



### Engineering Services for Government and Industry Customers

**Business Services  
Engineering-Risk-Safety**

**A-P-T Research, Inc.  
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**Tom Pfitzer  
President**

**BIO:**  
Tom Pfitzer is the Founder and President of A-P-T Research, Inc. Mr. Pfitzer holds a Masters Degree in Industrial Engineering (System Safety Option) from Texas A&M University. He is a graduate of the U.S. Army Intern Program in Safety Engineering. He has 19 years' service in the safety career field for the U.S. Army and over 40 years in System Safety, Range Safety, and Risk Analysis experience. He has held various positions in safety and risk assessment both Government and industry, in Huntsville, AL and Kwajalein, Marshall Islands. Early in his career he was the Safety Officer at

a national range monitoring safety for over 200 launches. Prior to establishing the Safety Engineering and Analysis Center (SEAC), he founded A-P-T Research, Inc. in 1990, a company that employs over 100 practicing safety professionals. Major contracts support the US Missile Defense Agency and NASA Kennedy Space Center.

Tom has supported numerous U.S. and international agencies that are developing risk-based standards. He is currently a member of Society of Risk Assessment and senior member of System Safety Society and on the Board of Directors of International Association for the Advancement of Space Safety, chairing the Launch Safety Committee. He has authored more than 20 papers in technical journals.

**Company  
About A-P-T Research, Inc.**

A-P-T Research, Inc. (Analysis-Planning-Test Research, Inc. (APT)) is an employee-owned, small business headquartered in Cummings Research Park, Huntsville, Alabama. APT also has geographically dispersed expertise managing quality and safety contracts at Cocoa Beach, FL; Dover, NJ; Albuquerque, NM; White Sands Missile Range (WSMR), NM; Ft. Walton Beach, FL; Washington DC; Quantico, VA; and Indian Head, MD. Founded in 1990, APT has steadily grown to a solid business base of \$28M/year and 132 employees. APT currently provides professional engineering services to more than 50 customers (approximately 40 of which are Government agencies) in a variety of disciplines including systems engineering, risk assessment and analysis, test planning, range safety, system safety, software system safety,

explosives safety, industrial and quality engineering, quality assurance, mission assurance, Independent Verification and Validation (IV&V), software development and modeling, and related areas. In 2010, APT achieved ISO 9001:2008 certification which includes the highly unique statement, "APT Research has established and maintains a QMS to provide engineering services for safety, quality, testing, analysis, training, and software on a global basis to Government and Industrial Organizations." APT was recently ISO recertified for 2013–2016.

**History of Support**

- NASA Kennedy Space Center (KSC) – APT provides mission assurance, engineering, and risk assessment in the disciplines of safety, reliability, and quality within KSC and at all KSC responsible sites. APT will also be providing and improving mission assurance for Johnson Space Center and consults for Goddard Research Center.
- Missile Defense Agency Engineering Support Services (MiDAESS) – Since 2010, APT has been providing support to the MDA in the functional areas of systems safety, mission assurance, flight and ground test events, range safety, ordnance activities, weapons safety, and explosives safety at all MDA operating locations.
- Department of Defense Explosives Safety Board (DDESB) – APT has supported DDESB safety function by developing risk-based methods and tools for the last 17 years.
- Range Commanders Council (RCC) – APT has developed range safety analysis methods used by most national ranges.
- Defense Safety Oversight Council (DSOC) (DSOC has oversight of

DoD using congressional funding) – APT has developed system safety methods used by DoD.

- Federal Aviation Administration (FAA) – APT serves as the Independent Technical Authority (ITA) for the FAA review of the safety of commercial launches.
- Training in Safety and Mission Assurance – APT has trained over 2,000 safety professionals. Our list of courses is steadily growing.
- Tool development – APT continuously develops numerous analytical and database tools for use by the safety and mission assurance professional.
- Professional organization affiliation – APT is active in the International System Safety Society (ISSS), the International Association for the Advancement of Space Safety (IAASS), and the G-48 Committee (national Government/industry panel on system safety).

For more information, please visit <http://www.apr-research.com/>

**Interview conducted by:  
Lynn Fosse, Senior Editor  
CEOCFO Magazine**

**CEOCFO:** Mr. Pfitzer, what is the concept at APT Research?

**Mr. Pfitzer:** We are an employee-owned company providing engineering services to Government and industry customers. APT is a niche company specializing in a subset of engineering services called safety and mission assurance engineering. We have a nation-wide customer base. About half of our customers are here in Huntsville, Alabama. Our customers are mainly large Government organizations who conduct activities that have some degree of safety risk.

**CEOCFO:** Would you give us an example?

**Mr. Pfitzer:** For example, we are the prime safety support contractor at Kennedy Space Center. As we know, KSC launches things into space and there are associated hazards with launch, before, during and after. We are the company that assesses those risks and helps mitigate them. That is one of our main contracts. We also

have a contract with the Missile Defense Agency, which involves assessing aerospace risks, explosive risks, transportation risks, and others. In addition, we work for customers such as the Department of Defense Explosive Safety Board. We are sometimes called in to evaluate explosive accidents such as the accident in West Texas a few months ago. We have a high degree of expertise in some of these more risky businesses.

**CEOCFO:** When you are assessing a situation, what are you looking at and how are you judging the potential risks?

**Mr. Pfitzer:** We often try to distill the risk quantitatively, but the quantitative assessments are based on historical experience with similar or identical types of situation, systems or products. It is a history-based risk assessment considering the evolutions in the technology. To give you an example, within the Department of Defense, there is a huge experience base for locations that store explosives such that we can estimate the probability that a particular type of explosive will have an unexpected event based. We can therefore use that history as a predictor of the future.

**CEOCFO:** What might be some of the risks or potential consequences that most people would not think about, but with your background and experience of APT, you add to the mix?

**Mr. Pfitzer:** There are always some that you do not think about, but I think the larger error comes with the things that we do think about but exaggerate the seriousness thereof. It is true that in any new development of technology, there are potential risks that have not been thought of. High-profile events such as the Challenger, Columbia, and Apollo events, involved technical details that no one had thought of until it happened. Once it happens, people think about it and they analyze it. Our job is to bring reality to the analysis. In part, we try to identify things that have not been thought of previously. There are some of those, but I would put those in the smaller subset. Certain kinds of risks people fear very greatly; for example,

people have great fear of sharks. However, the truth is that sharks do not attack or kill as many each year as people think. The number is not nearly as high as things with which we are much more comfortable, such as driving. We try to bring reality to those things that are known and feared.

**CEOCFO:** How do you reach potential customers?

**Mr. Pfitzer:** For the most part, we go through the Government procurement process for getting new contracts. During my career, I have watched those processes expand from a four-month process to sometimes a two-year process to compete for a contract and win it. The spin-up time is not quick, and it seems to be painfully slow from my perspective. Government contractors would like to see the Government streamline that timeline, but it is getting worse and worse. We also reach customers at conferences, we advertise to a small degree, we have developed a name brand, and we participate in several national panels that are developing new standards. For example, we work on the G-48 Committee, which is establishing national policy for best practices in system safety. We are a company of 130 people, but we are specialized in this area. The other six members of the Committee include Boeing, Lockheed, Raytheon, SAIC and Northrop Grumman. They are all large aerospace houses and we are collaborating with them as a very small, niche-based company.

**CEOCFO:** What do you look for in your people over and above the technical skills?

**Mr. Pfitzer:** We are employee owned, and therefore I look for people who have the ambition to work as part of a team to make the company ownership concept grow. I also look for people who are satisfied with a career in this profession. The glory does not come to people who are behind the scenes trying to make things safe, and some people may prefer to get out and build things. We are more of the support variety and it takes a little bit different type of personality to be happy behind the scene. I look for people who are dedicated to the profession, who want

to work together with a team, and who enjoy the growth that we have been experiencing in the last five years and want to make it continue. Ambition is always nice to see in your employees.

**CEO CFO:** Giving back to the community is clearly important for you. Why so, and could you touch on some of the ways you are involved?

**Mr. Pfitzer:** We recently competed for and won small business of the year, in Huntsville, Alabama. There are 400 or so small businesses that are Government contractors here and we are in that mix. Giving back to the community was one of the criteria. When I reviewed the list of what our employees are doing within the community, even I was impressed because I was unaware of just how involved our people are in schools, churches and civic groups. We are widely dispersed across these organizations and we encourage it. We are also actively involved in the Chamber of Commerce. I serve on a couple of civic panels building the reputation of this community. Quite a few of our senior leaders are also involved. We participate in the Huntsville Beautification competition and have won top honors in that competition for five years running. I think we are actively involved, more so than most government contractors.

**CEO CFO:** Would you like to see growth outside of the government arena?

**Mr. Pfitzer:** Yes, we are in fact investigating growth in several areas. One of them is in transportation, which is managed by the Department of Transportation. We are one of only six companies in the country that can classify hazardous explosive items for transportation. We have achieved that new credential during the last year. Moving into more support for the transportation industry is one area. A second area is in the application of our discipline to medicine. My son is a medical doctor and I talk with him a lot about the mistakes that are sometimes made in hospitals. A discipline we have developed for the aerospace industry, NASA, and DOD could be

beneficial in the medical field. The application of the discipline of the system safety is when you look at a system, whether it is operated by humans or automated, and you look for where you can have breakdowns in that system. That application can be applied in medicine to places like the emergency room and the operating room where you build in redundancies and fail safe practices. You hear the horror stories of people getting the wrong leg amputated and things like that. Those are so simply solved if you build it in to your management system. We are looking for other applications of the same discipline outside the purely Government arena into more of the private sector. I foresee good continued growth for at least the next decade, even though we currently are on two of the three largest contracts in our niche in the country. We are the prime contractor on two and we are a

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subcontractor on the third. If you take just the center part of our niche, we have done a good job of fleshing it out, but there are other very closely related areas where we will expand the breadth of our niche.

**CEO CFO:** Why is this the right time for APT to do so?

**Mr. Pfitzer:** Well, because the time is now. If you look at the industry as a whole, it is not a particularly good time. Our industry is shrinking; therefore, I would not say this is the best era for expansion, yet we are. I think the reason we are growing is that we have new approaches to some of the age-old problems of building in more systemic safety into your operations and your systems. We are also very good at what we do. We think the market sector is getting smaller and we are looking at other companies to either acquire or merge with because there is not that much business out

there, but we are a leader in our pack. We want to make sure we stay in that position.

**CEO CFO:** What still makes it exciting for you after all these years?

**Mr. Pfitzer:** Seeing the enthusiasm on the faces of the employees who have come in during the last decade and have been here long enough to see some of the growth result from their handiwork. I have been in this company now for 24 years, so it is the motivation that I see in them more than my own motivation at this time in my career. At 67, I am looking to mentor people to be the leaders of the future.

**CEO CFO:** Why should people in the business and investment community pay attention to APT Research?

**Mr. Pfitzer:** One reason is that we have a very solid reputation, which only comes with time. Our company motto is providing safe solutions, and those are just words on paper until you point to the solutions that were otherwise overlooked but we provided for our customers. The proof is in the pudding, and the pudding only solidifies with time. We have been advertising this concept for a number of years, and the customers keep coming back.

We have one customer that has been with us for 20 years, another for 14, and another for 13. In the Government support industry, you do not often find that kind of loyalty. I think we built that reputation and the reputation has grown and continues to solidify.

**CEO CFO:** Do have any final thoughts?

**Mr. Pfitzer:** We are continuing to gain more recognition, which just serves to improve our reputation. There was a book written several years ago, From Good to Great, and it has a concept of a wheel that keeps spinning. You just keep adding inertia to the wheel. I think that has been a concept that we have applied to just keep on keeping on, and keep adding inertia to the wheel. That is a concept that we have implemented and it has worked well for us.



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