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A Tactical Approach to R&D Tax Credits for Defense Contractors

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INTRODUCTION

The purpose of this article is to help private military defense contractors obtain a better understanding of the federal R&D tax credit and how it may help enable military defense innovations. This article also explores recent defense innovations for land, air, sea, cyberspace, and outer space threats and how the federal R&D tax credit incentive offered may be able to save a business money when developing these solutions.

The United States has one of the strongest and most technologically advanced militaries in the world. One key factor that has effectively contributed to the U.S. military's advantage has been the use of private contractors for the design, development, and manufacturing of innovative, cutting-edge products and solutions that address evolving national defense requirements.

Rapid technological change has led to an increased threat from land, sea, cyberspace, and outer space. The government has worked to combat these threats by increasing military spending budgets. With the recent passage of the 2019 National Defense Authorization Act (NDAA) in August 2018, the U.S. military has been granted a new spending budget of \$717 billion through September 2019. Of this new budget, \$95 billion has been specifically allocated for research and development (R&D) projects.

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Technological development has shown drastic growth for military defense industries. Defense industries that have been successful innovators include design and development of aircrafts, space systems, land vehicles, ships, and armaments. Related supply chain including parts and services such as engineering, testing, logistics, software development, and information technology also have grown rapidly. Many expenses associated with these efforts will qualify for R&D tax credits, at the federal and state levels.

LAND

Most ground missions in the U.S. military are carried out by the Army. The U.S. Army has looked for ways to enhance the safety of soldiers on the ground as well as develop innovative solutions by using technology and robotics to support combat troops or remove them from harm's way altogether. As such, the U.S. Army has recently focused efforts on designing and developing new, lighter, and more protective body armor and tactical vests, head gear, and transition eye-wear for soldiers.

The military is also considering turning to robotics to develop unprecedented and controversial fully-autonomous war fighters. Currently, robots are used to assist soldiers in carrying supplies, identifying improvised explosive devices, and operating unmanned tanks and trucks. For example, TALON robots assist explosive ordnance disposal teams to protect the military against explosive threats by detecting gas, chemical, and radiation. It is predicted that innovative technologies, such as the TALON robot, may transform to become fully autonomous due to the advancement of technologies in recent years.

AIR

The Air Force is a branch of the military that focuses on air defense, primarily through the design and development of cutting edge fighter jets, helicopters, and drones. The Air Force has been using drones for more than a decade for surveillance purposes and precision strikes. In recent years, the Air Force has been focused on developing smaller, smarter, and more ver-

satellite unmanned aerial vehicles (UAVs) or drones. New technology for adaptable UAVs has been developed to be able to alternate between fixed and rotor flight modes within the same mission and run on fuel cell technology.

Earlier in 2018, the Air Force debuted new F-35 stealth jets, aircraft designed to avoid radar and detection. Air-Ground Collision Avoidance System (AGCAS) has developed sensors to analyze and avoid ground objects in the fighter jets. As such, billions of dollars were spent to develop and manufacture the software, prototype hardware, and engines to power these jets.

SEA

The Defense Advanced Research Projects Agency's (DARPA's) Sea Hunter prototype development has been a major development milestone for the U.S. military. The Sea Hunter is a highly autonomous unmanned ship to be used in maritime operations. Artificial Intelligence (AI) has led the way to many breakthroughs in the development of autonomous vehicles. In early 2018, DARPA completed a successful technology demonstration of the vessel and handed it over to the U.S. Navy for further development. The vessel uses AI, software, and sensors for autonomous navigation without human oversight.

CYBERSPACE

The rapid pace of technological advances has forced the U.S. military to focus on strengthening cyber capabilities and developing offensive strategies and innovative solutions to fend off malicious activity. Specifically, the Department of Defense plans to leverage automation and large-scale data analytics to identify malicious cyber activity.

According to the October 2018 GAO Report to the Committee on Armed Services, nearly all new U.S. weapons systems have critical cybersecurity flaws that need to be addressed. "From 2012 to 2017, DOD testers routinely found mission critical cyber vulnerabilities in nearly all weapons systems that were under development," GAO researchers wrote. "Using relatively simple tools and techniques, testers were able to take control of these systems and largely operate undetected." The report drew attention to a newer trend that has security experts worried. As more devices and hardware are controlled and operated through the internet, the possibility that hackers could actually harm people or sabotage equipment through attacks, as opposed to just stealing information, has become a real threat.

OUTER SPACE

President Donald Trump has called for the development of a new military branch, Space Force, by January 2019.¹ Space Force will be focused on protecting space operations such as monitoring earth's satellites and launching and maintaining military satellites. President Trump has asked Congress for \$8 billion over the next five years to fund Space Force.²

Space satellites are important in conducting U.S. military operations due to global positioning system (GPS) tracking. GPS works to navigate motor vehicles, monitor objects, and determine a concise location. GPS is being used in the military for Aerial refueling, precision guidance/targeting weapons systems, and cartography and surveying.

MILITARY DEFENSE AND THE R&D TAX CREDIT

The U.S. military must constantly innovate to combat threats. This is an opportunity for private military defense contractors to design, develop, manufacture, and deliver new products or systems. Private military defense companies are likely eligible to take advantage of the R&D tax credit through the development of these innovative solutions. This incentive is available to businesses that attempt to develop new, improved, or technologically advanced products or processes. The purpose is to offset some of the financial risk that companies assume by undertaking high risk, high reward R&D projects. In addition to "revolutionary" development efforts, the credit is available to taxpayers that have performed "evolutionary" type activities like significantly improving upon performance, functionality, reliability, or quality of existing products or processes.

What Is the R&D Tax Credit?

The federal R&D tax credit, also known as the research and experimentation (R&E) tax credit, was first introduced by Congress in 1981. The purpose of the credit is to reward U.S. companies for increasing spending on research and development within the United States. The R&D tax credit is available to businesses that uncover new, improved, or technologically advanced products, processes, principles, methodologies, or materials.

How Does the R&D Tax Credit Work?

The R&D tax credit is available to taxpayers who incur incremental expenses for qualified research ac-

¹ Sandra Erwin, *New Pentagon memo lays out action plan to establish Space Force by 2020*, Space News (Sept. 13, 2018).

² Michael Greshko, *Would a U.S. Space Force Be Legal? Get the Facts*, National Geographic (Aug. 9, 2018).

tivities (QRAs) conducted within the United States. The credit is comprised primarily of the following qualified research expenses (QREs):

- Internal wages paid to employees for qualified services³; this includes those individuals directly performing the experimentation as well as those individuals directly supporting and supervising these individuals.
- Supplies used and consumed in the R&D process or used to build prototypes or pilot models.⁴
- Contract research expenses (when someone other than an employee of the taxpayer performs a QRA on behalf of the taxpayer, regardless of the success of the research).⁵ This type of expense is allowed at 65% of the actual cost incurred by the taxpayer. A thorough analysis must be performed to confirm whether the taxpayer has assumed financial risk and will have substantial rights to products and processes developed through the work completed by the third party.
- Basic research payments made to qualified educational institutions and various scientific research organizations.⁶ This type of expense is allowed at 75% of the actual cost incurred by the taxpayer.

For activities to qualify for the research credit, the taxpayer must be able to show they meet each of the following four tests:

- The activities must rely on a hard science, such as engineering, computer science, biological science, or physical science.
- The activities must relate to the design or development of new or improved functionality, performance, reliability, or quality features of a business component – a product or process used in the taxpayer’s trade.
- Technological uncertainty must exist at the outset of the activities. Uncertainty exists if the information available at the outset of the project does not establish the capability or methodology for developing or improving the business component, or the appropriate design of the business component;
- A process of experimentation (e.g. an iterative testing process) must be conducted to eliminate

the technological uncertainty. This includes assessing a design through modeling or computational analysis and experimenting to improve performance, yield, or efficacy.

Once it is established that the activities qualify, a thorough analysis must be performed to determine that the taxpayer has assumed the financial risk associated with, and will have substantial rights to, the products or processes that are developed through the work completed.

The Issue of Contracting and Funded Research

While independent contractors usually do invest a large amount to develop internal proprietary technologies and products, a significant portion of their research is also performed for third parties subject to detailed financial agreements. This is because military, defense, and aerospace products are generally not purchased as “off the shelf” items but are usually custom made for a specific customer or to address a specific requirement or purpose. The issue confronting defense, military, and aerospace companies when claiming R&D tax credits is which company has the financial risks and intellectual property rights associated with the QRAs, the contractor, or the entity engaging them and paying them.

Generally, the R&D tax credit is not available to taxpayers for research activity to the extent that such research is considered “funded” either by a grant, contract, or other arrangement.⁷ Congress enacted the funding limitation to restrict research credit benefits to a single taxpayer in a given transaction. That said, the limitation is imperfect in that two parties often claim the same costs as QREs. Alternatively, in some transactions, no party is allowed to claim the expenditures.

The §41 regulations provide a major exception to the funding exclusion.⁸ Under the regulations, research performed by a taxpayer on behalf of another is not funded if both the taxpayer retains “substantial rights” in the research and the payment to the taxpayer is contingent on the success of the research, meaning the taxpayer is “at risk” of bearing the research costs upon failure of the project.

There are two broad categories of contracts that will help make the determination regarding financial risk according to IRS guidance – fixed price contracts and cost reimbursement (also known as cost plus) contracts. Basically, a company that contracts to design and develop a new or improved product that

³ Wages are defined to include amounts considered to be wages for federal income tax withholding purposes. §41(b)(2)(D)(i), §3401(a). All section references are to the Internal Revenue Code of 1986, as amended (Code), and the regulations thereunder, unless otherwise specified.

⁴ Supplies are defined as any tangible property other than land or improvements to land, and property subject to depreciation. §41(b)(2)(C).

⁵ §41(b)(3).

⁶ §41(b)(3)(C).

⁷ §41(d)(4)(H).

⁸ Reg. §1.41-4A(d).

meets new requirements is said to have financial risk if they are obligated to successfully complete the project for a predetermined fixed price compensation amount. Alternatively, a company that undertakes the same project but gets reimbursed for all of its expenses, regardless of its ability to successfully complete the project within a specific timeframe, would not be said to have financial risk. There are often variations within these broad contract-type categories that will deem both parties as having some financial risk. In these situations and subject to contract language, both entities would be entitled to claim a share of the qualifying expense. An example of such a contract type would be cost plus contract limited by a “not to exceed” clause.

Amounts paid to a taxpayer performing QRAs under an agreement that is contingent on the success of the research are not treated as funding of the research. According to *Fairchild Indus., Inc. v. United States*,⁹ the determination of whether a taxpayer is at risk turns on which party bears the research costs upon failure of the project. When retention of payments to the part performing QRAs is contingent on performance, such as the successful design or development of a new product or process, that taxpayer bears the risk of failure.

In addition to having financial risk, to be able to claim research expenses, the taxpayer needs to maintain significant intellectual property rights in the product or technology being developed. This might include the right to sell the identical product to another customer or to utilize the technology, techniques, and methods developed going forward.

Although the §41 regulations do not define substantial rights, the regulations state that a taxpayer does not retain substantial rights when the party for whom the research is performed has the exclusive right to exploit the results of the research and the taxpayer must pay for the right to use the research results.¹⁰ In *Lockheed Martin Corp. v. United States*,¹¹ the court held that the right to use research results without paying for such right, even if not an exclusive right, is substantial. Still, if a taxpayer must pay a royalty to obtain a non-exclusive license to use the research results, then that taxpayer does not retain substantial rights in the research. Thus, so long as exclusive rights are not vested in one party, both parties can share substantial rights in the research results. For example, under the terms of many defense contracts, taxpayers performing QRAs on behalf of another entity, usually the U.S. government, often retain the

right to use any knowledge, techniques, and methods they acquire on future projects and applications. This is the case even though the technical drawings, blueprints, or product specification sheets created during the research activities often remain the property of the property owner.

As discussed earlier, costs that qualify for the credit include wages of employees involved in developing new or improved products or processes, supplies used or consumed during the research process, and 65% of fees paid to outside contractors who provide qualifying R&D services on behalf of the taxpayer. It is critical that taxpayers seeking to claim R&D tax credits develop a methodology for identifying, quantifying, and documenting project costs that may be eligible. Determining the true cost of R&D is often difficult because few companies have a project accounting system that captures many of the costs for support provided by the various personnel who collaborate on R&D.

The ultimate success of a project is not required in order for those project expenses to qualify. Activities related to R&D projects that ultimately fail are rewarded the same as projects that succeed in meeting objectives.

Assembling appropriate documentation may require changes to the company’s recordkeeping processes because the burden of proof regarding all R&D expenses claimed is on the taxpayer. The company must maintain documentation to illustrate nexus between qualifying research expenses and qualifying research activities.

The Issue of Qualifying Supply, Prototype, and Tooling Expenses

In claiming the R&D tax credit, taxpayers may include expenses incurred for supplies used in performing qualified activities. According to the June 2005 IRS Audit Techniques Guide (ATG), a “supply” in this context can be defined as non-depreciable tangible property acquired by the taxpayer that is used in the performance of “qualified services.” Claiming supply expenses has long been a contentious issue between taxpayers and the IRS. Per the ATG, “Supply QREs, in general, should represent a small portion of total QREs.” The defense industry in particular, however, in its continuous quest to innovate and improve upon performance of equipment, has always invested a significant amount of resources in the design and development of prototypes.

Historically, the IRS has used the depreciable property exclusion to disallow supply expenses in instances where the property was ultimately sold to a customer, thereby becoming depreciable property of the customer. This was inherently confusing to tax-

⁹ 71 F.3d 868 (Fed. Cir. 1995).

¹⁰ Reg. §1.41-4A(d)(2).

¹¹ 210 F.3d 1366 (Fed. Cir. 2000).

payers, as the uncertainty of research and experimentation projects necessarily prevented them from knowing in advance if they would ultimately be successful, let alone be able to sell a prototype commercially. It was also perceived by many as hypocritical of the IRS, as the purpose of §174 was to encourage research and experimentation including development of prototypes and pilot models. Since meeting the §174 requirements is a prerequisite to qualifying for the §41 R&D credit, these regulations also impacted QRE determinations under §41.

Section 174 allows manufacturers, defense contractors, and other taxpayers to immediately deduct the cost of qualified research expenses. Without this provision, many costs would have to be depreciated or capitalized over five or more years. In claiming R&D credits, manufacturers can easily miss research expenses hidden within costs of goods sold or treated as fixed assets for book purposes. This typically includes prototypes and pilot models.

On July 21, 2014, the IRS issued final regulations (T.D. 9680) making the definition of research and experimental expenditures under §174 more taxpayer friendly as related to development and production of tangible property, including prototypes and pilot models. The final regulations included the following changes:

- If expenses qualify as being experimental, the ultimate success, failure, sale, or other use of the research or property is not relevant to the determination of eligibility under §174.
- The depreciable property exclusion should not be applied to otherwise qualifying expenditures.
- “Pilot model” is defined as any representation or model of a product that is produced to evaluate and resolve uncertainty concerning the product during the development or improvement of the product, including fully functional representations or models of the product or components of the product.
- A “shrinking-back” provision was added to address situations in which the requirements for qualification are met with respect to only a component of a larger product and are not met with respect to the overall product itself.

These more friendly final regulations eased taxpayer concerns, particularly those claiming R&D tax credits, about otherwise eligible §174 expenses being reversed by the IRS due to subsequent sale of the actual pilot model or prototype. While these regulations are favorable for taxpayers that develop their own manufacturing equipment, accountants need to be aware of remaining potential exclusions. In order for

costs to be potentially eligible for the R&D credit, these costs must be treated as §174 expenditures from the first year they are incurred under acceptable accounting methods. Costs that are capitalized in construction in progress (CIP) and later included in the cost of a fixed asset and depreciated are excluded from treatment as eligible research expenditures. If caught early enough, this may be avoided by applying for a change in accounting method, yet taxpayers must continue to treat all prior year costs under the prior method of accounting. This uncommon issue could potentially have an adverse impact on long-term prototype development projects.

In addition to prototypes and pilot models, defense contractors often spend significant resources on tooling costs associated with acquiring or fabricating parts used in equipment assembly or production. In August 2018, the IRS conceded a case in the Tax Court brought by an automotive parts supplier, TSK of America Inc., related to its 2013 R&D tax credit claim. The taxpayer had treated tooling costs as supply QREs for purposes of the R&D credit including metal stamping, plastic injection molding, and tools purchased from a third party that were used in its production process. TSK argued that it undertook an extensive trial and error process to refine the various tools to ensure that the tools performed as designed and met its needs for efficiency, accuracy, and economic productivity. While a third party produced the tool for TSK, the third party did not guarantee that the tool satisfied TSK’s requirements and specifications. Because the case did not go to trial and resulted only in a decision, it does not set case precedent for future claims. Still, the IRS’s decision to concede suggests that taxpayers facing similar situations now have a stronger argument for including these types of expenses in their R&D tax credit claims.

Defense, Military, and Aerospace Industry Examples of Qualifying, Non-Qualifying R&D Activities

Qualifying R&D activities as they apply to the defense, military and aerospace industry fall within four general buckets:

- new product development;
- significant product improvement;
- new process development; and
- significant process improvement.

Examples of industry activities that will qualify for purposes of the R&D tax credit

- Design and development of new military products, parts, and equipment (aircraft, helicopters,

tanks, naval ships and submarines, satellites and space systems, drones, robots, etc. . .)

- Researching and experimenting with new technologies for use in new product or process developments
- Design and development of new or improved assembly, manufacturing, production, or distribution processes, methods or techniques for improved performance or reliability
- Developing unique software applications or embedded software for use in new product or process developments
- Design and development of new mechanical systems and components to improve performance
- Designing and fabricating specialized tooling
- Developing new composite materials and manufacturing methods to reduce weight or increase durability and performance
- Design and development of new communication and navigation equipment and systems
- Feasibility analysis and research for integrating automated processes, machines or robotics
- Design and development of manufacturing control systems
- Feasibility analysis and research for using 3D printing to develop prototype parts
- Experimentation with new composite materials and viable manufacturing methods
- Design and development of new jigs, dies, fixtures, and tooling
- Design and development of prototypes for testing and validation
- Research and process development for ISO or other industry or regulatory certifications
- Design and validation testing to gain compliance with new regulatory requirements
- Developing new applications for engineering plastics
- Developing new surface treatments and hardening or coating methods
- Experimenting with new materials to optimize strength and minimize weight of equipment or components
- Design and development of scaled-up manufacturing processes
- Experimenting with ways to increase product yield and decrease cycle times

- Innovating ways to improve a product quality
- Improvements and innovation in systems integration

Examples of activities that do not qualify for purposes of the R&D tax credit

- Routine testing or inspection activities for quality control
- Development related purely to aesthetic properties of a product or packaging
- Production line modifications that do not involve technical uncertainty, i.e. trouble shooting involving detecting faults in production equipment or processes
- Market research for advertising, branding, or promotional purposes
- Routine data collections or inspections
- Research conducted outside the United States, Puerto Rico, or any possession of the United States;
- Research that is funded by a third party other than the taxpayer
- Activities that do not meet all of the four tests previously outlined

RECENT LEGISLATION

Recent tax law changes have made it more attractive and possible for smaller companies to take advantage of the R&D tax credit. In December 2015, President Obama signed into law The Protecting Americans from Tax Hikes (PATH) Act of 2015. In addition to making the R&D tax credit permanent, this legislation benefitted a large number of taxpayers who had been previously unable to take advantage of the powerful incentive due to their particular tax situation. First, the legislation allowed small businesses to claim the R&D tax credit against their alternative minimum tax (AMT). The AMT restriction has long prevented qualified companies from utilizing the research credit, so this new legislation removed that hurdle for qualified businesses with less than \$50 million in gross receipts. Secondly, the PATH Act allowed startup businesses with gross receipts of less than \$5 million to claim the R&D tax credit against their payroll taxes -- essentially making it a refundable credit for up to five years.

In December 2017, President Trump signed into law the Tax Cuts and Jobs Act of 2017 (2017 tax act), implementing the most sweeping update to the tax code since 1986. The centerpiece of the 2017 tax act

was a permanent reduction in the corporate tax rate from approximately 35% to 21%. In exchange for the lower tax rate, the 2017 tax act eliminated most business tax credits and incentives. However, it preserved the R&D tax credit, which has always enjoyed broad bipartisan support. While there were no direct changes made to the R&D tax credit regulations, there was a major change that affected a large group of taxpayers claiming R&D tax credits. The 2017 tax act repealed the AMT restriction on corporations, which had long prevented them from utilizing R&D tax credits to offset regular tax liability. For small and mid-sized companies, the new law did not have an impact, because qualified small businesses (< \$50 million gross receipts) had already received an AMT waiver in the PATH Act of 2015.

The 2017 tax act retained the individual AMT with temporary increases in both the exemption amount and the phase out threshold. Exemption amounts were increased to \$109,400 for joint filers and \$70,300 for other filers. The phase-out thresholds were increased to \$1 million for joint filers, and \$500,000 for all

other taxpayers (other than estates and trusts). This effectively decreased the number of households subject to the AMT.

CONCLUSION

With massive U.S. military budgets already secure for the coming years and a continuous need for updated weapons and systems, the future seems bright for defense contractors across the product and service spectrum. Many expenses associated with these efforts will qualify for R&D tax credits at the federal and state levels.

Taxpayers that currently have a federal income tax liability, and even those that anticipate having one in the foreseeable future, stand to benefit as federal R&D tax credits can be carried forward for up to 20 years. Recent legislation has made the R&D tax credit more accessible than ever before, so qualifying businesses would be well advised to take notice.