outraged by the intervention. Jones (2004, pp. 54-55) demonstrates the seriousness of the dispute, describing the exchange of accusations between the Powers. While Congress accused Bush and Cheney of illegally withholding the appropriated amounts, members of the Executive suggested that they were not making the purchases because the amounts approved by the Legislative were insufficient to order the anticipated number of aircraft units, given the equipment›s inefficiencies.

Clearly, the contrast between the two positions had become more pronounced over the years. The Executive›s behavior, according to Congress, contradicted the 1974 Budget Law, which governed the budget process. The legislation prevented funds from being retained by the Executive after approval by Congress and restricted the postponement of spending[7].

As the political battle waged, the program continued to advance, despite serious flaws. As early as 1992, the Osprey advanced from the development testing phase to the operational testing phase, yet continued to have profound problems. The details and difficulties arising from each of the tests are detailed by Whittle (2010, p. 212-239).

Operational testing began with V-22 prototype number 4, which had already undergone several development tests. The equipment was taken to Eglin Air Base in Florida, where it went through a severe battery of tests. Following this period, during which some of its flaws were exposed, prototype 4›s major test was scheduled for July 12, 1992. On that date, the V-22 would make one of its first major flights, leaving the Eglin (FL) air

[7] Title X of the 1974 Budget Law gave the President the right to postpone spending or propose a cancellation, but clearly states that postponements cannot be used to alter political decisions, i.e., if the President intends to amend a spending policy, he must propose a cancellation. Both postponement and cancellation must be approved by Congress (COMMITTEE ON THE BUDGET, UNITED STATES SENATE, 1998, p. 22-23).

base to land on Quantico (VI). Despite expectations, the test was one of the program›s biggest failures. As it began landing, mechanical problems drove the Osprey into the Potomac River, impressing a host of guests (military, congressmen and press, among others) who were observing the mission.

A few weeks later, investigators concluded that the accident was due to an oil leak caused by a bad seal, likely linked to the mechanics› rush to finalize preparations so the Osprey could reach Quantico on schedule. As the project was under considerable political pressure, rush in the manufacturing and routine maintenance of the prototypes compromised their operation.

The accident resulted in the deaths of 7 people on board, including Marines, mechanics and engineers. In addition to these fatalities, something else began to concern the administration. The Osprey had been unable to demonstrate a skill promised by contractors and regarded as essential to mission safety: flying with a single engine (WHITTLE, 2010, p. 235).

The controversy surrounding the program reached such heights that the Osprey became a theme of the 1992 presidential campaign. At the start of the debate, Democrats Bill Clinton and Al Gore voiced support for its development, while George H.W. Bush and Dan Quayle, Republican candidates, expressed their opposition. However, the Republican position changed in October, due to mounting electoral pressures in the districts where the Osprey was being manufactured. Just one month before the election, at a major election event, Quayle announced that a new contract had been awarded to the V-22 development team, providing Bell and Boeing with another US$ 550 million (BOLKCOM, 2002, p. 10).

The day after the announcement, Quayle and Representative Curt Weldon (a Republican from Philadelphia, where the Osprey is produced) visited Boeing›s Ridley Park plant. Weldon, one of the main congressmen behind the effort to maintain the Osprey (WHITTLE, 2010, p. 186), gave a speech in which he celebrated the program›s survival. His link to an administration that fought the program notwithstanding, Quayle also spoke in favor of the V-22.

Clinton›s election ensured the continuity of the project. The Democrat president saw Osprey as important for the development of a new technological avenue, which could be advantageous in the future. After four years of political clashes with the Executive, the legislative supporters of the program had successfully ensured the Osprey›s survival.

The intense political battles over the Osprey reflected the political and electoral importance of the program, as inefficient as it was. The first part of this article described the main clashes between Executive and Congress. The second will examine the aircraft›s major operational defects, which, although serious, did not compromise its survival.

MAIN PROBLEMS OF THE V-22 OSPREY

Three orders of issues affected the program during its development phase: mechanical, aerodynamic and financial.

MECHANICAL PROBLEMS

As we discussed previously, the biggest crash the Osprey suffered during the development phase was caused by an oil leak, besides a mechanical failure in the single-engine flight system. The aircraft has two independent motors that move the rotors located at the wings› terminations. Bell and Boeing claimed that even if one engine failed, the two rotors would still run. This would be made possible by a complex system termed the Interconnect Drive System (ICDS). According to the manufacturers, the failure of one of the engines would automatically start the device. They repeated this claim every time they were questioned about this purported capability.

However, the system failed to work during its first true test, as its components were unable to withstand high temperatures. Because the Osprey›s wing is so large, the only way to make both rotors move with one engine is to connect the entire system by a series of cables running through the wings. All wiring must be protected by equipment that does not add excess weight to the Osprey, such as carbon fiber parts. The problem is that these parts melt at high temperatures. As the oil leak caused the rotors to catch fire, the system failed. Despite the seriousness of the crash, congressmen maintained their refusal to terminate the program. In October 1992, they allowed another contract to be awarded to Bell and Boeing, so the companies could produce another four Osprey prototypes.

Although more serious, the July 1992 accident was not the aircraft›s first occurrence. Among the six prototypes produced under the first V-22 contract, two crashed and were destroyed. Another prototype had already been lost on June 11, 1991, due to an accident caused by wiring problems.

From the outset, the contractors justified the accidents as a result of the political pressure on the Osprey program. However, even after pressure on the program eased with the end of the Bush administration, accidents and technical problems continued to occur.

During the Clinton administration, when the V-22 was no longer the focus of political debate, aircraft testing became infrequent and lacked the rigor usually required of combat equipment. This situation allowed the Osprey to pass several years without accidents. The third crash occurred only on April 8, 2000 and was related to aerodynamic problems, which will be described below. On December 18, 2000, at the close of a disastrous year for the Osprey, another accident related to mechanical problems took place. Aircraft number 18 suffered a double hydraulic failure. The first failure caused all panel lights to turn on, forcing the pilot to restart the system in order to verify if components were still in working order. The software that controlled the system also failed, leading the aircraft to a collision that killed four Marines.

Thus, three of the four aircraft crashes were caused by mechanical failures, and one by aerodynamic problems. Due to the characteristics of these problems, some mechanical defects could only be corrected over time, which led to a large increase in the initially anticipated costs. Nonetheless, many issues remained, and the Osprey›s mechanical limitations were recognized by the Government Accountability Office (GAO[8]), responsible for verifying how the country›s resources are used and how successful its programs are. In a report on the V-22 he prepared for Congress in order to analyze the aircraft s performance in Iraq, O›Rourke (2009, p. 8) quotes an excerpt from the March 2009 GAO document:

> These aircraft fell short of their mission capability goal (the ability to accomplish any one mission), due in part to component reliability problems with parts such as gearboxes and generators. The aircraft fell well short of its full-mission capability goal (the ability to accomplish all missions), primarily due to a complex and unreliable de-icing system. During the Iraq deployment, the V-22›s less than 400 hour engine service life fell short of the 500-600 hours estimated by program management. The program office noted that the contract does not require a specific service life to be met.

[8] *Government Accountability Office* – the US government agency responsible for verifying that the resources spent by the country are well used, as well as its programs› degree of success.

To a large extent, the Osprey›s mechanical problems were related to the fact that Boeing and Bell-Textron made extensive use of subcontracting to strengthen the project›s position in Congress, especially during its most vulnerable political moment. Although it may have contributed to resource economy, this practice increased compatibility difficulties between the aircraft›s components, produced using different technologies and systems. Thus, there were incompatibilities between the Osprey›s software, weaponry, hydraulics and mechanical systems.

Since mechanical problems are inherent in the research and development phase of any complex technology, this paper will focus on analyzing the Osprey›s structural problems, which are mainly of two types: aerodynamic and financial.

AERODYNAMIC PROBLEMS

The Osprey›s main aerodynamic problem concerns the aircraft›s predisposition to enter the so-called vortex ring state. Although the problem was well known, it caused the biggest V-22-related disaster, leading to the death of 19 Marines. The crash occurred in a nighttime flight test simulating an embassy rescue. The pilot of the aircraft had to descend at a high rate in order to land. This caused the vortex state, one of the main issues of the V-22 (GAILLARD, 2006). Vortex is a flight condition that can occur during helicopter landings when the maneuver is performed vertically or at high speed. In these cases, airflow through the root of the helicopter›s rotor moves in opposite direction to airflow from the blades, causing the aircraft to descend like a free-falling body. Pilots maneuvering ordinary helicopters can easily get out of this situation by increasing the aircraft speed or rotor rotation (LOPES; LUCINDO, 2010, p. 11). This maneuver, however, cannot be performed by the V-22 due to the unique positioning of its center of gravity, as well the inherent aerodynamic problems of its blades: they are very stiff and have a high degree of torsion (47 degrees). These characteristics are necessary for horizontal flight at high speed – the aircraft›s great differential – but prevent the Osprey from escaping the vortex state (GAILLARD, 2006, p. 15).

This aerodynamic condition becomes even more severe in fire exchange situations, since the aircraft cannot perform quick maneuvers. As this is a structural design problem, there is simply no solution. Only in 2005, when the aircraft became fully operational, operations in

Afghanistan and Iraq were able to demonstrate its weaknesses. In both countries, the V-22 has not been subjected to missions that pose potential combat risks, as its inability to land at high speed makes it an easy target.

This performance certainly fell short of initial expectations regarding the aircraft. When its development began, the Marines argued that the V-22 Osprey would represent a significant advance in two types of mission. First, it would bring speed to amphibious operations, transporting large numbers of troops from ships to enemy-held beaches faster than conventional helicopters (Cheney, 2011, p. 166). In addition, the Marines felt that the rescue of soldiers or prisoners in conflict zones would also be optimized (FACKRELL, 1990). The Osprey, however, was never able to perform such missions.

In addition to its greater likelihood of entering the vortex ring state, another major aerodynamic problem with the V-22 Osprey is its inability to make a critical helicopter maneuver: self-rotation. This is the maneuver that helicopters perform when they are critically damaged and need to land immediately. When a helicopter›s rotor is damaged, pilots can use the airflow that passes through it during descent to ensure a measure of control, allowing the helicopter to perform a movement similar to gliding, landing safely. This maneuver was very important to the US military during the Vietnam War, but it could not be performed by the Osprey because of its aerodynamic restrictions. When, even after long years of research, it became clear that it would be impossible for the Osprey to execute this maneuver, the Marines ceased to mention it as a requirement in their contracts (THOMPSON, 2007), suggesting that the needs of the Force had become less important than their desire to own new equipment.

Another aerodynamic problem of the Osprey is related to its center of gravity. Due to its need to transition from airplane to helicopter, the V-22 has a very different balance as compared to conventional helicopters. The biggest negative effect of this difference is that the Osprey cannot have a front-facing machine gun installed. This limits its ability to enter combat zones, as it cannot react when attacked from the front (THOMPSON, 2007).

As noted, the Osprey›s aerodynamic problems severely limit its operational capability, preventing it from engaging in combat zones. These features also severely limit the aircraft›s operational advantages. To make matters worse, these are problems that cannot be corrected, as they are inherent to the V-22 design characteristics.

FINANCIAL PROBLEMS

In addition to mechanical and aerodynamic problems, the V-22›s cost may hinder its large-scale industrial production. In 1986, the estimated price of each V-22 was US$ 24 million. But unit costs rose to US$ 35 million in 1989, when Bush and Cheney fought to close the program, and reached an impressive US$ 122 million in 2010, when the aircraft were already operational9. As noted, the excessive cost of the aircraft already stood out in the late 1980s. This was Cheney›s main argument in favor of ending the program (CHENEY, 2011, p. 166).

Moreover, contrary to what one might expect, the price actually increased when larger-scale production began. This was related to the aircraft's high maintenance costs (GORDON, 1989a; GORDON, 1989b; ROSENTHAL, 1989a).

All of these increases, topped by the high number of maintenance procedures required by the V-22, made the total program costs completely disconnected from the original estimates. By 2007, according to Thompson (2007), "the Pentagon [had] put $20 billion into the Osprey and [expected] to spend an additional $35 billion before the program [was] finished. In exchange, the Marines, Navy and Air Force [would get] 458 aircraft, averaging $119 million per copy," almost sixfold the initially anticipated cost. Whittle mentions similar figures, noting that the total spending from 1983 to 2010 saw a US$ 13 billion increase over the 1982 estimate, corresponding to an acquisition of only 1/3 of the anticipated units (WHITTLE, 2010, p. 391).

Taken together, Osprey›s three sets of problems make it an extremely inefficient program. Since the early 1980s, the aircraft has experienced numerous mechanical failures and irreparable aerodynamic problems that prevent it from operating in conflict zones. In addition, the estimated costs were, from the outset, disconnected from reality.

How can the maintenance of investments in a highly costly aircraft, which fails to meet the conditions for the most relevant operations of the US Armed Forces, be explained?

Based on the Iron Triangle concept, the next sections aims to provide a possible answer to this question, carrying out an analysis of the forces involved in the formulation of the US defense budget.

[9] *Government Accountability Office* – the US government agency responsible for verifying that the resources spent by the country are well used, as well as its programs› degree of success.

REASONS FOR THE SURVIVAL OF THE V-22 PROGRAM

As president, Bush made a deal with Congress to cut the defense budget by US$ 10 billion. However, when the Executive began to point out which areas the cuts would affect, the congressmen realized that this reduction could cause many jobs to be lost in politically relevant constituencies. In order to achieve a definitive and long-term reduction, the Executive›s strategy was to focus its cuts on weapons programs, decreasing R&D expenditures.

Electoral concerns led several congressmen to ignore the previous agreement and backtrack on the budget cut. In the specific case of the V-22, this position was encouraged by the Marines and by the aircraft manufacturers. The explanation for the survival of the program is related to the Iron Triangle concept of US defense policy. The Triangle is comprised of the joint action of congress members, defense industry and the military in order to achieve military and political objectives. Smith (1996, p. 173) defines the concept as a «symbiotic partnership between the military services, defence contractors and members of Congress from states and districts where military spending is heavy and visible.» Based on the analysis of the performance of the Triangle›s three "vertices," we will now attempt to understand how this partnership was instrumental in preventing the program from closing during the Bush Administration budget debates. The next section will examine the action by the first two vertices of the Triangle: congressmen and the military. Next, we will examine the actions of lobbyists hired by the Osprey manufacturers.

THE IRON TRIANGLE: HOW CONGRESS AND MARINES DEFENDED THE OSPREY IN BUDGETARY DISCUSSIONS

When the Executive announced that it would shut down the V-22, lawmakers who supported the technology started actively working to maintain it. Their most important effort was the creation of the Tilt-rotor Technology Coalition in Congress, a group formed by members of the legislature, contractors, subcontractors and retired Marines. The coalition was the main forum for permanent discussion about the Osprey, and also functioned as the institution that planned all equipment support initiatives in the Legislature. It had representatives from every state where the V-22 was produced, and was used by members of Congress who were

part of the initiative to pressure other legislators. After the formation of the coalition, the exchange of favors between the Deputies became commonplace (MILNER, 1997, p. 111-112).

The more Cheney›s pressure on the Osprey increased, the more the coalition put pressure on the DoD – this happened even when the Secretary refused to put any expenditures that had been appropriated by the legislature into effect. One of the group›s initiatives, for example, was to send letters to Bush. These were signed by several congressmen, and highlighted the importance of the aircraft (JONES, 2004, p. 56).

In addition to congressmen, the military played a very active role in discussions about the Osprey. Marines participated in all the tests and put pressure on Cheney and Congress to approve the program. Although they did not have many exclusive weapons programs, during the Bush administration three factors gave the Marines privileged conditions to fight for the Osprey: a) the great political experience they had gained in previous governments; b) the fact that Carter and Reagan had not made any specific investments or relevant upgrades in the Marines› equipment, putting stock in the argument that they needed a major technological renovation (CORDESMAN, 1991, p. 58); (c) special links between the Marines and congressmen that enhanced their access to lawmakers[10]. Benefited from this favorable environment, the Marines, who were 'good at getting what they wanted in Congress' (WHITTLE, 2010, p. 177), worked hard for the Osprey program.

They used congressional hearings about the equipment as political opportunities. According to the views expressed by the military on these occasions, any other equipment able to perform similar missions would necessarily have technical disadvantages. Later on, when the equipment was already in production, the Marines began to be questioned about its inefficiency in combat due to aerodynamic disabilities, lack of front-facing weaponry and high maintenance costs. In their replies, the military stated that the V-22 was not acquired to carry out such missions, contradicting their earlier statements.

Their unconditional support, even in the face of the Osprey›s inefficiencies, became even clearer when it was revealed that the Marines had falsified test result reports. The gravity of this event was maximized by the fact that these reports had been essential to convince undecided congressmen. Thus, the maintenance of investments in the aircraft had

[10] In 1989, there were 24 Marine veterans in Congress.

hardly been based on exempt, strictly technical analyzes (GAILLARD, 2006; CASTRO; CRAY; VOORST, 1989; THOMPSON, 2007[11]).

The adulteration of results had been ongoing since the beginning of the test procedures. When the first takeoff test from a boat was conducted in December 1990, the V-22 pilots described a number of operational difficulties. Nevertheless, the Marines contributed to a major news report on the program the following month, published in *Aviation Week*. The article stated that the tests had been favorable, encouraging the legislators who had been backing the project (WHITTLE, 2010, p. 195-196).

In addition to forging test results, the military also reduced the required minimum efficiency standard of the equipment and downplayed the project›s shortcomings (GAILLARD, 2006). Although the V-22 was initially expected to carry out rescue and landing missions in conflict areas, these parameters were now being relaxed, as was the requirement for the aircraft›s auto-rotation functionality. The reduction of demands over the years eroded the ability of the V-22 to carry out military missions (WHITTLE, 2010, p. 334-336).

When there was no way to continue omitting the serious flaws of the project, supporters› political action became even more relevant. On June 11, 1991, after the first accident, Curt Weldon started speaking publicly on the matter and making visits to the offices of other Representatives, stating that testing is normally prone to problems and that he preferred accidents to occur at this stage than with Marines on board (WHITTLE, 2010, p. 199). The campaign was so efficient that the crash had no negative political effects on the V-22 program.

The Marines› action at the beginning of the debates on the equipment were instrumental in maintaining the Osprey (O›ROURKE, 2009, p. 6), convincing legislators and encouraging contractors. Nevertheless, over time the military›s campaign became less vocal. Cheney›s insistence on terminating investments led them to understand that clear demonstrations of support could incite a break in military hierarchy (JONES, 2004).

[11] In the works cited in this paragraph, there are several reports of Osprey test result falsifications. In addition to this practice during the R&D phase, the Marines also manipulated aircraft maintenance records during operational tests. One of the most prominent cases of these counterfeits was Lieutenant Colonel Leberman›s alteration of maintenance records following the collision that killed 4 Marines in the year 2000 (GAILLARD, 2006, p. 20).

They were dealing with a low-efficiency aircraft that could not perform the types of missions it was designed for. Even so, the congressmen from the districts where the V-22 was produced and the military acted so masterfully that the Osprey was approved for operations in 2005:

> The saga of the V-22 – the battles over its future on Capitol Hill, a performance record that is spotty at best, a long, determined quest by the Marines to get what they wanted – demonstrates how Washington works (or, rather, doesn›t). It exposes the compromises that are made when narrow interests collide with common sense. It is a tale that shows how the system fails at its most significant task, by placing in jeopardy those we count on to protect us. For even at a stratospheric price, the V-22 is going into combat shorthanded (THOMPSON, 2007).

From this point on, we analyze the third and most active vertex: contractors› articulators and lobbyists.

THE IRON TRIANGLE: HOW THE V-22 CONTRACTORS› LOBBY ACTED TO KEEP THE PROGRAM AFLOAT

During the Bush administration›s budget debates, the contracting industry organized a lobbying effort capable of aggregating pressure from congressmen and the military. This intensive pressure from the industries, bearing especially on undecided legislators, was an important component behind the contrasting positions regarding the Osprey assumed by the Executive on one side and the Legislative on the other.

The reasons for the significant concern of congressmen who had specific interests in the program are many, but the nature of political representation in the US seems to be the most important one. Congressmen represent specific constituencies, allowing them to clearly identify the interests they need to protect in order to ensure continued voter support (MILNER, 1997; WRIGHT, 2003; COX; STOKES, 2008; LOWERY; BRASHER, 2004). Thus, by acting as liaisons between the legislature and these specific interests, lobbyists pressure congressmen to fulfill their demands, arguing that favorable positions will have a positive impact on the ballot box. In order to achieve their objectives, contractors employed four fundamental strategies.

First, Bell and Boeing hired a number of professional lobbyists, such as Richard Spivey and George Troutman, to sell the Osprey to both Administration and Congress. From the outset, their struggle to maintain the V-22 was based on two main arguments: first, they claimed that in the future the aircraft could also be used for civilian purposes; second, they insisted that the program would generate 10,000 jobs in the Fort Worth – TX region, and many more in other US cities. Meetings with congressmen to convince them of their arguments were held constantly.

In addition to dialogues in Congress members› offices, lobbyists also organized various promotional events. The first of these occurred on May 23, 1988, when the Bell factory in Fort Worth welcomed over 2000 visitors. The companies believed that inviting politicians and military personnel to an official unveiling of the V-22 would increase congressional support. Participants included businessmen, congressmen, reporters, and more than fifty generals and admirals.

The history of this event›s preparation is revealing. On December 3, 1987, a press release from Bell and Boeing announced the event, indicating that the Osprey›s fuselage was ready and that the aircraft›s first flight would be in June 1988. The reality, however, was very different. Because the prototype was far from ready, Bell and Boeing hired Hollywood producers to give the aircraft a ‹makeup› treatment (WHITTLE, 2010, p. 163-164). The Osprey was painted using water paint, making it look like it was ready for combat. Artificial smoke and a series of lights and mirrors gave the impression that it could take flight at a moment›s notice. The companies glued parts of the prototype with epoxy and wedged the frame so that it would not fall during the exposé. The cabin, which was visited by the guests, had pieces attached with tape. The prototype›s design was yet to be finalized, due to engineering failures and mechanical and electrical systems that had not been installed (WHITTLE, 2010, p. 161). Event attendees were convinced that the Osprey›s development was much more advanced than it actually was.

Direct lobbying and media events were important strategies, but the most effective practice for increasing Osprey›s political power was subcontracting, that is, the process of distributing contracts to manufacture individual equipment parts.

Subcontracting can be economically useful, as it makes it possible to minimize the production costs of any complex equipment. Over the years, however, US defense industries have come to use it as a political

instrument. They realized that a large subcontracting process increases the number of congressmen potentially associated with a project.

An aircraft like the Osprey requires a series of instruments and parts that Bell and Boeing do not manufacture. Radars, avionics, motors and rotors, cables and dials, for example, are more effectively produced by other companies. However, instead of distributing the contracts to partners who were geographically close to the main companies and could manufacture these components at a low cost, subcontractors were selected based on political criteria. The more spread out across the US territory these subcontractors were, the more congressmen could be influenced by them.

The subcontracting strategy had started being implemented during Reagan›s administration: even before receiving the government contract, Bell and Boeing organized a conference with potential subcontractors to learn about rotary-wing technology and to put pressure on legislators in their districts towards approval of the V-22 (WHITTLE, 2010, p. 145). Since the first contract award, subcontracting became an essential practice for the Osprey›s survivability. After joining the project, subcontractors were encouraged by Bell and Boeing to maintain constant contact with legislators in their home districts (JONES, 2004, p. 63), emphasizing the number of jobs that were dependent on the project.

The subcontracting process gained momentum during Bush›s administration, especially after political pressure on the program increased. At that time, the Osprey had suppliers in 45 of the 50 US states (GAILLARD, 2006, p. 20). Virtually all Representatives and Senators came from states where the Osprey was generating jobs. As Jones (2004, p. 56) points out, during Clinton›s administration subcontracting continued to be widely employed. The strategy grew to encompass 1800 to 2000 subcontractors, with more than US$ 353 million in contracts distributed across 258 electoral districts, from a total of 435. The political strength of the program and its lobbyists was enhanced by this broad support.

In addition to these strategies, the companies› approach to lobbying amongst decision makers also involved a fourth component: the use of large electoral contributions during the equipment development phase. These contributions reached impressive numbers in the midterm elections of 1990, when Cheney›s pressure on the Osprey increased.

That year, total electoral contributions by defense aviation companies amounted to US$ 4,507,836, with 48 percent of the total going to Democratic candidates and 52 percent to Republicans. Such wide

distribution among the parties meant that 367 members elected to the Chamber were to receive contributions from companies in the sector. This was equivalent to 84% of the Representatives. In the Senate, 86 out of 100 elected representatives received industry contributions. Among the top 10 contributors, 6 had contracts for Osprey components: Lockheed Company, Northrop Corporation, Textron Inc, General Dynamic, Rockwell, and Grumman[12].

All of the lobbying initiatives described above ensured that legislators› support for the project was maximized. This was evidenced by several critical moments in the aircraft›s political survival. The support achieved by companies in the Legislative branch, however, was not mirrored in the Executive. When Cheney announced his decision to request the Osprey›s cancellation, the aircraft›s main lobbyist, Richard Spivey, was outraged by attempts to end «the next revolution in flight» (WHITTLE, 2010, p. 171). Spivey realized that keeping the program alive would require extraordinary efforts.

That is why lobbying efforts remained constant and aggressive throughout the Bush administration. As a result of these pressures, "the House of Representatives seemed driven more by political tactics and parochial interests than by a competing vision of national security" (ROSENTHAL, 1989b).

In addition to the abovementioned pressure strategies, several others played an important role. These included the creation of a guest pilot program, the organization of trips to the factories where the V-22 was produced, grassroots lobbying (marching and paid media pieces), the production of policy papers on the aircraft[13], among others. Jones (2004, p. 298) describes some of these efforts and their results.

This enormous range of political pressures and practices over the past 30 years has ensured the Osprey›s survival. The aircraft only

[12] These data were obtained obtained from the Open Secrets Foundation website: Center for Responsive Politics, the premier electoral contribution information center in the US. Available at: <https://www.opensecrets.org/industries/summary.php?ind=D01&recipdetail=A&sortorder=U&mem=Y&cycle=1990>. Access on: Jan. 16, 2019.

[13] These policy papers – which are published to inform congressmen, the military, and public opinion – began circulating monthly under the title «Osprey Fax,» in 1990. They were authored by Bell and Boeing. After a few years, the name was changed to «Tiltrotor Times» and, in 1999, to «Osprey Facts,» with an average of 4 editions per year. The number of publications decreased after the V-22 became operational. Part of these publications are available at <http://www.iasa.com.au/folders/Publications/pdf_library/ospreypdfs/ospreyed1.htm>. Access on: Jan 17. 2019.

became operational in 2005, although its research phase began in 1983, even before the first contract was awarded. Today, the aircraft is being used in US military campaigns across multiple scenarios, despite having very little utility beyond the transportation of passengers and equipment in pacified areas. Due to its poor ability to operate in combat zones and its high maintenance costs, the Osprey continues to be an excessive expense in respect to the sparse operational benefit it provides.

CONCLUSION

This article focused on examining budget debates about the V-22 Osprey during George H.W. Bush›s administration, focusing on the role of the agents who participated in these decision-making processes. This text is directly related to an in-depth theoretical discussion of the mechanisms behind United States foreign policy decisions, specifically in regards to defense spending. The different stances of the Executive and the Legislative, besides the prevalence of congressmen in the decision-making process, clearly demonstrate how criteria of bureaucratic politics (ALLISON; ZELIKOW, 1999; CRABB; HOLT, 1989; GOLDSTEIN, 1999) can become more important than rational cost-benefit analyses.

Bush and Cheney realized that the Osprey program should be terminated, as the aircraft costs were sure to far outweigh its benefits. The main allegations by the President and the Secretary of Defense to cancel the program were as follows:

- From the outset, the project was unable to meet any deadlines and cost requirements whatsoever;
- In addition to the natural difficulties inherent in creating innovative technology, the project failed several tests, many of which led to fatalities;
- The aircraft could not be used in combat situations due to aerodynamic difficulties, which prevented it from landing quickly, packing front-facing armaments, and self-rotating after being hit;
- There were several pieces of readily-available equipment that could replace the V-22. Their traditional design notwithstanding, helicopters such as the CH-64 – which had been successful in combat missions for decades – would have been a much more advantageous alternative.

Despite all these arguments, and the effort made by the Executive to cancel all investments, the program was not terminated, mainly due to the intimate relations between military, legislators and contractors. These actors worked tirelessly to impede the approval of the cuts proposed by Cheney, who, from the start of his term at the DoD, understood how difficult it would be to terminate the program (CHENEY, 2011, p. 116).

O›Hanlon (2010, p. 20) is one of the authors who continue to point out the V-22›s many flaws, having advocated for the program›s cancellation for decades. According to him, the most appropriate response from the US government would be to continue investing in the maintenance of aircraft that are already operational, while freezing the purchase of new equipment and canceling research and development. Still in 2010, the author estimated that canceling the Osprey program would save the US defense budget more than US$ 1 billion a year.

Despite all of the aircraft›s shortcomings, businessmen, the military, and congressmen – all with different motivations – fought fiercely for its preservation. In this sense, the actions of the Marines, the members of the Tilt-rotor Technology Coalition and the Osprey contractors and subcontractors played a decisive role, making the V-22 a very interesting illustration of how political forces with specific interests can come together to prevail over the Executive in budget discussions.

By examining this particular example, our article sought to deepen the analysis of how the Iron Triangle fought for the V-22›s survival. Our belief, however, is that this specific analysis is only one of the article›s contributions. Perhaps even more important are our remarks about how companies, legislators, and the military operate during US defense budget debates. The Iron Triangle exerts sufficient force to dominate budget debates, especially when striving to maintain a program whose continued existence is utterly irrational.

While paradigmatic, the case of the V-22 is hardly an isolated one. In George H.W. Bush›s administration alone, the President asked Congress to cancel 9 weapons programs that he deemed ineffective. Despite several battles with legislators, none of the programs were canceled, demonstrating that Osprey›s story is only one among several other stories taking place on an annual basis. Thus, we can confidently say that the political behaviors described in this article are a regular occurrence in the United States.

The case of the V-22, in this sense, helps to understand the domestic factors that lead the United States to maintain a large military

spending, despite changes in the international conjuncture over the last decades. In all defense budget decisions, pressures emerge from agents struggling to maintain inefficient programs. The sum of these domestic forces is a variable that cannot be disregarded in analyzes that deal with the US military spending pattern and, consequently, the country›s international positions.

AS PRESSÕES DOMÉSTICAS PELA MANUTENÇÃO DOS GASTOS COM DEFESA PELOS ESTADOS UNIDOS: O CASO DO V-22 OSPREY

RESUMO

O artigo analisa a importância do ambiente doméstico nas discussões do orçamento de defesa estadunidense por meio do caso do V-22 Osprey. Durante a gestão de George Bush, o Executivo propôs o encerramento do programa por quatro anos seguidos, mas o Congresso impediu o corte. A argumentação se desenvolve a partir da atuação dos três vértices do chamado Triângulo de Ferro (militares, congressistas e empresários). Apesar de ser um programa ineficiente e que apresentou custos muito mais altos do que inicialmente previsto, esse conjunto de atores garantiu a sobrevivência do Osprey devido a interesses específicos (políticos ou econômicos) que possuíam em relação ao programa. A discussão pretende demonstrar que as visões que associam as decisões estratégicas dos EUA somente ao ambiente internacional são incompletas. O caso do V-22 é paradigmático, mas não isolado. A cada ano, diversos programas de armamentos se beneficiam de sua força política doméstica para se manterem ativos. Desse modo, o artigo contribui para aprofundar o conhecimento sobre como interesses específicos comprometem decisões estratégicas naquele país.

Palavras-chave: V-22Osprey. Orçamento de defsa. Triângulo de ferro. Decisões estratégicas.

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