TESTIMONY

OF

NORMAN R. AUGUSTINE

ON

DEFENSE ACQUISITION REFORM

BEFORE THE

ARMED SERVICES COMMITTEE

OF THE

UNITED STATES SENATE

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Mr. Chairman and Members of the Committee, thank you for this opportunity to share my views on the defense acquisition system. I should emphasize that I am appearing as a private citizen, representing only myself.

In the way of background, my perspective is that of one who has participated for sixty years in defense acquisition at virtually every level and has observed the process from both the industry and government standpoints. I have also participated in over 500 board meetings of Fortune 100 commercial firms concentrating in the energy, manufacturing and consumer products fields.

If one is to seek to improve defense procurement "while doing no harm," recognition of at least ten facets of the environment in which the process functions is essential.

The first of these is that in terms of capability no other nation on Earth would trade their defense equipment for that of the United States.

Second, there is an enormous number of dedicated, talented individuals both within government and in industry who somehow make the system work as well as it does.

Third, in America we have chosen, unlike many other countries, to rely largely upon the private sector, operating as a free-enterprise endeavor, to equip our armed forces; the alternatives being to have government arsenals entirely fill that role or to *de facto* nationalize the industry. Having traveled in some 112 countries around the globe, I have observed nothing that causes me to believe that either of the latter two approaches would in any way be superior. This conclusion of course carries many implications and consequences, perhaps foremost among these is that so-called "defense companies" must compete not only against one another but also must compete for talent and capital against Google, Amazon, Facebook and IBM. This in turn means that the industry's shareholders will demand a competitive return on their investments and that sought-after employees will demand to work in an innovative, creative environment where they have the freedom to excel and contribute.

Fourth, unlike virtually all the rest of U.S. industry, the defense sector operates in a monopsony. Its defense products have in essence but one customer, a customer that makes the rules, interprets the rules and enforces the rules. At the same time, the customer, in this case the U.S. government, occasionally, and sometimes unavoidably, finds itself dealing with a monopoly. If, for example, the government decided it needed one more B-2 bomber there was only one place where it could be practicably obtained.

Fifth, in most commercial businesses a "bad year" means the loss of two or three points of market share. In defense procurement, where major contracts come in rare but enormous quanta, it can mean going out of business. Consider the case of the iconic McDonnell Douglas Corporation being absorbed into Boeing shortly after the former lost the F-35 contract competition.

Sixth, unlike when I entered the industry, the leading edge of most technology no longer resides in the defense industry. The latter was where such things as commercial jet aircraft, satellite communications, nuclear power, GPS, robotics and the internet originated. That was where

young scientists and engineers wanted to work. Today, the leading edge of the state of the art and innovation is often to be found in commercial firms, and many of those firms are not eagerly seeking the opportunity to participate in the defense acquisition process—or even with the government in general. A canonical example would be the situation that existed some sixteen years ago when the CIA recognized that the state of the art in its very lifeblood, informatics, had moved to Silicon Valley, Route 128, Research Triangle, Houston and other such environs, places where many of the leaders, probably most, wanted absolutely nothing to do with government procurement policies. Having at that time just retired from my job in industry, I was asked to help address this impasse that was increasingly becoming a danger to our nation's intelligence capability. This led to the establishment of an organization that we called In-Q-Tel, the concept of which was very simple: conduct business on behalf of the government with Silicon Valley and others as they would deal with any other commercial firms. I believe that it is fair to say that this has been an immensely successful endeavor from virtually every perspective.

Seventh, and again unlike when I first entered the industry and the average shareholder held a share of stock for eight years, today that period is four months—and declining. This implies that a firm's owners—including those firms supporting national defense—have little interest in what happens to the firm ten or fifteen years from now. And this, in turn, implies that the government must be particularly mindful of the fragility of the nation's overall defense enterprise and its long-term importance.

Eighth, the industrial foundation of national security is not the defense sector *per se*, as important as it may be. Rather, it resides in the nation's economy as a whole. Without a strong economy our nation will be unable to afford a strong military with modern equipment. That is a formula for greater casualties in warfare…or worse. Numerous studies, including one that formed the basis of a Nobel Prize, have shown that 50 to 85 percent of the growth in America's GDP during roughly the past half century are attributable to advancements in just two fields: science and technology. Yet, in recent years America has fallen from first to seventh place in basic research as a fraction of GDP and from first to tenth place in R&D by the same measure. China is projected to outspend the U.S. in R&D in less than ten years, both in absolute terms and relative to the economy. The U.S. government now ranks 29th in the fraction of research performed in the nation that is federally funded. We rank 79th out of 93 nations in the fraction of all baccalaureate degrees that are granted in the field of engineering. The nation most closely matching us in this regard is Mozambique. Our 15-year-olds rank 21st in science and 27th in math among the 34 OECD nations participating in standardized tests. It is my view that these factors are far more consequential to our nation's defense than shortcomings of our defense acquisition process, as serious as the latter may be.

Ninth, those individuals and firms who work on projects supporting our nation's defense bear a special fiduciary responsibility that far transcends that of those who operate in the more conventional commercial marketplace. This implies that in some instances these individuals and firms must be prepared to accept special constraints.

Tenth, the defense acquisition process does not function nearly as well as it could or should.

Which brings us to the questions of what is broken and how can we fix what is broken without destroying the system's underlying strengths. I could of course offer a long list of specific actions and in fact have done so on a number of occasions. The problem is that there is no silver bullet—if there were it would have been implemented long ago. But if there is anything *approaching* a silver bullet it is to use wherever possible the power inherent in the free enterprise system that has made America's business, its universities and its innovative process the the envy of the world.

But in doing so one is constantly confronted with paradoxes. Competition is the heart and soul of free enterprise, but where limited numbers of items are procured, as is often the case in defense procurement today, at what point does it no longer make economic sense to establish a second producer to maintain competition? When does it make sense to distort procurement policies to promote worthy social goals, such as aiding small businesses? Fixed price contracts make a great deal of sense under many circumstances, say performing serial production, but when applied to risky endeavors, say R&D, only the desperate, foolish or dishonest would bid other than an inordinately, and probably unacceptably high, fixed price. Where is the point in the continuum at which one type of contract or the other no longer makes sense? When relying on past performance to select contractors such as is widely done in the free market, what does one do when the CEO's of the two firms in a major competition suddenly switch jobs—as actually happened on one occasion? Or how does one evaluate a firm possessing no prior record that seeks to enter the market?

The answer to such questions resides in a single word: "judgment"…and judgment regarding complex issues is an attribute that can only be found in one place—competent, dedicated, experienced people who are given the freedom to exercise judgment.

This of course means that bad judgments will occasionally occur…judgments are made by humans. In the private sector, when particularly bad judgments are made people lose their jobs. In government, when bad judgments are made, nothing happens. Too often when good judgments are made, nothing happens either. In industry people are rarely placed in positions for which they have not accumulated years of relevant experience. This is often not the case in government. Further, there are few people in senior or relatively senior government line-positions possessing any experience in industry; and the converse is also true.

The essence of my message today is the compelling need for a personnel system that delegates authority, rewards success and penalizes failure. This is by no means an original idea. It has been espoused for a half-century by friends of mine such as Air Force General Bennie Schriever, Army General Bob Baer, Admiral Wayne Meyer, and industry executives such as Dave Packard and Kelly Johnson. Virtually every successful major defense program that I can recall has had as its leader an extraordinary individual such as these folks.

But today's policies strongly discourage leaders in industry from serving in government; military officers from going into acquisition; and government civilians from aspiring to hold senior positions in their organizations. (For example, today there are no fewer than 168 presidential appointees—not all Senate confirmed—in leadership roles in the Department of Homeland Security, not all of whom have experience in homeland security.)

If we are to make the acquisition process work more like a business, the first thing we must do is run the personnel management system more like a business. Only then can we get down to lesser matters such as fixing the requirements process, increasing prototyping, milestone budgeting, contingency funding, enhancing competition, shifting management authority from staff to line, providing funding stability, and encouraging prudent risk-taking. Fortunately, none of this is rocket science…it is done every day in the free enterprise marketplace.

Thank you again for permitting me to share my views, and thank you for devoting your attention to this critically important topic.

NORMAN R. AUGUSTINE was raised in Colorado and attended Princeton University where he graduated with a BSE in Aeronautical Engineering, magna cum laude, and an MSE. He was elected to Phi Beta Kappa, Tau Beta Pi and Sigma Xi.

In 1958 he joined the Douglas Aircraft Company in California where he worked as a Research Engineer, Program Manager and Chief Engineer. Beginning in 1965, he served in the Office of the Secretary of Defense as Assistant Director of Defense Research and Engineering. He joined LTV Missiles and Space Company in 1970, serving as Vice President, Advanced Programs and Marketing. In 1973 he returned to the government as Assistant Secretary of the Army and in 1975 became Under Secretary of the Army, and later Acting Secretary of the Army. Joining Martin Marietta Corporation in 1977 as Vice President of Technical Operations, he was elected as CEO in 1987 and chairman in 1988, having previously been President and COO. He served as president of Lockheed Martin Corporation upon the formation of that company in 1995, and became CEO later that year. He retired as chairman and CEO of Lockheed Martin in 1997, at which time he became a Lecturer with the Rank of Professor on the faculty of Princeton University where he served until 1999.

Mr. Augustine was Chairman and Principal Officer of the American Red Cross for nine years, Chairman of the Council of the National Academy of Engineering, President and Chairman of the Association of the United States Army, Chairman of the Aerospace Industries Association, and Chairman of the Defense Science Board. He is a former President of the American Institute of Aeronautics and Astronautics and the Boy Scouts of America. He serves on the Board of Trustees of the National World War II Museum and is a former member of the Board of Directors of ConocoPhillips, Black & Decker, Proctor & Gamble and Lockheed Martin, and was a member of the Board of Trustees of Colonial Williamsburg. He is a Regent of the University System of Maryland (12 institutions), Trustee Emeritus of Johns Hopkins and a former member of the Board of Trustees of Princeton and MIT. He has been a member of advisory boards to the Departments of Homeland Security, Energy, Defense, Commerce, Transportation, and Health and Human Services, as well as NASA, Congress and the White House. He was a member of the Hart/Rudman Commission on National Security, and served for 16 years on the President's Council of Advisors on Science and Technology under both Republican and Democratic presidents. He is a member of the American Philosophical Society, the National Academy of Sciences and the Council on Foreign Relations, and is a Fellow of the National Academy of Arts and Sciences and the Explorers Club.

Mr. Augustine has been presented the National Medal of Technology by the President of the United States and received the Joint Chiefs of Staff Distinguished Public Service Award. He has five times received the Department of Defense's highest civilian decoration, the Distinguished Service Medal. He is co-author of *The Defense Revolution* and *Shakespeare in Charge* and author of *Augustine's Laws* and *Augustine's Travels*. He holds 34 honorary degrees and was selected by Who's Who in America and the Library of Congress as one of "Fifty Great Americans" on the occasion of Who's Who's fiftieth

anniversary. He has traveled in 112 countries and stood on both the North and South Poles of the earth.