A Question of Trust:
Revitalizing the Nuclear Weapons Complex's Most Fundamental and Endangered Resource

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Abstract

At the core of every working relationship, at the core of every institution, at the core of governance is a fundamental building block: trust. This paper makes the case that the implications for the future will be profound if the revitalization of trust is not undertaken as a principal goal for future Nuclear Weapons Complex initiatives. Indeed, for the US Nuclear Weapons Complex, the revitalization of technical capabilities, intellectual capital, and management effectiveness is often discussed explicitly; similar conversations regarding the revitalization of trust are needed. Herein, the foundational role of trust for the Nuclear Weapons Complex is explored, first by considering the myriad of relationships in a notional "trust ecosystem" and then considering and categorizing the events over the past few decades that have impacted the ecosystem. We highlight the importance of trust on the ability to attract and retain the future stewards whose competence and dedication to service in the national interest are at the heart of a safe, secure and effective nuclear deterrent and conclude with three concrete areas to begin revitalizing trust.

> "The activities obliged or elected to be over-administered, directed and ordered are a countervention of the value of trust. The laboratory human resources are demotivated by such an environment."
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> -The Galvin Commission, 1995

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Trust as a First Principle

A decade-and-a-half ago, the Galvin Commission rose to the challenge of creating a bold recommendation for fixing the governance of the National Laboratories.[2] In their recommendation, the Commission put as a first principle the foundational role of trust by seeking to allow the Laboratories to operate "more to the principles of trust and self-initiative; from these principles accrue greater flexibility, quality, and productivity—as well as the revitalization of an operating institution and the heightened accomplishment of its mission."

The connections between trust and productivity, trust and innovation, trust and mission, trust and the future—are perhaps perplexing to many, particularly those of us with technical backgrounds, because trust is, by its nature, so very non-quantifiable. So very "soft." This paper makes the case that trust is as important a foundation for productivity and innovation as more obvious elements such as technical capabilities and that trust is integral to achieving a safe, secure, and effective arsenal and a sustainable and cost-effective Nuclear Weapons Complex. A lack of trust is de-motivating; it ultimately drives away the talent and innovation that institutions like the National Laboratories most hope to recruit and retain.

A "Trust Ecosystem"

To use a simple analogy, one can think of the Nuclear Weapons Complex ("the Complex") as sitting within a delicate "trust ecosystem." [3] The myriad of relationships are depicted in Figure 1. Clearly, the number of relationships requiring trust extends far beyond those within the Complex itself.

At the lower right corner of Figure 1 are the US public and the international community, the recipients of the messages regarding stockpile confidence that

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[2] *Alternative Futures for the Department of Energy National Laboratories*. Prepared by the Secretary of Energy Advisory Board Task Force on Alternative Futures for the Department of Energy National Laboratories, 1995.

[3] The Nuclear Weapons Complex, or "the Complex" refers to the NNSA Nuclear Weapons Complex, the three national laboratories (Los Alamos, Lawrence Livermore, and Sandia), the Kansas City Plant, the Nevada Test Site, the Pantex Plant, the Savannah River Site, and the Y-12 National Security Complex.

emanate from the stewards of the deterrent. As depicted by the arrows, the trust can be simplistically considered to be one-way in the area of Figure 1 that extends from the US public/international community (the lower right hand corner) up to the point of the elected representatives. In other words, the dominant need in this domain is for the public to trust the credibility of the stewards.

At the middle slice in Figure 1 where Congress and the expert panels they commission come into play, the flow of trust in *both* directions begins to become very important, particularly in the sense that the stewards must trust that the information that they provide will be used fairly and judiciously and that decisions will reflect a desire to be fully educated regarding the facts and complexities of the Complex as a whole.

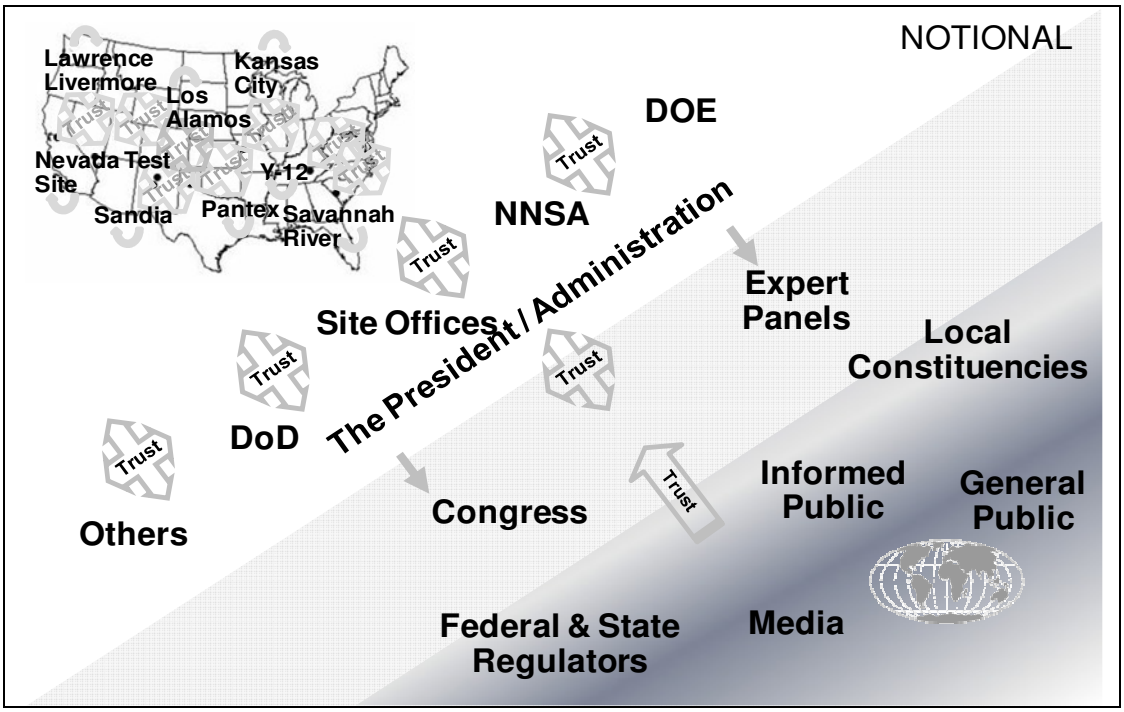

Figure 1: A Notional Nuclear Weapons Complex Trust Ecosystem

In a general sense, the slice of Figure 1 that encompasses the President and administration, the Departments of Energy and Defense and the National Nuclear Security Administration represents the "customers" for the Nuclear Weapons Complex; here it becomes important to make several key points. First and quite

obviously, the trust between the sites and their customers is crucial. Less obviously but no less important, the trust *between customers* who utilize the nuclear weapons complex is absolutely critical, particularly in an era of increased mission diversification. In other words, in a multi-customer environment, if customers do not trust each other, they may perceive "risk" to their programs due to the presence of other missions, which can cause movement towards bureaucratic controls that essentially unravel the synergies (such as shared and mutually beneficial investment in large scale capabilities) that can be leveraged through a diverse customer base.

Perhaps most important to an effectively interdependent and cost-effective enterprise is the trust *between* the sites of the Complex. And finally, the trust *within* sites is crucial, such as the trust between upper management and workers and that between workers completing missions for different customers.

Impacts and Degradation

Figure 2 illustrates some key events over the last few decades that can be viewed through the lens of trust. While Figure 2 is not meant to be a comprehensive history and in some cases the "events" are not events, but rather studies and analyses that articulated the state of the Complex, a pattern emerges as one considers these "events" through the lens of trust. Indeed, the items generally fall into four main categories.

First, there is the category of safety and environmentally catalyzed issues and events such as accidents or leaking waste tanks. These kinds of breaches catalyzed the formation of entities like the Office of Environmental Management, Tiger Teams, and independent agencies like the Defense Nuclear Facilities Safety Board (DNFSB). Increased oversight is a common outcome when trust declines.

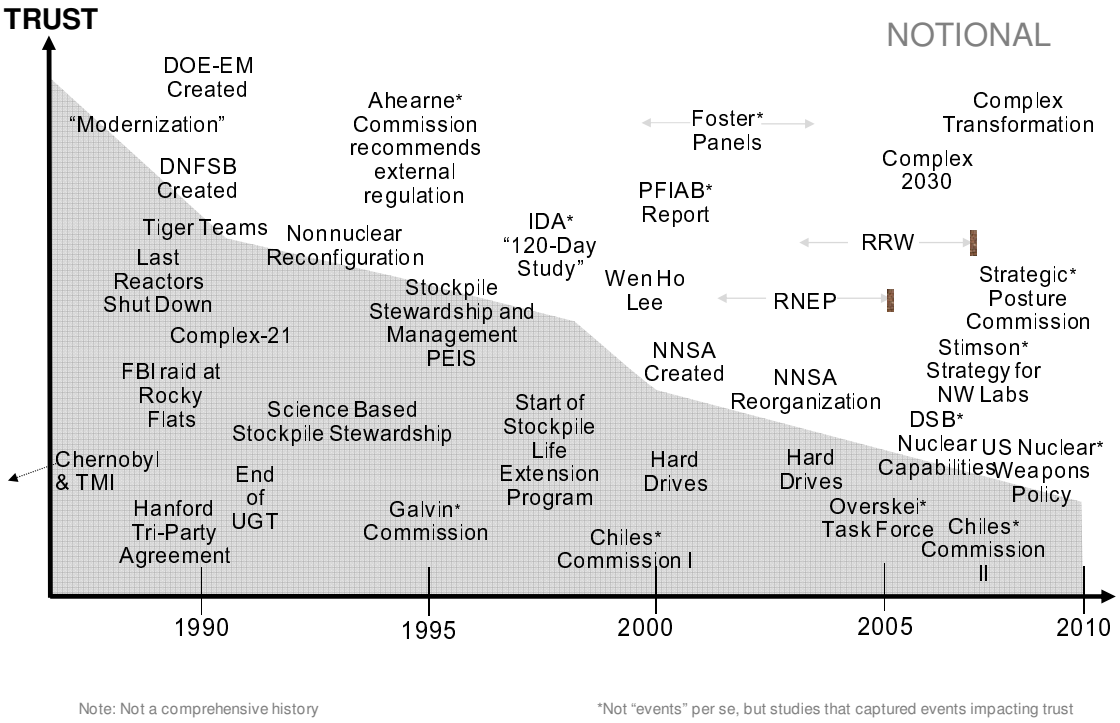

Figure 2: Events viewed through the lens of Trust

A second category can be broadly characterized as impacts on trust that come from "reconfiguration" efforts, such as initiatives aimed at reducing costs and footprint by consolidating sites or moving missions. There have been many such efforts over the last twenty years, such as Complex-21, Nonnuclear Reconfiguration, the Stockpile Stewardship and Management Programmatic Environmental Impact Statement (SSM PEIS), and more recently Complex 2030 and Complex Transformation.

The overriding lesson from all these efforts is that there is a difficult-to-quantify, but nonetheless critical risk to trust that is incurred with such efforts.[4] For example, when sites are considered for closure or missions for transfer, yet no action is ultimately taken, the process of these considerations alone can cause significant degradation of trust between stakeholders; when no action taken, this is a cost without benefits. In other words, trust is a collateral damage of the process, so such initiatives should be undertaken with great care up front to minimize this damage.

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[4] L.M. Sanders and L.J. Branstetter, *Change and the Nuclear Weapons Complex: Key Studies and Outcomes in the Final Decades of the 20th Century (U)*. SAND2005-3505, 2005.

The third category encompasses degradation of trust that can be generally thought of as management, bureaucracy, or politically-driven decisions affecting the labs, such as the abrupt cancellation of programs, the evolution and impact of compliance-driven initiatives on mission productivity, and the approach to managing risk. And finally, there is a fourth category of largely media-driven, sensationalistic events leading to negative headlines that have become all too familiar over the past decade. (This category is different from the first category, in that the substance of these types of events tends not to be proportional to the content and level of media coverage).

Circle of Influence vs. Circle of Concern

For this fourth category of sensationalistic, media-driven impacts in particular, there can be a tendency within the Complex to despair at the negative headlines. Figure 3 attempts to put some of these reactions into perspective. For example, if the square markers in the Figure represent a negative media event, (e.g. missing hard drives), it may be reflected in a drop in trust by Congress and the public, with little opportunity to regain that trust in the interim due to the "out of sight, out of mind" phenomenon; good behavior isn't generally considered newsworthy like bad behavior. But the reactions of other parts of the ecosystem, particularly that of the stewards, are generally more balanced in the face of these kinds of events.

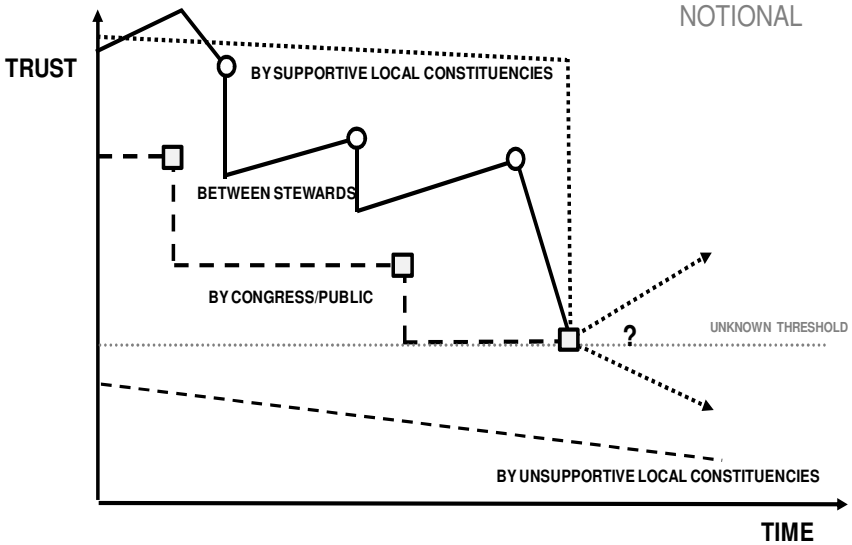

Figure 3: Potential Ecosystem Impacts

On the other hand, events that fall into the second and third categories, represented by the circles in Figure 3, can have profound impacts on trust in the upper left part of the ecosystem—i.e., between the stewards of the deterrent. These impacts are particularly troubling, because they are on the part of the ecosystem where rebuilding of trust is ongoing and is realistically possible. In other words, while our circle of concern over the decline of trust may extend to the entire ecosystem, our circle of influence to revitalize trust begins within and between the stewards. First and foremost, we must be worthy of trust. That is why revitalization must start with the stewards. As trust in this portion of the "ecosystem" is revitalized, our ability to impact trust in the other categories will broaden. Only as the stewards begin to speak with one voice, with common purpose and with the underlying foundation of national service, can the dynamics between the upper left and lower left right portion of the ecosystem begin to shift towards a more constructive dialogue and trust-based interaction.

Towards Revitalization

Break the Cycle of Miscommunication: Subtext Matters

For the "category two and three" events represented by the circles in Figure 3, the idea is not that these events can be summarily eliminated, but that the approach to, awareness of, and compensatory measures taken for such events can have meaningful impacts on reducing the degradation of trust as a collateral damage. That kind of work can only be done on a foundation of good communication, with specific attention paid to how messages that are sent are actually being heard.

Francis Fukuyama, in his book on trust, states that "trust is the expectation that arises within a community of regular, honest, and cooperative behavior, based on commonly shared norms."[5] Such a definition belies the importance of the prevailing culture in perceiving implicit messages that underlie literal communications, policies, or initiatives. In other words, what is heard, regardless of the intent, is shaped by the assumptions driven by the culture where the message is received.

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[5] F. Fukuyama, *Trust: the Social Virtues and the Creation of Prosperity*. New York: Free Press, 1995.

For example, W.E. Schneider in his book, *The Reengineering Alternative*, discusses the differences between a competence culture and a control culture. For the former, value is placed on individual autonomy, achievement and flexibility.[6] The clear focus is on capability, challenge, innovation, and performance. In contrast, a control culture values titles and rank and plans as *the* way to get and keep control. The clear focus is on policies, procedures, compliance, order, and predictability. For the Complex, this mismatch is captured in the observation of the Strategic Posture Commission that, "outside assessments have concluded that the heavily bureaucratic approach . . . is inconsistent with the effective operation of a research and development organization." [7]

To be clear, this discussion is not to imply that competence cultures don't have control over their operations, that control cultures attract less competent people, or that one culture is necessarily better than another, but rather to help us think about how messages sent from the frame of one culture can sound very different when they fall on the ears of another. The key point is that messages sent from the perspective of a control culture and received within a competence culture can, however implicitly or even accidentally, powerfully communicate a lack of trust, and this one of the most de-motivating messages that can be sent to capable, value-driven people. Revitalization of the U.S. nuclear complex and underlying competencies requires repair of this disconnect.

Break the Cycle of Bureaucracy: Purpose Matters

Jim Collins, in *Good to Great*, describes the downward cycle of events that captures the essence of the "category three" discussed above, as does the recent Strategic Posture Commission in their observation of "the tendency to respond to problems by imposing new rules that will 'guarantee' that the problem does not recur." [8,9] This cycle is represented in Figure 4. In essence, a series of rules are imposed on everyone to manage the small portion of "wrong people" in the mix, which drives away more of the right people and thus increases the proportion of wrong people, leading to more controls to manage the wrong people and so on.

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[6] W.E. Schneider, *The Reengineering Alternative*. New York: Irwin Professional Publishing, 1994.
[7] *America's Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States*. Washington D.C.: United States Institute of Peace Press, 2009.
[8] J. Collins, *Good to Great*. New York: HarperCollins, 2001.
[9] *America's Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States*, 2009

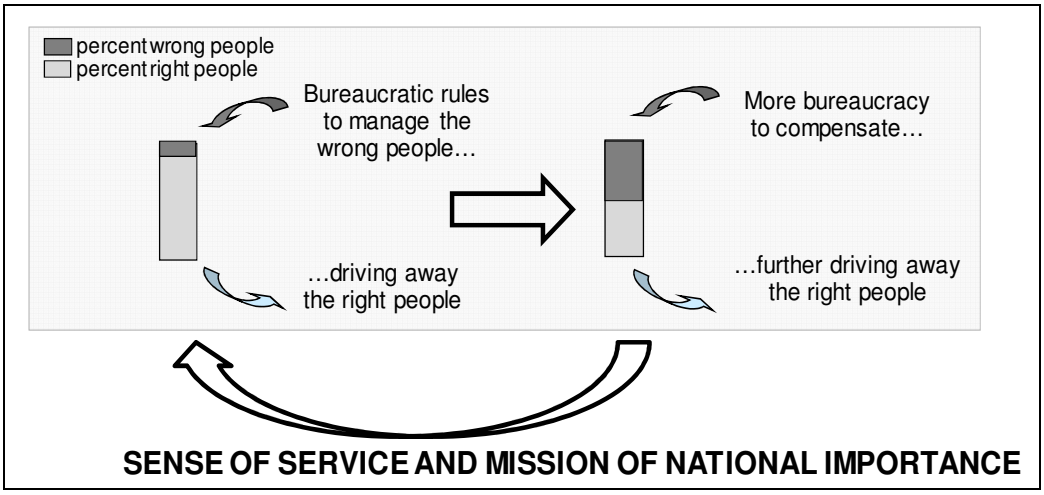

Figure 4: Getting—and Keeping—the Right People

Reversing this cycle is clearly vital to our future. The Chiles Commission of 1999 stressed the importance of acknowledging the difficulties inherent in being a part of the nuclear weapons enterprise – the secrecy imposed, the dangers and risks attendant, the limited opportunities for peer interaction and openness, the bureaucracy.[10] Note that all of these aspects tend to perpetuate the cycle in Figure 4. The critical counterbalance, the Chiles Commission concluded, is the sense of being "a public servant inspired by a sense of purpose and mission of national import."[11] Therein is the key force that can powerfully reverse the cycle.

Thus, elevating the sense of purpose and mission in the complex is not important merely as some kind of intellectual exercise. It is in fact vital to attracting and retaining the next generation of those who would gladly shoulder the difficulties the Chiles Commission articulated—for the very reason that they are inspired to be trusted to serve.

Align the Foundation: Governance Matters

As the Galvin Commission recognized back in 1995, fixing the governance is a critical step, one that has been recognized in several important recent reports, such as

[10] *Report of the Commission on Maintaining United States Nuclear Weapons Expertise*. Report to the Congress and Secretary of Energy, Pursuant to the National Defense Authorization Acts of 1997 and 1998, March 1999.
[11] Ibid.

that from the Strategic Posture Commission, the Independent Task Force on U.S. Nuclear Weapons Policy, and the Task Force on Leveraging the Scientific and Technological Capabilities of the NNSA National Laboratories for 21st Century National Security [12,13,14]

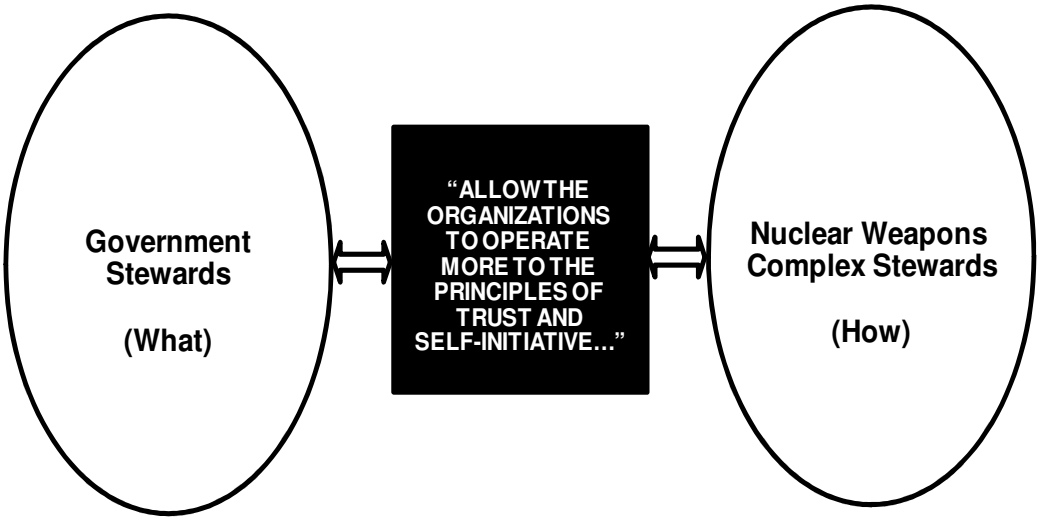

Figure 5: Trust and Governance

Figure 5 captures the essence of what the Galvin Commission and the Strategic Posture Commission concluded with respect to governance of the nuclear weapons complex. The Strategic Posture Commission observed that "a broad attitude is often cited as a contributing factor to excessive regulation: the failure…to distinguish between what to do (a government function) and how to do it (a contractor responsibility)."[15] The Galvin Commission noted that having trust as the foundation for the governance that operates in the space between the what and how is the key to truly exceptional results, and that there *is no other path*.

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[12] *America's Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States*, 2009.
[13] *U.S. Nuclear Weapons Policy*, Council on Foreign Relations Independent Task Force Report No. 62, 2009.
[14] *Leveraging Science for Security: A Strategy for the Nuclear Weapons Laboratories in the 21st Century*. The Henry L. Stimson Center Report No. 71, 2009.
[15] *America's Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States*, 2009

Conclusion

There are concrete steps we can take to break the existing cycles that contribute to the decline of trust. As stewards of the nuclear enterprise, we must learn from the many examples from the past on how trust can be broken and work within our circle of influence – in making or adapting to programmatic and organizational realignment decisions – to not perpetuate those mistakes in the future. We must exercise our responsibility to understand whether planned initiatives contribute to breaking or revitalizing trust—before they are rolled out. We must respond to our obligation to ask, and keep asking: How do we rebuild trust? How do we ensure we are worthy of it? How do we model the trustworthiness we'd like to engender? We must acknowledge the power of subtext and culture as we communicate. We must maintain constant vigilance in ensuring and communicating the higher purpose and mission of the deterrent and the importance of service in the national interest. And finally, we must fix the governance.