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HEADLINE: HEARING OF THE HOUSE ARMED SERVICES COMMITTEE
SUBJECT: UNITED STATES MILITARY REFORM
AFTER OPERATION DESERT STORM
CHAIRER BY: LES ASPIN (D-WI)

WITNESSES: GARY HART, FORMER SENATOR, COLORADO
JOHN LEHMAN, FORMER SECRETARY OF THE NAVY
JOHN BOYD, FORMER CHIEF OF DEVELOPMENT PLANS
AND ANALYSIS, USAF
DONALD HICKS, FORMER UNDERSECRETARY OF DEFENSE
FOR RESEARCH AND ENGINEERING
RAYBURN HOUSE OFFICE BUILDING
A.M. SESSION

BODY:

REP. ASPIN: The meeting will come to order. Today the Defense Policy Panel continues its hearings on what the Gulf war tells us about how to provide a defense that meets the real threats of the future, a defense that works.

Our focus this morning is on the status of the military reform debate. It has been a decade since the issue debuted in the Wall Street Journal Op Ed, written by then-Senator Gary Hart, who joins us today as a witness.

That article, the seminal article, I think, in the reform movement, identified the key challenges as reforming, "the very basis of the armed services, the way they make decisions," to "develop an ongoing process of change and adaptation which must characterize an effective military."

To achieve this, the early reformers contended change must center first on people, second on ideas, and third, on hardware. The early reformers believed our military officers should be warriors, leaders and strategists, not bureaucrats.

They criticized the Pentagon for misguided education, promotion, assignment and rotation policies, and for a bureaucracy they believed stifled innovation.

As for ideas, the reformers promoted the concept that the military should win wars by maneuver rather than by attrition. They believed that the military doctrine in effect at the time stressed overcoming an enemy's strengths rather than exploiting his weaknesses.

Finally, the early reformers argued that technology should increase innovation and effectiveness in weapons systems. Technology should render enemy strengths

obsolete rather than reinforce traditional ways of fighting them. Using a larger number

of less sophisticated weapons systems was also a much-discussed corollary.

Ten years have gone by since those arguments were first made. We have raided Libya, fought in Grenada, Panama, and Saudi Arabia. In this latest context, the performance of our troops was outstanding. Our military leadership developed and executed a plan to shape the battlefield so we could exploit Saddam Hussein's weaknesses, not play to his strengths.

We relied on maneuver and deception, and our weapons systems seemed to work in large part as advertised rather than as criticized.

This morning's hearing seeks to revisit the criticisms and recommendations of the early reformers and their opponents in light of Desert Storm. What does the war tell us? Did the reform movement have an impact on our victory in the Gulf? What are the lessons for our future force?

We welcome today as our witnesses a very, very distinguished panel. We have, first of all, Colonel John Boyd, who is the author of the Air Force fighter tactics manual and the inventor of energy maneuverability as a criterion of fighter design.

We have former Senator Gary Hart, who as I have already said, was the author of the seminal article on the military reform.

We have John Lehman, who's the former Secretary of the Navy, and we have Donald Hicks, the former Undersecretary of Defense for research and engineering.

Gentlemen, thank you for being here. Before we begin, let me call on Bill Dickinson for a few words.

REP. DICKINSON: Thank you, Mr. Chairman. I think that this series of hearings here that we are conducting on lessons learned, or lessons to be learned, is very helpful and beneficial and perhaps we should have done more of this in the past.

I'd like to welcome our panelists here today and we do look forward to what they say.

A quotation from a military analyst and theorist of a former era, a quote which begins a recent congressional research report, says, "Armies are more often ruined by dogmas springing from their former successes than by the skill of their opponents." This was Major General Fuller in November, 1914.

I think it's applicable today. Taken to heart, ladies and gentlemen, Fuller's advice means that we should be skeptical of all claims that Desert Storm proved anything permanently, and that we

ought to take the time and effort to challenge in detail any such claims. I think that's the thrust of what we're doing here today.

In short, no defense budget ought to be shaped solely on the gross generalizations of any great general or politician or analyst. I think it's fit and proper that we examine the effectiveness of weapons used, how they were employed, whether the prophets in the past have been right when they were pointing to the shortcomings, or whether others were saying this is the way to go.

In sum, that's what this panel is trying to do, to determine what did we do

right and what did we do wrong, and should we change anything in our way of doing business as we address this year's budget.

So thank you for your presence here and thank you, Mr. Chairman. I yield back.

REP. ASPIN: Thank you, Mr. Dickinson, and gentlemen, the floor is yours. I think we'll just take opening statements and let you say whatever you would like. I also ask unanimous consent that any material that you want to be put in the record will be put in the record.

But why don't we begin with Colonel Boyd, go to Senator Hart, John Lehman and Don Hicks. Colonel Boyd, the floor is yours, sir.

COL. BOYD: Thank you, Mr. Chairman. I want to thank you -- REP. ASPIN: The first thing is, be sure you pull the mikes close. This thing doesn't -- they don't work worth a damn. Pull the thing right up close to you.

REP. DICKINSON: Colonel, this is a low-tech committee.

COL. BOYD: Are you trying to tell me you've got a technology problem here?

REP. ASPIN: Let me tell you, it's always embarrassing. Go ahead.

COL. BOYD: Okay. I want to thank you, Chairman Aspin and colleagues, for inviting me to testify about a reform perspective on the Gulf war.

Naturally I cannot speak explicitly for the other reformers. We are not a monolith, but have different views that fit into a common theme. In this sense, what I have to say are my own views, but connected to that theme.

In this context, I would like to point out the features that make up the theme by returning to a presentation for the Congress on reforming the military that was drafted some nine or ten years ago.

Although some aspects of this presentation are outdated, certain key features are not and are still being used as a basis for describing what it takes for creating a winning military.

First of all, from a reform perspective, if we ask, "What does it take to win wars?" reformers believe that there are three basic elements, and in order of importance they are: people. Why? Because wars are fought by people, not weapons. They use weapons.

Strategy and tactics, because wars fought without innovative ideas become bloodbaths, winnable or not. Hardware, because weapons that don't work or can't be bought in adequate quantity will bring down even the best people and best ideas.

Now in looking at these three elements, we must keep in mind that the most important element in winning is to have military people that are better than the enemy. How is this accomplished? By three things. By attracting and promoting people who have the character, skill and initiative to succeed in combat.

Next, training. To hone combat skills and also build tactical imagination and initiative. And I might add that was critical in the Gulf war. Also, building the personal bond for unit cohesion, since cohesion keeps units from crumbling under combat stress.

Next, our military needs to be trained in innovative tactics and strategies that will lead to quick, decisive victories at minimum cost in American lives. This requires, first -- and this is crucial -- an understanding of conflict.

Conflict can be viewed as repeated cycles of observing, orienting, deciding and acting by both sides, and also, I might add, at all levels.

The adversary that can move through these cycles faster gains an inestimable advantage by disrupting his enemy's ability to respond effectively.

Now these create continuous and unpredictable change. Therefore, our tactics and strategy need to be based on the idea of adapting to and shaping this change faster than the enemy. Why? Because the confusion and disorder so generated permits us to win quickly at minimum cost in American lives.

Finally in terms of hardware, what counts is having a lot of it and making sure it works effectively in combat. More specifically, the hardware numbers that count are the weapons available to engage the enemy. Weapons in hangars and maintenance pits are a liability, certainly not an asset.

Now new hardware needs to be evaluated in terms of its effects upon our people and our tactics. Effective hardware helps

our people adapt to change and permits them to act, react, and move faster than the enemy. Any hardware that makes our military slow and predictable obviously is unsuitable.

Now with all these previous comments in mind, the lopsided victory in the Gulf seems to suggest that the American military has come a very long way. The brilliant strategy, the fast-paced operation and multiple thrust tactics impress everyone.

Of course, we need a more detailed look here to appreciate how all this played together. As I understand it, the military services are in the process of conducting such an examination. We will have to wait on whatever results they make available.

Even so, the magnitude of success suggests we must have been attracting and promoting at least some of the right people. Otherwise such strategy, operations and tactics would not have been produced. On the other hand, as I shall point out shortly, we still have problems in this area.

As to hardware, testimony already given suggests we had some great successes, also some disappointments. But we must look more deeply into the war before drawing any clear conclusions about hardware performance.

Now, not wishing to comment further on the strategy, operation and tactics, nor on the hardware until the previously discussed evaluations are made available, I will now focus on how well the military has responded to a couple of officers who helped make maneuver warfare a reality that in turn made possible this impressive Gulf military victory.

Specifically, I would like to bring your attention to two key officers who have had a major impact on the respective services in the conception and practice of maneuver warfare. Before getting into this story, let me explain why it is of crucial national importance.

To understand the fate of these two officers who introduced the new ideas that made a quick, relatively bloodless victory in the Gulf possible, first we need to understand that the difference throughout history between brilliantly performing armies and mediocre ones has always rested on a small handful of combat leaders.

First, we need to understand that throughout history the difference between brilliantly performing armies and mediocre ones has always rested on a small handful of combat leaders. Naturally, the military that manages to nurture such a tiny handful of brilliant, innovative officers to combat command achieves great results such as we just witnessed. On the other hand, a military suppresses said brilliant and unconventional young officers among them, who I might add tend to make life uncomfortable for seniors, is forced to grind out rigid, predictable battles with much blood and mountains of materiel.

Secondly, we need to understand there's a difference between physical courage in battle and the moral courage that is required to introduce and implement new ideas in military bureaucracies. If you haven't been there, you can't imagine the intense pressures and high career risks facing a young officer who, out of conscience, is trying to introduce unconventional new ideas. In my opinion, officers with physical courage are far more abundant than officers with the moral courage I have just described.

With these thoughts in mind, we can now return to the two officers I'm about to introduce you to. First, the Army.

Prior to 1982, the US Army's basic manual for war-fighting, FM100-5, emphasized an attrition scheme by firepower and frontal assaults against oncoming enemy thrusts. Even if such an unimaginative scheme could win, it would produce a high body count of our own soldiers. Needless to say, such a scheme doesn't represent an attractive proposition to the troops who are supposed to carry it out.

One of those troops, an officer named Huba Vostasega (ph) had the feeling such an approach just wouldn't do. He had the tenacity and insight to dig deep into combat history and military theory -- two unpopular and neglected ideas in the army of that era. Despite resistance, he was able to form a team to re-write 100-5 and, even more amazingly, he had the courage to completely overturn the tradition-bound 1976 version of 100-5. His 1982 version introduced an untraditional philosophy of maneuver warfare based upon an integrated effort of initiative, agility, and deep attack behind enemy lines. The Army refined and updated this manual in 1986 with no change in basic philosophy, thus showing that these new ideas had at least taken root.

Vostasega (ph) was also responsible for setting up the School for Advanced Military Studies and the Army's Command and General Staff College at Ft. Leavenworth, a second-year course for a very few of the college's best graduates. This school was specifically set up in 1983 to introduce and eventually diffuse the concept and practice of maneuver warfare throughout the Army. Apparently, the

Army was satisfied with Vostasega's (ph) courageous innovations. Today, he is a one-star general, highly respected and sought after by both superior officers and officers junior to him. And graduates of his school, known as "Jeddai knights," were heavily represented on General Schwarzkopf's operations planning staff.

For another officer, a marine who became interested in the concept and practice

of maneuver warfare, the story, I might add, is a bit different. More than three years before Vostasega's (ph) innovations, Mike Wiley (sp), a Marine officer, became concerned about the way Marines viewed the concept and practice associated with war. A highly respected company commander with two Vietnam combat tours behind him, he felt the Marines needed a new approach to war fighting. By the late 1970s, his dissatisfaction brought him to contact with the newly emerging ideas associated with maneuver warfare. He recognized that these ideas offered a way out of the high-casualty morass he personally experienced in Vietnam.

Shortly after absorbing these ideas, he began laying out his version of maneuver warfare by articles in the Marine Corps Gazette as well as by testing these ideas in the field and revising them based upon his own field experiences and tactical exercises. Out of this, he produced unconventional thinking memoranda of how maneuver warfare should be conducted at the tactical level. These ideas were eventually incorporated in Bill Lynn's (sp) highly regarded Maneuver Warfare Handbook. As his efforts became more and more visible, other officers, primarily junior officers, sought him out so they might learn his -- these new unconventional methods that were not yet part of the Marine Corps way of war-fighting.

Unsurprisingly, a number of higher-ranking officers tried to suppress his efforts by transferring him elsewhere, where his ideas would have far less impact or by placing officers above him who were unsympathetic to what he was trying to accomplish. This, I might add, was done several times. Even so, Mike Wiley's (sp) ideas did find acceptance among a few, I might add a very few, senior officers, including Major General Al Gray -- including then-Major General Al Gray. Eventually, after many frustrating years of trying to advance these unconventional ideas, the Marine Corps, under Commandant General Al Gray, made maneuver warfare Marine Corps doctrine.

In 1989, the Marine version of maneuver warfare was officially proclaimed in their new war-fighting manual, FMFM1. Colonel Wiley (sp) and his ideas had finally arrived. Or had they? For his untiring and courageous efforts, Colonel Wiley (sp) has been recently informed by a Marine board of officers that he must take an early retirement, eight months early. This would suggest there are some, maybe even many, senior Marine officers who would still like to retain the old attrition war-fighting mind set despite the use of Wiley's (sp) ideas, which contributed mightily to a relatively painless, extremely low-casualty military victory.

This raises the question: Why should we make such a fuss only over one colonel? First, because, if nothing is done about Colonel Wiley (sp), for at least the next four years, young officers in the Marine Corps will be inhibited from proposing important, perhaps crucial new ideas. Secondly, if nothing is done about Colonel Wiley and the people who forced him out, then the Marine Corps will be left in the hands of what I might add I would call "dinosaurs," who will undo the maneuver warfare ideas that worked so well for the Marines in the Gulf.

Let's face it. It's time to stop paying only lip service to the idea that people are the most important element in war-fighting. Colonel Wiley's (sp)

experience causes me to think that we haven't made much progress since World War II in finding and promoting brilliant, innovative, unconventional officers. In fact, my intuition would say we may even have taken a step backward in this area, and it may well go beyond just the Marine Corps.

Naturally, the military likes to treat the matter of officer selection and promotion as sacrosanct and as purely an internal military matter. On the other hand, if we really believe that people are of a much higher priority than hardware and budgets, then it is of overwhelming importance that the Congress in some way get involved in the issue of selection and promotion of people. Why? Because no amount of money can make for deficiencies in this area. I am prepared to comment on the kind of hearings Congress might hold and the possible actions that might serve to improve our track record in advancing these few gifted and unconventional officers.

Thank you, Mr. Chairman.

REP. ASPIN: Thank you, Colonel Boyd.

Senator Hart.

SEN. HART: Mr. Chairman, members of the committee, it's a great pleasure to be here, and I appreciate the opportunity to do so. As you well know, it's often much more difficult to learn from victory than from defeat. In defeat, questions are asked about what went wrong so that those mistakes will not be made in the future. But victory seldom creates the need to inquire as to its sources, and so I think these hearings take on unique importance, and this is especially true when we reflect that lessons learned from conflict are purchased not just with money, but with blood.

We have an obligation to those who died, to those who were wounded, and of course to all who served under conditions of considerable hardship to study the experience of combat carefully and thoroughly and honestly and thereby maximize the chances for success in the future and minimize the number of casualties that any future conflict may bring. And this is a moral obligation, but it's an obligation which is going to take a long time to fulfill.

Accurate battle histories require access to records on both sides. And today, only a few weeks after the cessation of hostilities, we're still accumulating and assessing data on the performance of our own personnel and weapons, let alone the opposition side. Some reports of fantastic weapons performance already seem highly inflated, if not grossly exaggerated.

Nevertheless, Mr. Chairman, some conclusions are obvious. We won. We won with very few casualties. And we won largely through maneuver warfare, a central theme as Colonel Boyd has said within the military reform movement. Based on this foundation, several lessons become apparent. First, the principles of military reform where they were adopted, have been adopted, have proved sound. Drawing on military history, military reformers have argued for two decades that, for winning in combat, as Colonel Boyd has said, people are most important, ideas are second, and weapons are third.

Although our weapons were clearly superior to those of the Iraqis, that was not the critical difference in the Gulf war. Our superiority in people and guiding

ideas and strategy, operational art, and tactics was much greater even than our superiority in weapons. Our superiority in people was obvious almost from the outset. For the most part, the Iraqis gave up rather than fight. When they did try to fight, they were inept. We were superior in people in every respect -- in morale, esprit, training, tactics, and techniques.

We enjoyed the same superiority in ideas. The Iraqis planned only for a static, head-on, massive "World War I-type" battle. When we did not fight the battle they expected, when we maneuvered around them and struck from the West, they were unable to adjust. They had not thought through what other options we might pursue and how they might counter. Arguably, we were so superior in people and ideas that, if we had had their weapons and they ours, the outcome would have remained the same. They were unable to use effectively the weapons they had, and they would have been unable to use our weapons if they had been given them. But our people would have figured out to use their weapons effectively.

The Gulf conflict confirms military reformers' priorities: first, people; second, ideas; and only third, weaponry. This is an extremely important lesson, Mr. Chairman, as you well know, because here in Washington, both in Congress and in the Pentagon, too often in the past hardware has been all that counts -- hardware and money. People are placed a very distant second, and ideas such as doctrine, strategy, tactics are given virtually no attention at all.

The second lesson is that there are -- secondly, there are specific lessons about the primacy of people to military success from this Persian Gulf experience. As reformers have argued and as Colonel Boyd has mentioned, unit cohesion is absolutely critical.

Normally, our military personnel system inhibits unit cohesion by moving individual people around much too frequently. In the Gulf, to our great benefit, our massive deployments brought that traditional personnel system to a halt. Unit cohesion had a period of anywhere from two to five months, depending on the unit, to form.

Now, that's not very long, but it was long enough under circumstances of social isolation. The small unit was everything -- home and family -- so that cohesion developed very rapidly. That cohesion was one of the main reasons our troops fought so well together.

As reformers have also argued, a lot of realistic live-fire training is important. After deployment, many units in the Gulf received much more live-fire training than they would have usually. There was more ammunition to shoot, including expensive TOW missile rounds. As with unit cohesion, that training was one of the reasons that our people did so well. The real question is whether these important lessons will now lead to different peace-time policies, less turbulent individual rotation from unit to unit and more realistic training financed by reductions in research, development, and procurement.

The importance of good military education is the third lesson about people. A major force behind the development of our excellent maneuver warfare campaign plan, as Colonel Boyd has mentioned, were the graduates of the Army's School of

Advanced Military Studies at Ft. Leavenworth. This school differs from virtually all of our other military institutions, schools, and colleges in that it focuses on developing military judgment largely through study of military history and exercises in making military decisions. By contrast, the focus still at most of our schools remains too much on rote learning of processes, procedures, and formats.

Graduates of the Advanced Military School under the direction, of course, of General Schwarzkopf were often leaders in bringing operational art into play in the Persian Gulf. This also raises the question of whether now we will shift the focus in our other schools to the development of military judgment and operational skills. In this connection, Congressman Ike Skelton's subcommittee deserves, I think, a great deal of credit for its attention to the issues of military education.

Third, Mr. Chairman, maneuver warfare, an idea which has been at the very heart of the military reform movement from the beginning, worked in the Persian Gulf. Reformers knew it would work because it's worked throughout history. The Persian Gulf campaign plan, of course, was a classic plan of encirclement rather than frontal assault. This is the operational level of war. It represents a concept that reformers inside as well as outside the services introduced in the 1970s. It was first made part, as Colonel Boyd has said, of military -- American military doctrine in the 1982 edition of the Army's Operations Field Manual. That manual itself represents military reform doctrine put forward by Army officers as well as civilian reformers.

In this respect, Mr. Chairman, I think this is an important point. Military reform is not, as some have argued, simply a civilian phenomenon. From the outset, many reformers have been military officers, especially in the Army and the Marine Corps. Reformers on the inside have been much more important than civilians on the outside. These uniformed reformers deserve the bulk of the credit for the reforms that we have adopted, particularly the reforms and ideas such as doctrine, tactics, and operational art that paid off so well in the Gulf.

Maneuver war was employed at the tactical level as well. The operations officer for the 1st Marine Division, Lieutenant Colonel Ray Cole, is quoted as saying this: "Everything was geared toward the mind of the enemy commander and the will of his men to fight." This is classic reform theory. Further Colonel Cole said, "Our commander wanted speed and major force movement behind the enemy to make him quit. Going through as fast as we did made every action they took irrelevant, especially when we were behind them already. If you go where he, the enemy, isn't and then get behind him, his morale is beaten." And that, of course, is exactly what happened.

Commander of the 1st Marine Division, General Mike Myatt, used mission orders. This is also central to reform theory. He told subordinate commanders the result he wanted and gave them maximum latitude in deciding how to accomplish the mission. Boundary or terrain objectives which worked to slow everyone down and which are control devices typical of traditional tactics were daringly

minimized, and it worked. Much of the credit for the Marine's outstanding performance, of course, as Colonel Boyd has said, goes to their Commandant, General Al Gray. He, in fact, adopted maneuver warfare as doctrine for the Corps and has been personally active in seeing it implemented.

Given the proven success of reform doctrine, it is in the interest of reform elements of Congress to oversee future Marine Corps leadership and ensure its continuing commitment to these basic principles. From a military perspective, the success of maneuver is the most important lesson of the Gulf war. The use of maneuver in that conflict marks a major, even an historic turning point in American military action, turning away from methodical battle focused on firepower and attrition to focus on speed and maneuver.

But this is only the beginning. This question deserves the continuing attention of this committee to encourage ongoing reforms in military thinking, education, and operational doctrine. The Gulf theater turned out happily to be an instance of relatively easy success against a largely passive enemy. We simply cannot afford now to let traditionalist thinking take us back to old military ideas.

Fourth, Mr. Chairman, contrary to persistent, almost demented mischaracterization of military reform theory, the Persian Gulf war did not prove that high-tech is better than low-tech weaponry. At no time during my more than decade-long involvement with the military reform movement has it ever been argued that technology per se, including high technology, was an evil. The military reform movement has argued that our technological advantage should be used to produce larger number of simpler weapons that work in combat conditions, that technological sophistication was not an end in itself, and that the cost of super-technology should not be permitted to drive down the overall numbers of weapons available.

The American people, including the defense establishment, should be cautious about drawing sweeping conclusory (sic) judgments about a philosophy of weapons procurement based on existing data from the Gulf war. At the present, we are dealing almost wholly with claims. History says that claims, even honest ones, are almost always greatly inflated. Until there's access to the records on both sides, claims that this or that weapon was "x" percent effective are merely that -- claims. Also, in part because of maneuver warfare, there was little prolonged fighting. That limits what can be learned about weapons performance over time.

For example, the Bradley Infantry Fighting Vehicle did not prove catastrophically unsurvivable as some, including myself, had feared. But, on the other hand, only a handful of Bradleys were hit, and how the Bradley would survive in a conflict where the enemy shot back and shot accurately this war cannot tell us.

From what we know now, and that is still very limited, one weapon that does seem to have worked well as the Air Force's A-10 aircraft. Interestingly, this has been a military reform weapon from the outset. Reform thinker Pierre Sprey, whom this committee heard from recently, played a major role in the design and testing of the A-10. And that airplane reflects a reform principle because it

used combat history as a basis for achieving simplicity and low cost and for weapons design and testing that is tough and thorough and that duplicates as much as possible actual combat conditions.

Finally, on the issue of equipment, we must again remember the difference in people and ideas. When I was in the Senate, for example, we were told we needed the M-1 tank because the M-60 could not take out the T-72s. On that point, General Myatt of the 1st Marine Division said, "We defeated those T-72s with our M-60s and only lost two tanks with no fatalities, and those were taken out by action of mines. It was just a matter of our people knowing how to use their equipment and fighting smart."

In conclusion, Mr. Chairman, for almost 20 years, military reformers have argued that if the American armed forces adopted maneuver warfare as doctrine, educated officers in military judgment and operational art, develop cohesive units and gave them plenty of proper training under realistic battlefield conditions, we could win wars. In the Persian Gulf, we did those things or benefited from having done them earlier, and we won decisively. Thank you very much.

REP. ASPIN: Senator Hart, thank you very much. Mr. Secretary Lehman.

MR. LEHMAN: Thank you, Mr. Chairman.

REP. ASPIN: Put the mike very close to you, Secretary.

MR. LEHMAN: It's a pleasure to be back again and a pleasure to be using your microphones again, which I saw here first 20 years ago.

I -- I must say I totally agree with the priorities that -- that Colonel Boyd -- Boyd and Senator Hart laid out in what the real issues that should be addressed and were addressed during the '80s and debated in this room quite a bit. First, people -- people, the quality of people, how do we build a force in all the services and hold on to the kind of innovative and quality people from top to bottom after the experiences we went through in the '70s. I think that, certainly, the experiences of the last -- the last year leave no doubt that the all-volunteer force was a major success -- is a major success.

Ten years ago, I was much a skeptic. I did not think the all-volunteer force would -- would work, and now I'm a true believer. I think it certainly validates the concept of using an all-volunteer force for the long term in peace and war as the basis to build our -- our armed forces.

The Reagan administration put a top priority on funding the increases that were really initiated by this committee and the Senate committees before the Reagan administration to raise pay, to raise the quality of life, to raise the training money, and certainly that paid off. First, see that you've got the right people, pay them well, hold on to them, train them well, and then see what you could do with equipment and -- and modernization.

The second priority was -- and should be -- the tactics and training -- the ideas, the intellectual foundations -- and then how you apply them. One of the unsung high-tech accomplishments of this war really was the new generation of high-tech training that characterized the last eight or nine years in all the military services. High-tech weapons are the third priority, the hardware that you provide, and certainly that is a necessary part of it. But if you can't tie

it together and teach people -- these good people how to use it, then it's not going to work.

The Air Force Nellis Test Range, the Army's Fort Irwin, the Navy's Strike Warfare Training Range, the Marines 29 Palms and -- and Yuma, Arizona ranges, for the first time, brought together the highest level of technology, computer hardware and software and the funding that this committee provided to bring in the real threat radars, the real weapon systems, the real environment, the real jammers, forcing the -- the training into a realistic regime. So that every air crew, every tank crew that fought over there had been through very similar kinds of circumstances in real time, realistic training where there was an empirical base of how they actually were performing instead of the first-to-the-blackboard approach that characterized the pre-high-tech approach to training. Every single combat commander out there will tell you that those forces that went through Fort Irwin, Twenty-nine Palms, Strike, Yu (ph) and Motts (ph) training found the combat actually less demanding than what they were put through. This was all made possible by -- by high tech.

Some of the successes -- well, let's talk about the debates on those three issues that characterized the '80s. There really was a debate -- perhaps over-polarized at times, but that's a useful socratic method to get out what the real issues are. There was a strong debate about whether -- and still is -- whether we should go back to a draft, whether we should go to universal service. I think that the record of the military the last 10 years gives the wind to the all-volunteer advocates.

A subset of that is: What about the role of the reserves? There was a great debate. The more traditionalist said the reserves cannot really be expected to be combat-ready and carry a peacetime load. They're necessary for total war mobilization, but can't be available in short of that.

I think Desert Storm demonstrated that all of the services had built reserve capabilities in the '80s that weren't there before that performed brilliantly in the war. The Marines assault into Kuwait was led by a weekend warrior unit of reserves and with M-60 tanks. The Army had specialists and teams at every level. There was too much publicity, I think, given to those units that were not

given adequate training beforehand, not given access to Fort Irwin and the other ranges as the Marines units were, who did not perform well. And so the traditionalists are saying, "Well, see that shows that we can't depend too much on the reserves." I think the opposite is the correct lesson.

The second issue of tactics and training -- I think that -- that Senator Hart deserves a very large bouquet because while reformers have existed and the debate between maneuver and positional warfare advocates goes back for 2,000 years, nevertheless, until Senator Hart took up the issue at the beginning of this decade, there -- there were no high visibility spokesman who could articulate and keep at the top of the political agenda the issue of -- and all of its subsets and all of the services between innovative maneuver war or other terms of art that have been used, like competitive strategies. And Senator Hart, I think, was able to bring this into a major focus so that advocates

within each of the services were able to get changes made.

The enemy of -- of that innovation -- when you have good people who come up with good ideas and can develop them in real training ranges, as we've -- we've built, is bureaucracy and layering and rigid promotion practices. There, I think the -- the record of the '80s is very mixed. On the one hand, we have, through the various legislative moves and internal moves as a result of the -- the lessons learned -- the Long Commission and so forth -- we've removed a lot of the many layers of chains of command and the parallel chains of command that obviously prevented the -- the application of common sense to -- to military strategy.

But on the other hand, we've created a lot of new bureaucracy. The bureaucracy, according to the latest Congressional Research Service -- the Defense bureaucracy in the Washington area is now up to 130,000 bureaucrats. That's -- that is an enemy to the continued success of the new innovative thinking. And I think that the promotion systems have, if anything, returned to a more rigid don't-buck-the-system kind of criterion and with less civilian role from Congress and the Executive Branch in setting promotion criteria and -- and selection. So I think the record is mixed.

REP. ASPIN: And where is the 130,000? What -- what number -- where does that -- what does that number refer to?

MR. LEHMAN: The staffs in the Washington area.

REP. ASPIN: Okay.

MR. LEHMAN: I'll be happy to provide that for the record.

REP. ASPIN: No, no. But it's -- essentially, what you're talking about is -- is military staffs --

MR. LEHMAN: Military and civilian, mainly civilian.

REP. ASPIN: And civilian.

MR. LEHMAN: Yes. The Defense agencies, the different commands, the service bureaucracies, the OSD bureaucracy and so forth.

We've -- compared to a reasonably run corporation, there is a grotesque top heavy staff bureaucracy in our -- our military setup, and that -- that's something that I've always felt needs to be looked at.

The final debate of the '80s was -- was the -- the high tech versus low tech. This took many variations, and as usually, there were kind of simplistic and extreme views advocated on -- on both sides or portrayed, particularly in the press. But here again, I think it's possible to make some generalizations. The Reagan administration, against very strong critical comment in the press and many in Congress, had an unapologetic emphasis on the high end, on the high tech: use high tech to compensate for the superiority and numbers that other nations will have. No, it's not the right role for us to build MiG 21s instead of F-15s and F-14s. We should pay the extra to have higher tech weapons, to be able to compensate for the lack of -- of numbers.

Certainly, we need low-tech weapons as well. As a strong advocate of battleships and -- and sealift ships, I've certainly not been loath to support low tech. You need a mix. But the fact is high tech -- the emphasis on high tech -- to use high tech to make all of these new innovative strategies of

maneuver work was validated by Desert Storm. The weapon systems worked. The very high-tech, very expensive training ranges produced the right strategies and tactics that worked and made our deterrent usable and makes it more usable in deterring in the future because we can -- we have demonstrated that by using very high-tech command and control, very high-tech training, high-tech precision weapons, high capability weapon systems, we can defeat huge armies of totalitarian regimes that can have no compunction about provided cannon fodder. We cannot take attrition. We cannot fight wars of attrition. We can compensate by using maneuver strategy, enlighten people in high tech to continue an affordable military in the future.

One dimension of high tech, before I close, that -- that I think had, again, gone under-commented is the night. We own the night. It was the ability to attack at night when all of the rest of the world's defenses are at 10 percent of what they are in daytime that gave us this huge immediate impact and edge. Using the high-tech F-111, using the high-tech A-6, using the high-tech Tornados, the high-tech Tomahawks, the high-tech night vision gear that doubled the price of the M-1 tank compared to its -- its predecessor, the high-tech Apache, yes, they're very expensive.

Yes, you can buy five MiG-21s for every F-15E. But that gives you the night edge, which is all important, and that's a high-tech edge. So we need to continue that in the future.

The three lessons I would -- I would highlight -- that I think the administration is going in the wrong direction are -- first in -- in the reserves. The administration's budget, as I read in the papers, is -- is reducing the reserves and reducing the dependents on it relative to the active force, which I think is a huge mistake. If we're going to keep a large enough force structure in a budget that's being reduced, more reserves should be used to cadre more active force units and keep them in being and -- and equipment, not fewer. I think the administration is definitely going in the wrong direction.

In naval aviation, I have never seen naval aviation in such a catastrophic state of disarray. The administration, I think, has flown in the face of every lesson that should be learned from Desert Storm. They have canceled the upgrades. They've canceled the A-6G. They've canceled the A-6F. They've canceled the V-22. They've canceled the A-12. They've canceled the F-14D. They've canceled the F-14 quick strike. Instead, they are telling the Navy: buy more of the low-tech day fighters, the F-18s. Five years from now, 10 years from now, we are going to have half the naval aviation capability we have because of this "Keystone Cops" approach to naval aviation that the administration has taken.

The other big lesson learned that I think is being ignored by the administration is sealift. Obviously, as we withdraw from a garrison force in Europe and have -- go to more deployable force, we need more sealift. The Reagan administration did a lot of innovation in the beginning of this decade to break away from the traditionalist way of procuring ships. The TAKXs that were -- that brought that first force there in the first week were budgeted in 1981

-- if you go back to your records -- for \$400 million a copy, to build one a year through the traditional bureaucratic method of building sealift ships. We still wouldn't have them in force if we had followed that. Instead, we threw it out and went to commercial specs and put it out to bid -- competition to commercial specs, allowing ships to be converted, if they fit the bill, and as a result, the average ship return cost was under 150 million [dollars], and we did it on a charter basis that saved the taxpayer an enormous amount of money.

That's what we need to do now. We need more fast sealift ships of a 20 -- a 24-knot, low speed, diesel propulsion that can carry at least two additional army divisions. We need more prepositioning ships, and we need more break-bulkers (ph), row-rows (ph) and container ships to -- to do the day-to-day logistics needed to go anywhere. Ninety-six percent of the sealift that was used was necessary to keep that Army and that Air Force operational out there, and anyplace we put land forces ashore, we are going to have to continue that everyday, day in and day out. We need more sealift, but there's not enough money in the world to buy enough sealift the way the bureaucratic system for buying ships is set up today. I think we need a new and innovative return to commercial procurement and conversation, especially, of sealift ships, so that we can learn the right lesson before it's forgot.

Thank you, Mr. Chairman.

REP. ASPIN: Thank you, Secretary Lehman. Secretary Hicks.

MR. HICKS: Thank you, Mr. Chairman, gentlemen. It's a pleasure to be with you today, and I'd like to make a brief opening statement for the record. I'd be happy to answer the questions. And I'd like to say, Mr. Chairman, I thank you for being the -- cleanup of such a great crew here. I mean, it's a very easy job.

I have to say I agree with most of the things I heard. We are all for leadership, training, good reserves. It's clear that our training was incredibly important in this whole situation. I would say that General MacArthur would be quite startled to hear that maneuver warfare was invented in 1980, since I was in World War II and remembered doing -- having those same kinds of discussions and, in fact, being involved in some of them. And as far as the A-10 is concerned, you know, about two-thirds of the kills made by the A-10 were made by Maverick missiles, which are not exactly low tech. So we have to be careful when we study this thing that we separate out what the real from the imaginary.

Now, I'm -- I can agree with all these things said. But since you've asked me to focus on the high-technology aspect of this, I -- I'll have a somewhat different approach.

I believe that our success in that operation has shown that the combination of precision-guided weapons and stealthy aircraft, along with all of the other high-tech intelligence, reconnaissance and strike assets really offer a whole new approach to combat in the future. Stealth, PGMs and other high-tech systems let us accomplish our strategic and tactical aims far more effectively with higher confidence and lower cost, both in lives and in dollars, than would otherwise have been possible. And the success of these technologies points the

way on important programmatic decisions in our acquisition for future systems.

And I have reviewed the testimony offered to this panel last week on the impact of Desert Storm. I must say I strongly endorse Bill Perry's assessments that revolutionary military technologies, combined with combat support systems, were a force multiplied that played a crucial role in our victory.

I also agree that our higher quality of leadership, training, manpower and CQI (ph) contributed in important ways and, certainly, don't take away from that.

It should be remembered, however, that other countries are quite capable through effort of achieving well-led and trained forces and even fielding fairly complex CQI. The one thing they can't expect to achieve any time soon is the degree of sophistication of our high-technology weapons. These weapons were the real key to our success in the Gulf.

MR. HICKS: In recent weeks critics have begun to question -- you've heard some of it this morning -- the role high technology played in the coalition victory.

In testimony before this panel last week, Pierre Sprey downplayed both the role of technology and the effectiveness of specific systems.

He and other critics would have us believe that our high technology wouldn't have had as big an impact if we'd been pitted against a more sophisticated or determined adversary. For instance, the North Vietnamese.

For these critics, stealth and precision weapons represent an unnecessary and unjustifiably expensive military capability. I strongly disagree with this revisionist assessment. Those of us who have been working on stealth and smart weapons all along, for years, 20 years, see the issue far differently.

For us, Desert Storm has confirmed what we've already learned through the development and testing of these systems, namely that these technologies work. So even if the quality of our adversary had been much higher, these systems would have performed well.

In fact, I believe it was precisely the great performance of our high technology weaponry that deprived the enemy troops of the will to fight.

In the remainder of my statement I'll focus first on how high-tech systems change the way we wage war, and then I'll discuss the future programmatic implications of the war for these technologies.

The increased role of air power in the war, which I think we all realized was enormously important, was attributable in large measure to stealth and PGMs. Although the F-117s flew only about one to two per cent of the total aircraft sorties in the war, they damaged half of all the picked strategic targets.

Hitting these strategic targets early in the war, intensively like that, set the tone for the rest of the campaign. Stealth sophisticated guidance and navigation systems and PGMs allowed us to destroy targets with great precision and very high confidence.

This means that we used less ordnance more effectively to hit those critical targets than ever before. These two qualities in turn combined to sap the morale of the Iraqi troops, who saw the ability of our forces to defeat critical assets in a very short time.

Using stealth and PGMs, we hit both the Baath Party headquarters and Saddam's palace in extremely heavily defended

areas. Our ability to hit those targets with such accuracy sent a clear political signal to the Iraqi leadership that we could attack them with impunity.

On the operational level, the combination of stealth and PGMs tremendously simplified the process of planning and executing the air campaign, and I've talked to people involved at that place where the planning was going on.

They made it possible to attack highly defended military functions with high confidence. Many of these key strategic targets were in the Baghdad area. They included leadership, command and control, intelligence, communication nodes, airfields and others.

The confidence that the F-117 and Tomahawk could address all targets of concern in priority order simplified the prewar planning phases, as well as the restrike planning. Using stealth and PGMs allowed us to achieve near-simultaneous shock to the enemy's whole military nervous system, and to deny a gradual recovery.

In the past -- and this is where a major change in our air tactics was -- we've had to roll back defenses and attack successive geographic areas of enemy territory. With stealth and PGMs we planned and executed attacks against entire political, military functions over all of Iraq and Kuwait, almost simultaneously.

Using stealth and PGMs meant we had to worry far less about confirming bomb damage after the strike. We knew that stealth aircraft could penetrate to the target with very low likelihood of attrition.

Previously we had to plan for attrition of aircraft carrying weapons to target and compensate for it. Damage to targets could not be guaranteed. We had to plan follow-up strikes and put additional aircraft at risk to assure that we could inflict the necessary damage.

With stealth, the arrival and hit probabilities for a given target were nearly perfect.

Stealth and PGMs help minimize US casualties, despite what you heard last week. With stealth, few or no support aircraft were required to conduct strike missions, putting fewer US personnel at risk. And those personnel actually conducting the strike missions were at far less risk because their aircraft were untrackable by enemy radar-guided air defenses.

PGMs let us bomb from higher altitudes, above the triple A level, while still retaining high accuracy. This helped us accomplish our war aims with far lower loss rates.

Stealth and PGMs allowed us to minimize civilian casualties. The imperatives of war dictated that we hit key targets in heavily populated areas. Thanks to stealth, we did it far more accurately, with far fewer civilian casualties than would otherwise have been possible.

The F-117s could operate undisturbed at altitudes of above triple A defenses, allowing them to approach their targets on attack headings which helped reduce collateral civilian damage from their weapons.

The Gulf war showed that stealth technology was a bargain. According to Brigadier General Buster Glosson, who was in charge of putting together the daily air tasking order, the cost of a strike package with conventional aircraft

and all their support would be at least 10 times the cost of using stealth aircraft against heavily defended targets.

In congressional testimony, Air Force Secretary Rice has also shown how stealth aircraft significantly cut operational costs by reducing support requirements.

I'd like to second Secretary Lehman and say that there are a couple of other technologies that were greatly important in our victory. First, night vision was critical to our forces. Lantern and Flares let us operate at night, removing the ability of the enemy to reposition forces unmolested under the cover of darkness.

Night vision capability allowed the Apache helicopter to attack Iraqi early warning radars in the campaign's earlier phase. Night vision capabilities in our tanks let us target and destroy Iraqi tanks before they knew we even were in the area.

Another area where revolutionary technology gave us the edge was in intelligence and reconnaissance. While the Iraqis were blind to our movements, we had comprehensive knowledge of their movements thanks to JSTARS, unmanned vehicles, and various other intelligence assets.

The great performance of high technology systems has some important programmatic implications. The Gulf war offered a glimpse of what's possible when we have weapons which hit their targets most of the time. Combining that with stealth gives us a synergy that assures us effective capability in both the near and far terms.

Buying PGMs now allows us to get maximum leverage from our existing assets in the near term. We have seen that aircraft using PGMs perform basically as intended. The F-117 was a star in terms of the percentage of targets hit and damaged. F-111s, Tornados, and Navy A-6s were also highly successful in using laser-guided munitions.

Our F-16s were by and large not equipped with PGMs and their performance really suffered as a result. These aircraft are smart in the sense that they have a superior guidance and control to drop dumb bombs with great accuracy. Unfortunately, they can only achieve this accuracy at fairly low altitudes in benign threat environments.

Because of all the Iraqi triple A, the F-16s could not go alone to deliver dumb ordnance as they were originally intended. I might add that those F-16s that had Lantern pods performed extremely well.

It is very important to note that the F-117s success in Desert Storm depended on some critical factors. One, we had sufficient time, both to get the F-117 force in place and to plan for its use. And two, the Iraqis' air defenses were highly centralized and vulnerable to shut-down.

In future contingencies, we may have to respond in only days and we may face far more robust air defenses. In such contingencies, a long-range bomber would offer the only means for shutting down an enemy's air power and defenses early in a contingency so that the required build-up of friendly forces in the area could be accomplished at low risk.

To avoid unacceptable attrition, this first-phase strike would have to be done with stealthy aircraft. I believe the quantum leap in capability offered by

long-range stealthy strike aircraft could yield a powerful conventional deterrent to aggression in distant areas.

A long-range stealthy strike capability would have allowed us to go in during the early phase of the Iraqi aggression and hit a few critical targets. This might, although knowing Saddam Hussein I doubt it, have deterred further aggression. With a rational leader, it very well could have.

Stealth also provides tremendous advantages in air-to-air combat in naval strike missions. It is very important, in my mind, that the Navy's AX program maintain the stealthy specifications of the A-12 or better, and I hear disquieting words about a compromise in that situation.

In the coming years we have options to develop, deploy and maintain a combination of air forces with various mixes of platforms and munitions. The proliferation of sophisticated air defenses around the world means we'll likely require some fairly sophisticated ordnance and delivery systems to be military effective and to keep loss rates at a low level.

A mix of stealthy aircraft of various ranges and payloads should be part of the total package.

In summary, Mr. Chairman, I believe the combination of stealth and precision munitions, and much of the other sophisticated military equipment we deployed to the Gulf proved its worth and has wrought a fundamental change in the way the military does business at all levels.

In a time when we need to get maximum value for scarce resources, we should continue that trend.

Mr. Chairman, that concludes my prepared remarks, and I'll be glad to take questions.

REP. ASPIN: Thank you very much, Don, and thank all of you. Let me ask, first of all, if anybody would like to have some comments on anything that they've heard from some of the other witnesses before we go into the general questions.

Would anybody like to comment on anything further? If not, let's start with the questions.

COL BOYD: I have one.

REP. ASPIN: Yes, Colonel Boyd. Pull the mike close.

COL. BOYD: I would like to make one comment. Many of you people probably saw General Schwarzkopf's interview -- I mean, interview of General Schwarzkopf by David Frost. And there was -- it was an interesting interview and he made one comment which seemed to disagree with what Dr. Hicks had to say, that if you had switched the equipment, what would the result have been. And he said, "There would have been no difference."

So I myself have been deeply involved in designing, conceptually as well as functionally, high tech hardware in the past. And I don't think you want to push down what these people and the ideas relative to strategy and tactics and how well they get you there.

Now, the reformers which have been criticized in the past, that they were against high tech, that's not true. And in some cases we'll go for it and in some cases they won't.

And I noticed in Dr. Hicks' testimony, when he was elaborating the A-117 -- and

you notice I call it the A-117. The Air Force still hasn't figured out it's not a fighter. It's an attack airplane, and maybe you people over here can get the right designator in there.

The Air Force somehow can't get the damn right designator in there. So maybe we might do something about that. And that's low-tech, that designator.

But in any case, the point I do want to make out, Dr. Hicks did leave out the superlative performance of the A-10. Some of you people are aware, and probably many of you people are aware of the fact that in terms of the A-10, General Horner, Lieutenant General Horner made the comment that it really saved his rear end in that campaign, and that wasn't exactly a high-tech piece of equipment.

And also they were flying at night. They were also flying not just close support missions. They were doing every mission aside from the close support for which it was designed.

So you just don't want to trash low tech. You're going to have to get a mixture of it and you're going to have to understand. Because if you go for high tech and only high tech, you're not going to have much. I'll tell you that right now.

This stuff really costs, so you really want to look at it very critically, determine where you need it, where the payoffs are, and go for it. When you don't need it, stay away from it because you aren't going to have much.

And all you have to do is work over in that five-sided building year after year and find out how they come in with one price and then you pay another price and then you people over here have to scratch your heads trying to figure out how we can put all this together.

So the reformers have never been against high tech. We've been for it.

Let me give you a good example of what happened. I want to give you one good example in my particular career where this took place. When I was involved in the laying out the design and the trade-offs associated with the FX, which became the F-15, which people like the performance over there, at the time I came in on that thing, they had this so-called what I call a 60,000 pound turkey.

The damned thing had variable-sweep wings, it had an engine in there that I'm not sure the airplane could have taken off very well. It had about .75 thrust-to-weight ratio, and as I'll point out for the uninitiated, it really didn't have sufficient thrust to be a good air-to-air fighter.

Well, when we got into it and we began to see all these goodies, the bells and whistles that all the labs and all the industry wanted to lay on it, it didn't make any sense.

So as we pruned it on down, we got rid of the variable sweep, and you'll notice we don't have very many new airplanes that are variable-sweep today, and I don't want to go into that story. And that was so-called high tech that failed.

Another thing they wanted in there is the so-called, what I call the talking inlets that you put on an airplane. These are the variable geometry inlets that allow you to go 2.5, Mach 3, and et cetera.

Well, it turns out they had these inlets on the airplane and as it turns out,

what it does, you can only -- you can get out to Mach 2 or 2.5, but immediately you're looking for a place to land because you've expended all your fuel.

Well, that doesn't seem to me that that's a rational decision. And as a matter of fact, we tried to talk the Air Force -- I did and others of my kind -- tried to talk the Air Force out of putting variable ramp inlets on the F-15.

I said, "You don't need it because they're useless because you have to maintain it. It runs the cost of the airplane up, the size, et cetera."

But we lost that fight but we won on the lightweight fighter. If you notice, no variable ramps on that airplane. And I don't see anybody criticizing it because it won't go fast enough.

But these are some of the things that I just point out in anecdotal fashion that you really have to look at this very carefully instead of some feather merchant coming in here and trying to dazzle you with all this high tech and then you find out, but what happened to our armed forces?

I'm not against high tech, and the reformers haven't been against it. But use it when you need it and if it doesn't pay off, you'd better not work with it too closely. So we really look at a mixture of it.

So we don't look at -- we're not against high tech. What we're really against is unsuitable complexity or technology that doesn't suit the mission. Thank you, Mr. Chairman.

REP. ASPIN: Could you elaborate on that a little bit more, Colonel Boyd? Tell me the high tech that you're for.

COL. BOYD: Say again. I didn't hear you, Mr. Chairman.

REP. ASPIN: Tell me the high tech that you're for. I'm trying to further the discussion a little. Could you tell us the kind of high tech, give us some examples.

COL. BOYD: Well, a good high tech weapon which came out in my era, I'm going to bring out, was the Sidewinder missile, actually produced by China Lake, and it was an excellent weapon. We had some problems with it initially. But you'll recall over the years it's become a superb weapon.

The AIM-7 as it started out was -- I won't say it was a disaster but it was a very weak weapon and they've improved it quite a bit.

So we're for it if you can get the improvement. But we want to test it and test it adequately so you can get these improvements in there and understand where you're going. So we've never been against that.

REP. ASPIN: Give me a current example. In the current debate of all the weapons systems, tell me the high tech weapon system that you're for. Because I think this is important.

COL. BOYD: What about the A-10? I'm being -- no. These LGBs have been excellent weapons, these LGBs. And particularly as P.R. Spray pointed out in his testimony before you. He wasn't too keen on the Stealth -- not that he was against it, but we're finding out people seem somehow to be able to see those planes, radars, different kinds of radars and that.

Yet he made the very key point that the LGBs on that airplane unexpectedly performed very great. So you can't knock that. You've got to go for that. But these really in some sense aren't new high technology. We had those during

Vietnam and elsewhere. We've improved them enormously.

So that's a good example, the LGBs. For example, that one, or the electronics that support it is-a-vis the A-117, I might point out. If that's an example you're looking for.

REP. ASPIN: Yes, I'm looking for some examples. Gary?

MR. LEHMAN: Another example was, we decided against the high-tech solution in putting a laser-guided projectile on the five-inch guns of the Navy ships. That was a high-tech solution that all of the techies were for, but we, in all the analysis we did, having a good, accurate, dumb \$100 a round weapon outweighed having a silver bullet. So we rejected that program.

Another good mix is the battleship, where we absolutely eliminated all the opposition along the coastal corridor into Kuwait using 50-year-old projectiles guided by brand-new high tech Pioneer drones.

And again, the Navy's approach on the drone, as opposed to the old defense Aquila (ph) program was the best is the enemy of the good, and we bought it off the shelf from the Israelis because it worked. And it was \$20,000 an airplane, and we crashed three-quarters of them before we found people that knew how to fly model airplanes.

But now they have a high tech system off the shelf that, combined with an old tech system, was brilliant.

REP. ASPIN: Gary?

MR. HART: I think Mr. Hicks' comment on the A-10 proves -- makes another point, a very important one. And that is, the reformers have traditionally made a distinction between the platform and the weapons it carries.

Maverick did work fine, but it didn't have to be on an extremely fancy, new technology, high technology platform. And so I think you can't talk about an aircraft and all of its weaponry as a weapon. It is a platform that carries a lot of weapons and there's a difference between the munitions and the carrier of those munitions.

Two other brief points. I don't think there is a weapons system that characterizes high technology in the 80s more than the B-1 bomber. That was the true Stealth bomber in the Gulf because it literally was invisible. It just did not show up.

And one has to ask, what happened to technology there? And I would hope this committee and the Senate counterpart would go into the question of where was the B-1 bomber? A bomber that, as you well know, started out to be a strategic bomber, then made a bizarre transition into a tactical bomber.

And I remember being briefed in the 80s by its advocates, saying, "Well, even if it doesn't work against Soviet air defenses, we can use it in places like the Gulf war -- in the Gulf if we ever have to go to war there." Well, we had to go to war there and there was no B-1.

And finally, I think it's important to note, Mr. Hicks is absolutely right. General MacArthur was a maneuver genius. But again the question is, why were there no MacArthurs between MacArthur and Schwarzkopf?

REP. ASPIN: Let me just -- let me follow up on that. Others will ask the

questions, I'm sure, about the equipment, because I think that's important. But, basically, let me ask these questions of Gary Hart and then see if the rest of you would like to comment on his answers or my questions.

Basically, Senator, the interesting part, I thought, of the military reform agenda was the areas that you touched on in your testimony having to do with the manpower. And in particular, three things I think were important: number one, the criticism that the system produced bureaucrats rather than warriors; secondly, that we did attrition warfare rather than maneuver warfare; and third was the criticism that the system didn't, because of the individual substitutions, didn't promote unit cohesion. And people fight in units and fight for each other when they know them. They don't fight for strangers. And this -- I thought all of those were very telling comments at the time they were made.

And I guess the question I'm asking is to what extent do you think they, in light of the Desert Storm experience, which is a mixed bag here from the standpoint -- to what extent do you think that they -- that that agenda has been incorporated into the military? And how deep does it go? In other words, how fixed is it? I noted some skepticism in your testimony and a little in Colonel Boyd's.

SEN. HART: Well, Mr. Chairman, obviously, as now a private citizen not having access to the ongoing processes in the defense establishment, I can't really comment. You and your committee would obviously -- and its Senate counterpart -- would much -- be much better able to address both the structural institutional question as it exists today and what may happen in the future. As you note in my statement, I urged this committee in several places to maintain vigilance, to try to institutionalize the things that did work -- unit cohesion, the type of education of the officers, the type of operational art and so on.

And I would think here Congress can play a unique role. We have, and I in my case 12 years, we have all spent so much time on these questions of weaponry and questions of budget. What do you suppose? Ninety percent of your time, of this committee's time, on weapons and budget? And that's why I said at the outset these hearings are so unique. I mean, I can't -- I'd be hard-pressed to think of a time in my 12 years on the Senate committee where we had this kind of hearing. It was very frustrating. You couldn't even have a committee hearing, because all anybody wanted to talk about were the bells and the whistles and the radars and the night visions and the this and the that. And it's people that win wars.

Now, I know we've spent our time on the questions, as John said, and appropriately so, of pay, of compensation, of health care, of housing. These are all absolutely critical. But you have to have a military system that permits the MacArthurs to rise, the Al Grays to rise -- not only permits them, but encourages and rewards them. And if the institutions themselves won't do it, the military institutions themselves, then this committee and its congressional counterparts must do that, must insist on it. I don't know Mr. -- General Gray's successor. I would hope he would follow in General Gray's footsteps. But this committee can help assure that I think.

REP. ASPIN: Part of the explanation, of course, is that we do vote on the weapons systems. We don't vote on the training manual, you know. We don't vote on the issue of unit cohesion. We don't vote on the doctrine that's adopted by the military in their FM -- Field Manual 105. So it's -- you know, you're driven to what you have some input on, and all the input on the other stuff is at least one step removed.

SEN. HART: Well, we vote on the promotion of officers, senior officers, and stamp, stamp, stamp. Now, I don't think members of Congress ought to get into the politics of the services, otherwise you're going to have a very horrible situation of lobbying of members for, you know, "I want to be a general" kind of business. And "I got his vote, and can I get his vote." We don't want to do that obviously, but you can identify those officers that are fighting the system and make sure, in some ways, that they are not sent off to Siberia somewhere, or on the contrary, that, if they deserve promotion, that somehow they get it.

MR. LEHMAN: Well, if I could just --

REP. ASPIN: Go ahead, John.

MR. LEHMAN: -- comment on that. One of the things that you did take a very active part in was the Goldwater-Nichols reforms, and I think that's a very mixed package -- some real successes and some real wrong directions in my judgment. I think clearing up the underbrush of all the commands and the parallel and layered chains of command was a great success. Strengthening the CINCs and the power of the CINCs over all of the components was a great success.

But you also wrote into the law that to get promoted to flag every officer must have four and a half years of "lounge lizard duty" as a bureaucrat. That seems to me to go fly in the face of common sense. There is no such provision that says they have to spend four and half years commanding a tank battalion or having any operational responsibility. So the signal to the whole officer corps is, "Hey, Washington's the place you get promoted, get to those joint billets at schools, those joint staffs -- staff duty is the way to go." I think that's wrong.

The erosion of the role of civilian authority in writing the precepts for the promotions boards, that was heavily eroded by

Goldwater-Nichols. And if -- there would not have been a black officer promoted until probably last year if there hadn't been a civilian authority driven 20 years ago into the system -- and a great many other reforms. If you read history, the great generals, more frequently than now, had a civilian hand in legitimate civilian authority, not in politics or -- but in the selection process on where they came from. So I think you ought to take another look at that. What is the proper civilian role in promotion boards from lieutenant on up to four-star general?

REP. ASPIN: Let me go down each of these items and see whether you think there has been much of a change -- anybody on the panel. Take the warriors, not bureaucrats. It seems that what we had in Desert Storm were warriors. I mean, Schwarzkopf looked certainly like a warrior, and Horner looked like a warrior. The Marines looked like warriors. Where did they come from? Is that -- do they come out of this Leavenworth school and things? No says Colonel Boyd. Where do

they come from?

COL. BOYD: Not really. I tried to bring that out in my testimony. If you didn't have the Vostasegas (ph) and the Mike Wileys (sp), these gifted people, you wouldn't have these so-called Jeddai knights or these "maneuverous renegades" as people like to call them that were able to pull this off. And that's why I'm talking about this small gifted few and I'm encouraged by John Lehman's comments on this. We have to protect these people. They're your future, and if you don't protect them, it's "hey, diddle, diddle, right up the middle" again. And we're going to be in deep yogurt. And I'm not just talking about the --

REP. IKE SKELTON (D-MO): May I ask a question at this point?

REP. ASPIN: Sure.

REP. SKELTON: I might point out that, as Senator Hart mentioned, that I work on the Military Education panel. It has brought us in contact with a good number of original thinkers in, frankly, all the services. It's interesting to note that Colonel Wiley (sp), who has made significant contributions to our work, is now leaving, but the Army has recognized now-Brigadier General Vostasega (ph) in. And how do you explain the difference, the way the Army treated one and the way the other gentleman was not, Colonel Boyd?

COL. BOYD: I'm not a marine. I don't have the faintest idea. I was so incensed and so outraged over this I got almost emotional. I had to calm myself down so I could even speak coherently on it. I want you to know that. I'm still angry over it. And I hope I don't let it come too far out in this meeting because here was a gentleman, Wiley (sp), who is really an unconventional thinker and he's had very great difficulty in overcoming that so-called tradition-bound thing. He hung in there

all those years. He was transferred. They would people over him to stop the whole process.

Eventually, of course, through initially General -- Major General Al Gray and then finally the Commandant, all this did come out. And what some people don't realize, that manual that they have, that FMFM1, even though a young captain wrote that -- I'm very familiar with his work -- that young captain was very forthright with me. I asked him. See, I'd seen some of his previous work, and it really wasn't that great. And I said, "Boy, this guy got brilliant all of a sudden." I said, "Where did you get these ideas?" And he came right back to me with no reservation. He named three people, and primary and foremost was Colonel Mike Wiley (sp) that helped shape that manual.

REP. SKELTON: Well, let's look on the --

COL. BOYD: I mean, this is the kind of stuff that's going on.

REP. SKELTON: Let's look on the positive side. The Army obviously recognized this type of person. How do you --

COL. BOYD: Well, I think --

REP. SKELTON: How do you cause a service to encourage this type of thinking?

COL. BOYD: I think I can -- I probably ducked your question. I'm not trying to do that. And let me go through it a little bit deeper. One of the advantages we had with the Army -- I mean, this may seem strange on why they went with it -- Bill Lynn (sp), myself, and others, we that abortion called that 1976 of

manual 100-5, and we went around, and we trashed that horribly.

And initially, when we were trashing that 1976 version of 100-5, they're looking at me. They said, "How can this damn Air Force officer talk about ground warfare?" Well, I would go up and I'd read comments. I said, "Let me read it to you." And they said it was no good. I said, "See, even an air officer can understand that. Even an air officer can understand that." I said, "This is a disaster, because you may win, but you're going to have your bodies laying all over and the guys that are going to be left, you'll be putting them in all kinds of psycho wards or something." And I said, "You can't do business that way."

But -- so we became literally just a big pain in the rear all around this town, bringing it over here, in the Army, in the Marine Corps. And the Army finally got tired hearing us, so that opened up -- in other words, it sort of opened up the front where Vostasega (ph), who was a maverick within his system and with his guys, was able to produce such a manual. Now, we didn't have that same opportunity in the Marine Corps. We didn't -- we really couldn't -- we didn't focus or pin it on any one thing per se.

And I think that helps answer it, because we could actually what I called -- see, this thing we just had recently was what I called "Desert Storm II." Desert Storm I was the destruction of the 1976 version of 100-5, and if that hadn't taken place, you wouldn't have "Desert Storm II." And it took these gifted people to do it. And that's why I'm very encouraged by John Lehman's comments on that.

REP. NORMAN SISISKY (D-VA): Mr. Chairman, would you yield for a moment? I don

't want to get this into personalities here, but something I don't understand, Colonel Boyd, if Major General Al Gray bought this system from the Colonel, four-star General Al Gray is still Commandant of the Marine Corps.

COL. BOYD: That's correct.

REP. SISISKY: So what happened? I mean, I don't understand. One minute you're building up that General Gray, the Commandant now, is absolutely behind this maneuver that he did, and the next --

MR. LEHMAN: Maybe I could help you, if I could answer that question for you.

REP. ASPIN: Go ahead, John.

MR. LEHMAN: The reason is because now the senior heads of the services have been admonished very severely not to take any hand in steering the precepts of the promotion boards. In fact, General Gray is well aware of what happened to his predecessor when two generals were taken off the board by the Senate because the precept had been written to favor war fighters rather than bureaucrats. And so they had his fingers smacked, and those two guys were taken off the board.

REP. SISISKY: I can't -- knowing General Al Gray, I can't believe he's scared of getting his fingers smacked. You know -- I mean, he --

MR. LEHMAN: Well, the law has been changed.

REP. SISISKY: Well --

COL. BOYD: Well, let me comment -- make your comment. I personally talked to General Gray about this. I've known him for some time, and he's very upset over

it, but he felt that, as John Lehman pointed out, that his hands were somewhat tied. But I don't see where your hands over here have to be tied. After all, you know, you write the rules and regulations pertaining to the Armed Services, and I think exactly that's what John Lehman was getting into.

And I think every once in a while you're going to have to, instead of just rubber-stamping these people through you're going to have to look in. And if there's some people like that out there, you're going to have to get in the act, because if you don't, you're not going to have --

REP. SISISKY: Unfortunately, we don't do anything over here. We don't --

COL. BOYD: Well, I recognize the Senate has to confirm and all that. But somehow we have -- you people over here on this side of the Potomac are going to have to get in the act. I just -- particularly for these few gifted people. And John Lehman's bringing it out. Senator Hart's bringing it out. And if we don't do this, you're not going to get new 100-5.

I might add, the original version of 100-5, as you well know, was called Air-Land Battle. Well, now they've re-looked at it, and the new one that's coming out, which initially was going to be called Air-Land Battle Future, they now call it Air-Land Operations. That's also an improvement, because the name of the game is avoid the battle, duck the battle, take them out without going through these non-productive battles. So, see, they're still evolving it in that context.

But, going back to people, I don't think you can duck it, because without these people you don't get the ideas, you don't even get any idea of how you should even employ your hardware or what hardware to purchase and what judgments you make on that.

REP. ASPIN: Let me ask this one question then.

COL. BOYD: It's just so crucial.

REP. ASPIN: Let me ask, beyond the personnel then, to the issue of the maneuver warfare, how heavy that's gone into the -- how that's developed into the psyche of the planners. It is now part of the planning documents, although I read something that Bill Lynn (sp) said before the war started, that he was highly skeptical that this had soaked into the psyche, and he predicted, in fact, that the military would conduct fairly much of a war of attrition. They didn't, or at least the ground war wasn't. Do you see that -- I mean, what -- what's the moral of the story here? Do you think that they've -- that the military is now incorporating the notions of the -- of maneuver warfare?

And, again, let me lay the whole question out and then get your answers. I mean, maneuver warfare may be on the ground, but what about in the air? Was that pure attrition warfare in the air where they used the military machines to pound it? Or was there maneuver warfare? How do you interpret the air war? How do you

interpret what happened as -- do you think that was an anomaly, or do you think that was a new chapter in American military history?

COL. BOYD: Let me take it two ways. Your first part, because you asked sort of a couple questions here, and I want to take the first one relative to how well this has been diffused throughout the services, applied, et cetera, regardless

of what's the air for. I'll answer that last.

My impression goes this way, and it's an impression --

REP. ASPIN: Pull the mike a little closer again, could you?

COL. BOYD: Oh, I'm sorry.

REP. ASPIN: Yeah.

COL. BOYD: My impression goes this way, that if you look -- let me take the Marine Corps first. If you look at the Marine Corps, in view of the comments that I've had with junior officers and some senior officers and intermediate officers, that in some sense it really isn't in the Corps. It's somewhat superficial. Now, you're going to be hearing comments as they start dragging information out that many of the younger officers have -- are on board on this. And let me tell you why. They have down there at the Quantico what they call a basic school, and this is for all the lieutenants. They have to go through this basic school. And they learn these maneuver techniques because Mike Wiley (sp) got together with the basic school people, and so these -- all these officers coming out have it.

On the other hand, we're getting a disconnect. In their intermediate level, there's only a few officers that seem to have it, of which Mike Wiley (sp) -- and there's others also in this regard that have that characteristic. And at the senior level, we have some good generals that were over there, but there was a disconnect in some cases between the senior people as you reach all the way down to the junior people -- in other words, intermediate people. Well, if that's the case, then you have to say, "Well, you not only have a mixed bag, but it hasn't been mixed very well." And my comment on that is, is that, in some sense, even though General Al Gray has been totally on top of this thing and wanting to do this kind of thing, it is somewhat in -- I hate to use these words, but it's somewhat in a very shallow or maybe even possibly superficial sense. Now, I'm probably over-dramatizing it, but definitely.

Now, in the Army I think it's gone much deeper, and the reason why I think that is because I've been observing a lot of documents that have been written that have come out of TRADOC. And the boss down there, General Foss (sp), a four-star general, and his deputy for operations, General Silvesi (ph) I believe his name is -- and I've been reading their documents, and they're totally consistent with all these new ideas that Vostasegas (ph) started and that they're evolving and carrying them even further. And the fact it's even a credit to them, they recognize that we -- we're talking about all these maneuver warfare and we've got the wrong name for our own manual, Air-Land Battle. It should be called Air-Land Battle -- Air-Land Operations, which they've done.

And so, in their system, particularly at the TRADOC level, why, you're beginning to see that these ideas are really diffusing in a very broad sense throughout the US Army and likewise at Leavenworth. Now, comments that I've heard -- I'm certainly not familiar with it -- when we go up to the War College level, particularly Carlisle, why, you've got a different breed of cat. They're not -- they haven't quite come on board on these things.

Now, with respect to the Air Force, getting back to your point on the Air Force, I think they have -- well, if you'll go back -- go back to World War II.

They had what they called AWP-1, Air War Plan-1, in which they were going to bomb Germany. The idea was to hit those critical nodes and connections and win the war. But we found out it quite didn't go that way. Instead, we still had to invade. In some sense, though, what we're -- what the -- what they did this time is they did have better weapons and they did try to hit these critical -- you know, the real critical nodes.

I think in some cases they might have gone too far. In other words, they may have reached out too far in Baghdad in hitting areas where they didn't have to hit, because basically what you want to do is isolate the forces by hitting their communications, by hitting their lines of transportation, and by hitting the vehicles trying to move to resupply, et cetera. And then if you can cut them off and use your weapons to cut them off, of course, then you start destroying morale. Whether you have to beat up a whole country, I'm not so sure. Now, naturally, they didn't do that this time, so in that context, they certainly have improved.

But think of it this way: What do air forces basically do? Well, they've got surveillance. They've got recon. And they have intelligence. That's one function. Another function is they use their mobility. Basically, they can only deliver firepower, and that's the second one. And the third is the airlift. If you look at those three functions. So, in a sense, that Air Force, by the nature of the beast, is confined to not only doing those things, but it puts them in what you might say a firepower role. But that doesn't mean that that firepower role shouldn't be -- should not be integrated with land operations, and in this particular case they tried to do it. So I think there has been some progress in that regard.

And so it's just hard to say, "Well, you can't just get up there and step out and, you know, try to occupy something -- step out of an airplane."

So, in that sense, it was done very well and it did prepare the ground for the land operation. I think the Air Force has gone too far, I might add, trying to say they were the decisive force. They weren't decisive because they certainly prepared the decisive blow, which the ground operations did, and had a very important role.

So you have to ask yourself: What should and what do air forces provide? When you look at all those functions, the most important thing they can provide is air superiority and, better yet, air supremacy because once you have that, what do you really have? What you really have is you improve your freedom of action to do what you want to do. You destroy your adversary's freedom of action, so he can't do what he wants to do, whether it be in the air or the ground campaign. And so once you achieve "improve freedom of action" and you start inhibiting his freedom of action, what basically happens then? You can play the game the way you want. He's constrained.

Remember what Schwarzkopf said, and this is very important -- remember, he kept all his forces there at one position right opposite Kuwait. He didn't move them out there to the west initially because that was the image he was trying to give the Iraqis. Then once the air campaign started, then he started shifting his

force and logistics to the left, so he's going to have his main effort or (chavair poomp ?) or main focus come out of the west there with a hook to the east. And he said -- somebody asked him the question -- he said, "Well, obviously though, even though you may be able to hide it somewhat with the air campaign there's going to be some land forces there and some spies and that kind of thing that may still see what you're trying to do out the west." He says, "That's right. However, what can they do about it now? Because if they try to move to try to block us," -- in the meantime with the air campaign, they can't move because we've constrained their freedom of maneuver or their freedom of action. So, therefore, you can make that keep cut into the west, to hook the east, and the idea being to circle the forces. But what is that? Once again, freedom of action. And so you always have to ask yourself: Can the air forces -- will the air forces provide that freedom of action and constrain your adversary's freedom of action? Because if we can improve ours and constrain his, then we can cope -- we can shape and cope with circumstances. We deny our adversary the opportunity to do the same thing. That's what happened in the Gulf.

MR. HICKS: Can I get a word in this, too?

REP. DICKINSON: Well, I've got to leave in just a minute, Don. Let me --

MR. HICKS: Okay.

REP. DICKINSON: -- ask a question to follow on. I want to go back to what was said before because I didn't know we was going to move on to another subject. And that's the sensitivity of the Congress getting itself involved into promotions. I can't imagine a more sensitive and potentially disastrous situation. If we, in the Congress -- House and Senate -- get into the -- the pass-over of an early -- forcing of early outs and whether or not he's going to be promoted. And I've been at this business over 20 years, too, and I know it's not perfect and sometimes we can go back in and review records and correct records, if there's been a reason for pass-over.

But, John Lehman, you've been on both sides of this. And, Senator Hart, you've been on the Senate side where you have the -- the approval of promotions when you got to get the (flag right ?). How would you propose that the Congress get itself involved in the pass-overs and the promotions on a -- on a daily basis and focus in on one officer and say, "Hey, we like this guy because he's a maverick, and we think he's being penalized. So we, the Congress, going by legislation, pick this guy up and pass him up"?

Let me ask you, Senator, and then I'll come back to you, Colonel Boyd, and you, John. Everybody pitch in and -- that I know you all have feelings about it.

SEN. HART: I don't think that -- Congressman, you're absolutely right. I don't think that Congress ought to get into the military promotion business. I think in the Senate's case, the very fact that it has the authority it has suggests that it shouldn't just routinely exercise that authority -- rubber stamp, rubber stamp, rubber stamp. It's not doing its job if it does that. Why have the authority if that's all you're going to do is just send them on their way?

It is, it seems to me, very legitimate to ask senior commanders or promotion boards why -- in individual cases -- why somebody has been passed over. I mean,

it's -- it is part of oversight --

REP. DICKINSON: Okay.

SEN. HART: -- to inquire.

REP. DICKINSON: I understand what you say. But knowing a little bit about how the promotion boards act, they're supposed to act in the blind. Maybe they don't. But they got the records there, and they go through and they're not -- there's not even supposed to be a name attached to the service record that they go and -- because you've got this pyramid coming up and it's so terribly competitive that if we're going to have a Senatorial staffer looking over the shoulder of the promotion board and say, "Hey, wait a minute. Now, come in and justify to the Senate why you

passed over this guy?," then I can see you disseminating the -- the system that we presently have which works pretty good, but it's not -- it's fallible. We make mistakes. I don't know how you do that.

Colonel Boyd, help me here.

COL. BOYD: Well, I agree you're going to make mistakes. But are we saying we don't have a system to rectify those mistakes? I think we have to have a system, and I'm not telling you to investigate every officer that gets promoted. But if you see a few of those people -- I think Senator Hart made a good point. What are we doing to do? People over in the Senate are going to go bang, bang, bang and stuff that through. There's been precedent for that before. Other people, the Senate got on board.

A good example, some people may like him. Some may not Admiral Rickover, remember he's a Captain, and I think he was almost 60 years old before they promoted him. And what happened, it was the Senate that stepped in there.

REP. DICKINSON: Then they kept him too long. (Laughter.)

COL. BOYD: That's right. And I think John Lehman brought that out.

But the point is it can be done, and we have precedent. We have -- we have precedent for it. We have precedent for it. And I'm just trying to point out that if you see these few gifted people, then -- I don't know -- maybe we have to -- somebody has to come over and talk to the Senate and say, "Look it, you better take another look at this guy. Look at what he's done," and have some proviso. Just -- you don't confirm -- don't confirm the promotions --

REP. DICKINSON: All right.

COL. BOYD: -- until you get the people you want on there.

REP. DICKINSON: We're looking at the mechanics, and I'm not -- I'm just a little puzzled how to do it.

You have a suggestion, John?

MR. LEHMAN: There are three roles that Congress should play in promotions. The first, under the Constitution, is to lay out the criterion for the maintenance of the force, and that includes the criterion -- the broad overall values that are supposed to be applied in promoting and seeing that there is a true equitable merit system of promotions in all of the services, and that's what you do through Title 10, and that's where it should be done.

And I've said earlier I've criticized some of the things you have done, like the four and a half years of lounge lizard duty.

But that's a proper role. If that's what you want, if you want everybody to have four years of staff duty, put it into law, which you did.

The second role is to see that the proper executives that are appointed and are accountable to Congress have the proper authority necessary to run any organization. They have to have -- the chief's executives have to have authority to implement what the intent of Congress is through the precepts and the -- overseeing the promotion system. Traditionally, the way the service secretary --

REP. DICKINSON: Let me interrupt you to see if --

MR. LEHMAN: Yeah.

REP. DICKINSON: -- I understand what you're suggesting. You're suggesting then that -- that the chief of the service, whoever he might be -- if he -- if he sees an error in his perception, if he sees an unfairness being done, that he would then go to the Senate and say, "I wish you would look at this because I can't get into the promotion system."

MR. LEHMAN: No. The way the system -- the way the system used to work was really quite good. How it works now, I don't know. I haven't followed it. But under Title 10, the service secretary had responsibility for the precept, the directions to each promotion board: you shall value these qualities and these qualities and these qualities, and this much command time is necessary and so forth -- that traditional, for years and years, was the way promotion boards were charged.

Then the promotion board met in secret, and then they would come out with their list and report out to the Secretary, and time and again over history -- particularly in that volatile period when Congress wanted blacks given a fair shake to create a true equal opportunity and the promotion boards weren't giving the blacks a fair shake because they didn't have the blocks checked -- that had to have been written into the precepts. And when boards came out and ignored the precept, as they often did in the '60s on this very issue, the service secretaries, in many cases, sent the precept back and said, "You didn't hear me." They never put a name on it or any -- and knew no names. But when the criterion was not met for the good of the services, then they were sent back until they came up with the right -- and usually what happened was more were added to make -- to meet the requirements of the precept. That's a proper role because the service secretary has to come up here every day through the spring and is accountable to you for applying the intent of Congress in the law.

Congress should not ever try to get into naming people in micro managing. But there is a --

REP. DICKINSON: That's what I've heard suggested here.

MR. LEHMAN: I think --

REP. DICKINSON: If you see it -- if you see an injustice --

MR. LEHMAN: I would have told you --

REP. DICKINSON: -- you reach out and get him.

MR. LEHMAN: No. But I think what he's saying -- what he's suggesting -- at least the way I would interpret it -- is the third role of Congress in promotions, and that's the informal role.

COL. BOYD: That's right.

MR. LEHMAN: You people up there on the top row have a lot more time looking at these people. You've seen many, many young officers come all the way up, many of you know by name and by reputation, officers from the time they're a lieutenant.

There is a proper role for discussing with service secretaries and Defense secretaries "what are you going to do with so and so" because that service secretary or that Secretary of Defense may have just come in from Okefenokee where he might be -- not have the knowledge that you have, and so there's an informal role gained by the tenure and experience that -- that you all have. But it should not be a legislative role or an official role.

REP. DICKINSON: Well, I can see the danger in that, too. But I have one -- just one short question. I don't want to monopolize the time.

Nobody has mentioned the OERs that go into the promotion records. This isn't a player? This shouldn't be a player? We can't -- we can't regulate that.

MR. LEHMAN: Well, it still is.

REP. DICKINSON: If you -- if it efficiency reports -- if you got a bad one --

MR. LEHMAN: Let me -- there was --

REP. DICKINSON: -- in the back -- in the back --

MR. LEHMAN: There was a major change --

REP. DICKINSON: -- it follows you like a bad cloud.

MR. LEHMAN: -- in the way the records --

REP. DICKINSON: Say again?

MR. LEHMAN: -- a major change that came from Congress 10 years ago, and that was the weighting given to leadership and command time as opposed to management and staff time. That -- mainly because of pressure that we got from the Senate Committee, the OERs were rewritten to provide a higher valuation for leadership and -- or operational tours. Now, that's had to have been reversed because Congress changed ground and said no staff -- joint staff time is more important, but that's the proper role.

REP. DICKINSON: All right. Let me --

MR. LEHMAN: OERs -- it's implemented through OERs.

REP. DICKINSON: I don't want to monopolize the time. Colonel Boyd --

COL. BOYD: I'd like --

REP. DICKINSON: -- he's got something bubbling up here.

COL. BOYD: I'd like to comment. I would like to take off a little bit on Mr. Lehman's comments about OERs. Having been in the service, I've had many OERs rendered on me, and I'm not unhappy about what they do because they're going to do it regardless, and I've also had the opportunity to use them relative to other people.

And what I found, for example, in the time period I was in there, they kept changing these OERs with the percentages, the categories and whether they're going to weight it this way and weight it that way, et cetera. But you know, when you -- when you have -- have a position where you have to supervise other people, eventually you're going to have to pick a person that you're going to -- you want on your staff or you don't want somebody. In other words, you're going

to get some opportunity. You don't get the free -- a free loading on it, but you have some control over that and, of course, a little bit more control with a little bit more rank.

And the point that I want to make here is on -- on my people, the personalities -- when I had to get a new person, they'd send up these folders, the eligible officers, you know. And they'd be do high in that, and I'd read them, and it was -- you know, it was garbage. I mean, you know, everybody walked on water and, you know, what kind of a -- what kind of a -- how do you pick anybody that way? And so what I would do -- you're asking a question -- I had to go informally and talk to other colonels -- what are these people -- what did they really do? I don't know. "Hey, don't tell me what you said on the OER. I know what was said on that thing. I don't even want to talk about it anymore." And so I hired people -- some of them, I didn't even interview. A guy would tell me here is the characteristics. I'd trust the guy. I says, "Is that your guy?"

He said, "Yeah. Did you interview him?" I said, "No, I'm convinced. I'm taking him." And I took people that way, and they did better that way, and they did better than the people I interviewed. They did even better than the people I interviewed.

I mean, this is the thing you're against -- what we're talking about -- even though you lay precepts down, like John Leyman is talking about, remember there's going to be horse trading on those boards. You're not going to get rid of that. And in many cases, the thing that I found out, being an officer in the Air Force -- and I've seen it in other successful officers -- and even Colin Powell himself -- General Colin Powell said the same thing. He said, "The most important things that I get are through my invisible or informal channels." That same thing worked with me, particularly as I rose higher, so I could reach down and find out what -- what -- what was going on.

Now, there's a danger when you do that when you circumvent the command line, but that's easily dealt with. You got to -- you know, you got to use those neurons every once in a while, and you can deal with it very easily. And what you do is you prescribe what I call an iron law, and the iron law goes like this. Any information that I get outside of the command lines or invisible loops, under no circumstances -- I mean, under no circumstances will that ever be used for disciplinary action. It's information only. And I learned that as a young officer, and when I found out -- God darn, I found out other guys were doing the same thing and they were -- and some people who knew that -- criticize me -- and the gifted people were doing that, many of those people. So it can be done, but you have to abide by that iron law. If not, you'll just destroy the organization, and it can be done. So you're going to have to get into these kind of things.

What I am saying, you better get that iron law -- and the third point that Leyman was pointing out -- and if we have people like the Mike Wileys (sp) in that -- you know, these things are correctable. Let's correct it. It's correctable.

REP. ASPIN: Gary?

SEN. HART: Chairman, on the fundamental question you asked earlier about the

institutionalization of reform, I am perhaps more pessimistic than others, just given the way human institutions work. These are 200 -- almost 200-year-old institutions. By their nature, they will become inevitably traditionalists.

I think part of the reason why I feel manuals got changed and so on was the -- were the disasters in Vietnam. You now have senior officers who served as younger officers in Vietnam and saw what did not work. What concerns me is when this generation of somewhat reform-minded officers moves on, will these institutions go back to very traditionalist kind of thinking? And I think unless there is

congressional oversight, insistence on some of these things, they inevitably will, given human nature.

REP. ASPIN: Ike?

REP. SKELTON: Yes. Thank you. All of this discussion about the maneuver of warfare and -- and what took place in Desert Storm, my gosh, all they did was read history. They saw what should have happened at Tarawa and bombed sufficiently, as was not done there, took a lesson out of Bernard Montgomery's deception at Alamein, took Stonewall Jackson's flanking movement, and you have Desert Storm. That's what they're teaching now in the various war colleges, and I'm pleased to say they're doing a superb job.

And one of you gentleman mentioned the SAM's (ph) course out at Fort Leavenworth. I compliment it. It's -- it's -- it's more than earning its keep.

But let's talk about high tech for a minute. And, Secretary Hicks, you -- you mentioned that. You specifically mentioned the F-17. It was not confined to that, however, in talking with some of our young men that captured some of the Iraqis. Some of the Iraqis wanted to know what type of rockets were used to destroy their tanks.

And when informed that they were not rockets, that they were M-1 artillery shells shot from the tanks they didn't believe it. That's high-tech stuff and it works, but let's talk about the F-117, the stealth.

It is a new technology. The great debate over the bomber, which of course is the B-2, has been eliminated. The stealth works. And I think you said, Mr. Secretary, that half of the targets that were damaged in the air campaign were done by the F-117.

What's the next step, in your opinion -- we're here to talk about the future -- what's the next step in your opinion, Secretary Hicks, as to where we go with our stealth technology. (To say ?) I'm a supporter of the B-2, where do we go from here to there and beyond that?

MR. HICKS: First of all let me make a couple of comments that lead into that, and that is I also agree that platforms are important to consider as being upgraded. You know, if you have avionics you can put on a platform, if you have a Maverick you can put on an A-10, if you have Fleers or whatever you should do that. I mean you really shouldn't go onto new platforms unless you have something significant and the Chairman will remember that John Fosch (ph) and I testified on that subject some time ago where we felt the stealth was the only reason, the new reason to go onto a new platform.

Now there was a lot of discussion by Pierce Bray last week and almost referred

to here by Colonel Boyd, questions about stealth working. In fact, last week Pierce Bray commented we risk the lives of the F-117 pilots because stealth wouldn't work, which of course may qualify for the most ridiculous comment of the year, at least as one of them, because if you asked the 117 pilots how they felt going in very stable at 20,000 feet and dropping -- using their laser-guided triple-L GBs there was no question of that. They knew they were safe and they knew there was no problem at all.

There was a document put out last March, 1990 by the Air Force which I think is a very, very important document. It talks about stealth, it talks about how good it is or how bad it is and discusses -- makes it realistic. Of course it is not magic but it has a lot of relationship to the submarines in their quietness. That's a stealth of a type. So the Navy, of all the services, should really understand that.

I think that what's terribly important is that, and I think that's been totally passed over here, is that all my adult life the Air Force has talked about roll back, you know, knocking out the air defense systems in a geographical area, getting the things down so you can use other forces. Now stealth allowed us to do that across the entire situation here. I mean we were able to knock out all of their command centers, all of their communications centers without worrying about survival. We did it.

Now, as I said in my prepared statement, that the reason I support the long-range stealth, which I think is important, I also support the ATF, I support the A-12 or its new version whatever it will be, is that that gives you an enormous advantage over the enemy, a very, very large advantage. Long range is important because there are many times that you just don't have the ability to put your assets where you want them in time. We had a luxury here. We had a luxury in that if he had gone -- if Saddam Hussein had gone into Saudi Arabia we would have been hard pressed. We wouldn't have had the bases we had. He didn't do that, so we had the ability to take nine months to prepare everything. As far as I'm concerned, the ground war became a snap because of the air war before it. It wasn't just a war of attrition. It was a war of knocking out all the key spots that allowed him to command his troops, to see what's happening. He didn't know what we were going to do, we knew what he was doing, and so on. So I think it's important we maintain that capability from now on. In fact, there was a very interesting article recently written by General Glen Kent (sp) which I've given the Chairman, which I think is a fundamentally important thing about how the next war might be fought.

In this case, you know, everything goes along, Saddam Hussein may get overthrown, whatever, but eventually we have a situation where Saudi Arabia is invaded completely. And what do we do then, and what do we have as assets to handle that? And I think stealth becomes one of our real, really important technologies. It's a technology as important as radar, and it seems to me a tragedy if we let that technology and all its implications across the board go down because of unnecessary reasons. It's just too important.

COL. BOYD: I'd like to make one comment to respond to --

REP. ASPIN: Please.

COL. BOYD: -- to Congressman Skelton, and you made the comment about the schools and that they have come a long way, and then you mentioned history. In some sense, you are right, but I would -- I would broaden it a little bit more. It's more than history that plays in there, and I'd have to get together and show you some details of things that I've worked out where you can combine many ideas of science and engineering with history, and you can evolve to a new form. Now, what comes out of that new form, and sometimes I don't even like the word "maneuver warfare" although we've applied it in that context so I use it myself.

But mostly when you look at these schools -- I don't care whether you're talking about Leavenworth or the Marines or elsewhere, even if they're doing it from an historical viewpoint, they are primarily looking at it from strictly a physical viewpoint. In other words, trying to get in the back door, and how troops move in the field. And in some sense, they're really not come to grips in a very positive sense with the mental and moral effects that you can produce.

In other words, how can you set it up ahead of time? In other words, instead of having it happen accidentally to generate these mental/moral effects where you can just literally pull your adversary apart so he can't even function as an integrated organism. And there are ways that that can be done, and I would say that part hasn't been stressed. And if you're going to talk about future warfare, or future conflict, whether you're going to talk about conventional forces, unconventional forces, surrogate, whatever you want to talk about, you are going to have to get more and more into that. Because if you don't, your adversary is. And we could have some very serious consequences.

And just studying military history, it's not going to get you there. Now, I'm not saying you shouldn't study military history, but we also have to evolve to a higher level. And if we don't do that, we've got some very serious problems. And one of the things that I've detected so far is this idea where people tend to think of maneuver warfare primarily and almost in some cases exclusively in a physical context, and they really don't come to grips with these mental and moral effects that you can produce, or where you set yourself up where you can deliberately produce that.

REP. SKELTON: Very quick like -- and I know we're running out of time -- very quick like, in ten words or less, give me an example of what you speak.

COL. BOYD: A very simple example was the synthesis that we were able to do with respect to airplanes. My experience with airplanes, my experience with looking at military -- well, not -- I hadn't looked at military history yet, but I evolved it later on. But my experience with airplanes, the flight tests of YF-16, YF-17, and what I noticed in the works of Kurt Goedel. Probably you people never heard of him, he was a mathematical logician. And also the Heisenberg principle and the second law of thermodynamics. You can synthesize those things together, and know ahead of time then if you do certain things in a certain way, you can literally generate confusion and disorder in an adversary system and pull him down so he doesn't even know what hit him.

And that's why people have really treated that oodleloop (ph) in a superficial sense. The key idea is not observing, orienting, deciding and acting. That -- people have known that. They've said it different ways in the past. The key

idea is to do it in a way where you get inside your adversary's loop, thereby he's dealing with outdated information, thereby you generate these confusion and disorders. And there are also the same kinds of things that can be done in the moral dimension, too. And particularly when you look at command and control, when you look at orientation in a much broader and in a much richer context, then how can you pull his pants down so he -- I mean, mental pants down and his moral pants down -- so he can't even function as an organic whole. You've got the game then, and it's very powerful stuff. And you'd be surprised what comes out of that.

Some of that is in the green book I guess that I gave Tom -- your aide up there. And if you want to go over it, I'll be glad to go over it with you. But there's some very powerful influences there.

REP. ASPIN: (Off mike.)

REP. SISISKY: Thank you, Mr. Chairman, and thank you, gentlemen, for your testimony today. I got so many pieces of paper here that I could start, and I really don't have the time to do it. But I would agree with you that people are the most important ingredient. I just came back from the Persian Gulf last night. And I tell you, to see our servicepeople over there -- just absolutely unbelievable. You can mix that with strategy and tactics and you seem to place a lot of emphasis on officers. I'm here to tell you that the training, the absolute training, that we've given our people is really the difference.

You know, a good part of my time was spent -- not on this trip, but with the Navy. I'm from the Hampton Roads area. To ride on a nuclear submarine and to see 19-year-old kids running computers, the training that these people have, to look inside of an M1A tank.

And by the way, while I'm on the M1A tank, somebody mentioned the M60s -- you know, the Marines love them. I'm going to dispute that with you. I specifically asked the question in the repositioning of Marine supplies that they're getting ready to do, "Are you going to reposition M60s?" "No. We're going to do M1As." And if you'll look, what General Schwarzkopf had to do to take M1As in an armored division, to place them there -- the Iraqis didn't even know they were being shot at until they saw the tanks beside them. The M1As could shoot on the run. They could see at night. That's high tech.

And to say that they -- if we haven't learned that the edge -- our edge, and we don't keep the edge on high tech, then we have lost a very, very valuable thing.

Now, I happen to be one that the military reform caucus never told me to defend the A-10. I defended the A-10 because I saw something in front of me that looked pretty good. You know. But the world is changing. The world is changing, and what's good today may not be good 10 or 15 years from now.

I work in the little things such as entrenching tools. When I went to Honduras and saw a pile of shovels in there because our handles broke, and I asked specifically, "How did our handles do this time?" They corrected that.

Mine detection equipment. They were able to do something with mine detection with not a very high tech piece of equipment. So, yes, we can use low tech, but if we ever lose our edge in high tech, we are just vulnerable as can be.

You know, we sat there with 11 pilots of 11 different planes, Air Force and

Navy, listening to them talk to us on what their aircraft did. And it dawned on me, as this war is written, probably the one thing that'll come out with all the air sorties that they had that nothing really -- you know, everything was going from the sea; Tomahawk missiles were coming in; F-117s easy; the Brits with their -- they didn't crash. And why? I hope you don't think that's not high tech, that thing sitting up in the sky directing all of that traffic. That is as high tech as you can get. And these people were directed by that. It is almost impossible -- if you can imagine that many sorties going over Washington, DC or the state of Maryland or Virginia at the same time without anything happening.

So -- now, having said that, I've got to ask something specific to Secretary Lehman. You were absolutely right about naval aviation. You were kinder than I've been. I said that naval aviation is going into Chapter 11. And I want to try to prevent it from going --

MR. LEHMAN: I would say Chapter 7 myself.

REP. SISISKY: Well, I said I want to prevent it from going into Chapter 7. Now, the problem is, and I've been very outspoken on this, what we can do about it. I don't really believe that we can wait 15 years with the A-6s in there before we develop another plane. The argument is going to be, as you know it was two or three years ago on the F-14D and whether -- the thing that scares me, really, is that the Navy has to fill the decks. And they are going to fill their decks, because they can fill them cheaper, with FNA-18s. Now, I'm not skilled enough to know whether that's the right thing. Do you have any ideas that you can -- and we need them pretty fast.

MR. LEHMAN: Funny you should ask, Mr. Sisisky. (Laughter.) I do have some ideas. I spent a good deal of time just 10 years ago before this committee defending the F-18. There was a great effort to kill it. The F-18's an excellent, reliable, swing fighter that is the perfect airplane for the Marine Corps, very capable in air-to-air, capable in air-to-ground, but it's too short-legged for interdiction missions from a carrier. It just is -- it's just not practical. It can't carry enough and it can't go far enough without immense amounts of tankering to get it there and back.

There is a role for it on the carrier decks, but to have the carriers play a role supporting the CINCs in every crisis of the last 40 years, you've had to have a big, capable platform that can go far without refueling and carry a heavy load. And that's what the A-6 has been doing for the last 25 years.

They're all old airplanes. Okay, the new administration program says put new wings on them. Certainly. But the tails are now falling off. And these are old airplanes. It's incredible to me. Both the F-111 and the A-6E went into service the same year, in 1972 went into combat. Since that time the Air Force has wisely upgraded the F-111 three times to the latest level of high-tech, smart weapon technologies. Every time the Navy tried to do the same thing NOSD tanked it -- killed it -- all the major A-6 upgrades.

The Air Force did a very smart thing in taking a good -- needing more night, all-weather, deep-strike capability, took the basic F-15 airframe -- a superb, big long-range airplane -- and made it into a precision long-range, all-weather

strike fighter. The F-15E performed brilliantly in Desert Storm. That's what the Navy ought to do now, is take their existing F-14 and do exactly what the Air Force did with the F-15, make a strike version of it. Put either the A-12 radar that's already been developed or the F-15E radar or modify the Aug-9 (ph), but that is a big airplane that has the range, it has the two-man crew, it has the bulk for the avionics.

Trying to make an F-18 into a silk purse is ridiculous. It's going to cost -- it's a brand new airplane, it's going to be all new fuselage, more fuel, new engines, new tail, new wings and is going to cost in non-recurring four or five billion dollars. That makes no sense at all. The current version of the F-18 cannot do the deep strike mission. Regardless of what people tell you, it can't be done.

So you've got two options for the interim. Either put the A-6Gs or Fs that have been paid for in development into production, or the F-14D strike version, and then long range advanced development for a new airplane. But the current proposal is the most non-sensical approach I have ever seen.

REP. SISISKY: When you get an opinion, let me know.

MR. LEHMAN: (Laughs.)

REP. SISISKY: I happen I think to agree with you and I'm just going to say one little word. The GAO was up here testifying a few weeks ago on combat naval aviation, and they mentioned F+A-18 with something that kind of scares me -- and I think it has a bearing on this -- and they said it's the cheapest way. And I corrected the guy right then and there and that's what we have to be careful of in analyzing this war. There may be a cheaper way, but it may not be the best way to protect our people and to win, because after all, that's what we're doing. And I think we have to be extremely careful in that to provide our people with the best --

MR. LEHMAN: Well, it's not only not the best way it's not the cheapest way. I mean the Air Force had the same -- looked at the same choice. They looked at trying to make the F-16 into a bigger, long-range strike aircraft and they found the expenses just too high to do that, the same with the F-16.

REP. SISISKY: By the way, the F-111, I might say, when I was over there that's all they could talk about, how well that plane performed.

But one more thing. I think we've made the commitment now to have an all-volunteer force. Obviously, the commitment because it worked. Don't you think there is a difference between an all-volunteer force using high-tech equipment and conscription where you have somebody coming in for a year?

MR. LEHMAN: I would go further. You cannot have a truly high-tech, integrated armed force as we now have without the all-volunteer force, without the high-tech people, without the capability to draw and attract all high school graduates and people with the capability to take technical training and then keep them and to stay in.

But there's one aspect that I've mentioned here before that worries me. You really are having a very distinct now separation of the career service from society. I was out in Berkeley last week and amazed to find that they've just cut 30 percent of all ROTC billets. They virtually have no OCS in the Navy

today, one class a year and it's becoming a total career force. We're not going to have the citizen-soldier, citizen-sailors that we used to have in the services, and I think that's something that ought to be taken a look at. We need to go to a more reserve-oriented, "do your four year, five year, and stay in the Reserves" approach.

REP. SISISKY: Okay.

REP. ASPIN: Let me ask the others to follow up on that. Gary, have you changed your mind about the all-volunteer force and the draft and all that?

SEN. HART: No, sir. I do think that Mr. Lehman has put his finger on a social -- or sociological point or problem, and it is a profound one. I think we ought to -- there is no simple answer to this that solves all the problems and considerations.

There is a strong argument to be made for people giving something to their country. And there are enormous advantages if you're going to have a high technology or technology-oriented defense system to have highly trained people that you keep there for a career. It makes a lot of sense on one level. And you've got this problem of democratic duty and responsibility that I think has largely fallen away in this society, and we've got to figure out a way to address that, maybe through some form of national service, voluntary national service, with a military/non-military option, a variety of things that ought to be thought about. But I do think to the degree we solve one problem we don't address or solve the other one.

REP. ASPIN: But you wouldn't change the all-volunteer force?

SEN. HART: No, but I do still strongly favor, as I always have, some national service program starting on a volunteer basis with a military/non-military option.

REP. ASPIN: Colonel Boyd?

COL. BOYD: Yeah, there's a comment you can make on that --

REP. ASPIN: In the mike, please.

COL. BOYD: You always nail me on that. But there's a comment that you could make on that that I think might get around that. If you have an all-volunteer force of course the feeling is that also by having military they're not as tied to society as much as if you have a draft. You know that's come out in the past.

REP. ASPIN: Right.

COL. BOYD: But there's another way you can handle it and it came out today, and it was something actually the reformers proposed way back in, I think it was either late '70s or early '80s, is change your proportion of your force and you're going to have to do it now with the money constraints of regular versus Reserves and the National Guard.

And so if you up that -- if you up the, you know, the percentage of the force being related to Reserves and National Guard -- and I'm not talking just going to weekend meetings -- in other words, they can do it positively so you don't have some of the problems you had over there in the Gulf with some of the units, because some did very well. And if you do that, then you're also keeping society sort of linked up with the armed forces, and you know, that's one way

you can kind of mitigate the bad aspects of not having a draft.

And I'm not so sure exactly where I come out on that right now, except I do think one way I do come out on it, I do think we're going to have a larger percentage of Reserve, National Guard, vis-a-vis the regular force. And there are some positive aspects, yet there are some negative ones, because sometimes they get -- we just shunt them aside and don't pay enough attention to them, and then we find out we have units that they're still in the training rather than being in the operation as that happened.

But on the other hand, other units performed magnificently over there. In fact, they were in the leading waves and did a superb job. So it's up to us, you know, really to do the right thing so that can be done. So those are sort of my views on that right now.

REP. ASPIN: I can't let John Lehman go by. We talk about the problems of naval air. If you were redoing that whole A-12 thing over again, John, what would you do differently?

MR. LEHMAN: Well, I guess I wouldn't be so optimistic about the common sense of the bureaucratic decision-making process. I mean, on the one hand, the Navy and the Air Force started their new fighter programs at the same time. At the same time, 1981, they both estimated at the time that they would cost about \$3 billion non-recurring to get 10 years of fully developed program.

The Navy attempted an effort to design it to cost, to say "Look, we're not going to have infinite amounts of money for a new strike aircraft. We can only afford this much in expanding dollars," and went industry and said "Can you build it for this? Because if you can't, you know, we'll have to do another solution." And so the result was that we brought in the just retired Secretary of the Air Force, Hans Mark, to head a blue ribbon panel to look at the technology. Would it support a stealth aircraft with the range and the payload of the A-6? He said -- their panel said no. Wait till the Air Force finishes the B-2, and go with the A-6 upgrade. Use the basic platform you have and put the latest technology, smart weapons and digital avionics in it, and when the Air Force has paid for and proven the stealth materials and design technology, then do it. Start an advanced development program.

But the OSD bureaucracy ordered the Navy -- ordered me personally -- in 1983 to fully fund a full FSD program for a stealth followon to the A-6, against the full Navy recommendation. So we agreed to do that, but we said "Look, in order to do it we're going to have to give up things like ICNIA, the integrated navigation and avionics system, we're going to have to give up a lot of the new bells and whistles and upgrade them later.

And to do that, we said "Okay, we're going to freeze any design changes once this contract is approved." And we worked for six months to try to throw things off, as Col. Boyd was saying, and we knocked off about 60 percent of the requirements that were put in. The effort was funded at, as I recall, 3.5 billion [dollars] with a 30 percent growth record in it. Well, the contract was continued to be negotiated, wasn't signed till about a year after I left, so after that I don't know what happened. But I read in the newspapers that the -- the block frozen no changes was eliminated and new changes were brought in,

which opened up the requirements again, added new requirements, and shifted the fundamental design.

Nevertheless, having said that, the -- as I read in the papers -- the program, when it was canceled, was overrunning to the extent of a million and a half dollars and may have gone even to a total of \$6 billion before they got the whole airplane developed. Then, I read a couple of months later of the great success of the Air Force program that didn't try to constrain the price and is now estimated at \$13 billion, twice what the Navy program would have cost, and that's a success. (Laughter.) So I guess I was naive to think that anybody anywhere cared about the cost of a system.

The navy tried, they failed to get to the cost they wanted. They had a -- maybe 100 percent overrun, but it still would have been less than half what the Air Force now has as a successful program. So looking back, the lesson learned was I had a major hand in destroying the prospects of Naval aviation by believing what Congress was telling me, that they wanted cost constraint.

REP. SISISKY: It proves that the Navy needed a good public relations program, that I told you eight years ago. (Laughter.)

REP. ASPIN: Martin Lancaster.

REP. LANCASTER: Thank you, Mr. Chairman. Mr. Secretary, I, like Mr. Sisisky, agree with you on your assessment of the situation of naval aviation, but we are in -- whether or not we believe it -- constrained situations when it comes to budgets. In order to get what you think we need in naval aviation, what would you cut? What is in the Navy budget now that we could eliminate in order to do the right thing by naval aviation, given the fact that all budgets, including the Navy's, are going to come down over the next five years?

MR. LEHMAN: First of all, I don't quarrel with the level of budget allocation that has been made. I'm sure I'd be arguing if I were in the -- but I think overall that's not the problem here. Number one, you have to start with the requirement. Desert Storm was a land war, because we had a situation where we had a friendly alliance and friendly host countries. We had 32 land-air bases that we could spend nine months building up, bringing the logistics over, and it was done exactly right and without quibbles. The Navy made a major contribution to it, of course, securing the sea lanes to get the stuff there, and then supporting the land war with Tomahawks and gunfire and strikes from the aircraft carriers.

But it wasn't a naval war, and so it shouldn't be used as a template for what naval requirements are going to be in the future. About 240 or so other crises in the last 40 years we've had no land bases that could provide that, and we had to move quickly in weeks or days, and the aircraft carriers and their supporting strike forces, Marine amphibious assault ships -- we're going to need them in the future, so we've got to keep that capability.

An essential part of that is to have a deep strike interdiction, whether it's against ships that are coming at you, backfires, or striking the land. That's what the Navy is not going to have. That's what they're losing now, and they better change to get it. They've got 10 different aircraft programs going on.

To me, I cannot -- I have yet to hear even the beginnings of a common sense

argument why we're going to continue to procure F-18s, because we already have enough F-18s for 24 aircraft carriers plus the Marine Corps. So I don't know why we're going to continue to spend the money on those when we don't have any deep strike aircraft.

It seems to me that the Navy is still operating its forces on too high an op tempo. I think the only way they're going to be able to hold onto a fleet big enough and operate -- keep a training level high enough is to shift to a lower level of operational tempo and to use more reserve cadres. I think Admiral Kelso has done some very innovative things with this idea of nesting frigates and so forth. But we've got about 100 frigates in the current Navy, counting reserve and active, and frigates, in the world of the future, are not going to be as necessary as other ships. We're going to have probably 50 Aegis destroyer cruisers, and I think that the mix needs to be looked at. We've got a lot of amphibious ships now, and we can use a lot of combinations, as the Marines have been very innovative in using commercial-type ships to carry lift and bring them ashore.

So there are lots of trade-offs that can be made, but I don't think a high enough priority is being given to protecting a deep strike interdiction, a dump truck that you need to lay mines, to do night attack and to do counter-surface warfare. The basic work horse is not going to be there. You cannot take 25-year old airplanes, put new wings on them and say that will take us into the next century.

REP. LANCASTER: Several of you mentioned the importance of unit cohesion training and that sort of thing. If we had not had the four or five months that we did to develop that unit cohesion in the field, to do training with live fire, if we had not had all of our supplies and materiel in place, what would have been the outcome? If Saddam Hussein had continued his drive into Saudi Arabia and had taken those ports and those airfields that he had built, then what?

COL. BOYD: Do you want that to be answered?

REP. LANCASTER: Yes, sir.

Well, I don't think you -- you can't predict what's going to happen, and I agree this was a unique campaign. We had time. I mean, we had cohesion in the outfits that went over there, but on the other hand, they also had to act as an integrated whole. They had all kinds of time to practice, like you indicated. On the other hand, we may be forced into a situation like we had in Korea in the past. We have to send people over and they're going to have to learn on the job, and therefore, you have to have the training.

Now, if they would have gone down in Saudi Arabia further, and -- of course, they would have had a little bit of difficulty because their logistics system wasn't all that great either, but nevertheless, we still could have prevailed. It wouldn't have gone as fast. Because remember, he couldn't have gotten all those ports. There's other areas by which you can get in there. But I wouldn't -- you know, you're not going to do it quickly like you did in the Desert Storm operation.

But to say it's going -- you know, not having looked at it in detail, to say it

would happen in a particular period, I'm not so sure. On the other hand, there might have been some political constraints if we did that, too. How far do we want to get committed into that? In other words, that could go either way relative to our allies and that.

REP. LANCASTER: Senator?

SEN. HART: Congressman, I think at the very least we would have found out the capabilities and limitations of the large aircraft carriers.

REP. LANCASTER: Would we have had the unit cohesion already in place that I think did develop to a large extent because of the ability to train in the field and in an unusual setting that might not exist here and at other bases?

MR. HICKS: Our training facilities are really marvelous, and John has talked about that. I think that if you go to Fort Irwin, which you should all do, it's a marvelous place and they get training across the board. I think we had people who were well trained to go in there ready to do it. The problem would be where they'd be based and so on. I mean, it would have been a much more difficult situation if -- but, you know, you have to think about the role of Israel and so on, Egypt. There's other places we could have operated from, and so I think we would have done the job, but it would have been a lot more expensive and cost a lot more lives than what happened.

REP. LANCASTER: What role did our operating in a very austere, alcohol-free, social-life-free environment have on the operation?

MR. HICKS: It's a sobering thought, anyway.

REP. LANCASTER: Anybody want to touch that one?

MR. HICKS: I don't think it had any impact, really. Made people on edge, probably, but I don't think anything else.

MR. BOYD: I do think though, that by the nature of your question, which you'll probably find out, you're really talking about cohesion not only at the lower levels but the interaction with the higher levels, and I think because they had time to get over there, from an overall organic viewpoint you would obviously have more unit cohesion. But that doesn't mean if you had to go in on a quick shoot basis that lower level units wouldn't have it. You might have a very difficult time, though, to have everything well integrated at the various levels

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REP. LANCASTER: Colonel, I have gone to another question. I am not talking about time now, I'm talking about the situation that existed in the field with no alcohol, a very austere environment, absolutely no social life on off-hours. What role did that play? Was that only in unit cohesion or did it also make the personnel sharper in the operation of their equipment?

MR. HICKS: Let me make an interesting point about aircraft availability. Now we all know that we have aircraft that have about 80 percent, depending on what available situation. In that war, of course, as you know, there were almost 100 percent, just like the Israelis. People were working as long as it took to work to get them back in the air, so -- but I would say that happens in any war. When you're in war the issues of having alcohol and places to go to dance are way back from the fronts and the fronts --

REP. LANCASTER: See, I thought Secretary Lehman would jump on that because I am

a Navy man and that's the conditions under which we always deploy.

MR. LEHMAN: I knew you were going to say it, that's why I didn't say it.

REP. LANCASTER: Thank you.

REP. ASPIN: Let me ask a follow up of the question though because of all of the components of the military reform agenda, you know, making warriors not bureaucrats, maneuver warfare, unit cohesion, I thought that the case is that -- the hardest case that there has been some progress on is the unit cohesion part of it. And I do think that there is some pretty good evidence that a lot of unit cohesion was built over five months in the desert that otherwise would not have been there, and therefore the units fought better. Why is it so hard? Shy Myer (sp) when he was Chief of Staff of the Air Force made a stab at it with a notion called a "cohorts" and there was some attempt to make some unit cohesion but it was abandoned in the light of other kind of personnel needs of rotating troops and getting tickets punched and getting people moved around.

If you really wanted to do this without having five months in the desert before the next war, in other words how do you do it? I mean is there any new thinking on how you ought to try and do this, fill this into -- particularly in the Army and the Marines I guess, in the ground force units.

SEN. HART: Well Chairman there is no magic to it, I think you just change the personnel policy. It is a bureaucratic policy, one driven by careerist kind of considerations, ticket punching as you have suggested, some theory that is better to have tried -- you know, have everybody experience 100 jobs rather than do one, or two, or three well. It's a philosophical, cultural, sociological phenomenon and I think one just has to make the basic philosophical choices and say "No, we are not going to do that any more. That's not important. What's important is knowing your buddy, knowing who you are fighting with." And no one that I know of is arguing a pure regimental system but these are questions that periodically ought to be asked.

We just got this mentality in our country that this is the way it's done and this is the way we do it here and we are not going to question it. Well why not question it? Question it. Test it.

REP. ASPIN: John?

MR. BOYD: Part of this comes out of a --

REP. ASPIN: Talk into the mike again.

MR. BOYD: Excuse me.

Part of this comes out of some World War II experiences. You might be familiar with what I am talking about here, where when we put people in combat replacements we put them in as individuals and we didn't plug in units. And what was done, where this issue became very manifest in the reform movement was some work done by Martin Ben Craybell (sp) in a book called "Fighting Power." And if you've never read it, I would encourage you to read it.

Because what he did was he looked at the German Army performance during World War II, and I am not trying to say everything the Germans did is right, but one of the things they did was they did not people in on an individual basis. They would take units out and plug in whole new units. The result is then by doing that rather than have some new guys in there that couldn't fit in with a group,

they already had that unit cohesion established.

Well, on that basis it's very good. On the other hand, as Senator Hart pointed out and others pointed out here, we have personnel policies where we're constantly moving people about individually into the units. And so, what you really have to think about is how do you want to have your combat units be laid out and really you do want to plug them in as units where they've already worked together. Each one understands how the other people's capabilities and limitations are so they can function as an organic whole. And you sort of have to work backward from there and then say, "Okay, instead of tailoring personnel policies for the convenience of the bureaucracies, you've got to look [at] what kind of combat power do you want to put out there, if you want to put in these whole units that are cohesive, then what kind of personnel policies do we set up so we can play in that direction. And I don't think that's even been done yet.

Now I may -- you know, some people may say otherwise. I know that -- (name inaudible) -- definitely tried to do that, because he was familiar with that, but it sort of didn't take.

MR. LEHMAN: But one of the problems has been that Congress has looked at the military as a kind of social engineering challenge -- (laughter) -- there are so many "ilities" and requirements that are driven by legislation now that drives -- if you look at managing a naval officer's career today, what he's got to do just to get his basic warfare qualification if he's a submariner to go through nuclear power school and so forth, and then get his ship tours, and then get his basic professional schooling, and then get to learn something about the aviators who are on top and the surface warfare people. And then you want to get him a tour in the Pentagon so that at least he's got some familiarity with the budgeting and other processes, and then you lay on top of him a four-and-half-year requirement to get away from the Navy to go to a joint -- to be on joint staffs and joint schools, in addition to learning his own professional things. And then you lay on the promotion sequence.

So you cannot be promoted to captain until you've had a command and you can't get a command until you've screened and you can't screen until you've been through such and such a school. Already it's impossible for an aviator, for instance, to go through a nuclear carrier command school, to ever come to Washington, and he's about three years behind his peers to get there. That's without any joint tour -- without any joint tour at all. So what it means is you're compressing. Already against everybody's best judgment, they've cut the squadron command tour, for instance, down to 13 months instead of two years -- in some instances, some 18 months.

So you're -- everybody's average -- the average flag officer has moved 30 times in his career. You know, he's just going like that. And more rather than fewer requirements -- more compressions have been added by Congress in the last five years than less. So you're not going to get unit cohesion if you've got these people cycling with the velocity of sound through assignments.

REP. ASPIN: Let me [ask] one more question, and that is we've got two people who are very active in the military reform and two people who are very active in the Pentagon and other business. Let me ask -- tell me what you think differently

now because of Desert Storm. What has Desert Storm caused you to say, "Well, I used to believe A, but now I believe B"? Is there anything like that, Don?

MR. HICKS: Yeah, I think that I guess that I am not totally surprised -- one of the things I was surprised about, frankly, was the excellent way that the command used the new technologies. I mean, that was something that -- I think Perry (?) expressed that last week, too. You might have doubted from past experience that they'd really take advantage of these things. They took advantage of all of them, I thought in a very fine way.

I think it also showed that if you find yourself in a situation where you have a survivable asset that has very, very accurate weapons that you can change the whole course of the war very quickly. It's the intensity at the first of the war, if it's broad enough, it can make the difference. And I think that's what happened in Iraq.

So, I stress the fact that to me we've always talked about roll-back. We've always thought about knocking down, either passively or actively, the defense systems and going in and clearing things out, letting the things that aren't protected come in later. We know the massive amount of aircraft we have to have to protect the guy at the front. I mean, talk about staffs. There's a huge number of staffs that go into the guy who's dropping the bomb and most of the things we've done in the Air Force.

I think that Desert Storm proved we don't have to do that. That we can in fact with very few airplanes comparatively and precision weapons, do a magnificent job. And I think that's going to set a trend that will be a major in the Air Force. It's proved to the Air Force something that we -- I think those of us who've been working this thing thought was true, but this was the proof.

REP. ASPIN: Do you want to -- John?

MR. LEHMAN: There were no really big surprises to me in the way the Joint Command performed or the units performed or the weapons performed. That's really what I had expected.

There were some pleasant surprises in the success of the sealift programs, although the publicity seemed to go the other way. It was an enormous logistics effort that would have been utterly impossible in the early '80s, and the ships worked incredibly well. These old dogs that have been sitting in the James River and the East Bay in San Francisco all these years, most of them came out quite well in short order and went right to sea. The SL-7s worked brilliantly well. One ship had a cas rep which was a very good average.

But the real star were the prepositioning ships. I was a bit skeptical that the prepositioning concept would work as well in practice when the whistle blew as it did in theory and exercise. It worked better. The equipment came out in excellent shape, and it was, again, an innovative concept that the Marine Corps came up with that the Navy was very skeptical about, the Army rejected totally, and it worked brilliantly. So it would lead me to say we ought to do more of it and do more -- take some of these POMCUS sets and put them to sea rather than building gold-plated, fast-deployment ships.

SEN. HART: As I said earlier, Chairman, because the people and the ideas worked so well, we really didn't have a prolonged test of the equipment under extreme,

difficult conditions, so I would hope that we would weigh very carefully any kind of procurement philosophy based on this.

For example, I've heard recently second or third hand that a lot of the tanks we hit had no people in them and therefore weren't moving too fast. I don't know whether that's true or not, but it would have an effect on all these grand conclusions we make about the weaponry. I have to take the occasion -- although it's not on your point -- to say that I still believe that we fought the war over oil, and because of the grand success of the war, we have totally overlooked that fact and are taking no steps to make ourselves independent of Persian Gulf oil.

COL. BOYD: Well, some things I'm surprised at. The big surprise to me in one direction was -- that turned out better than I thought it would turn out -- was how rapidly, once they got the campaign going, particularly the ground campaign, how they concluded it, and there were so few casualties. And I think also everybody probably not only in this room but General Schwarzkopf himself was surprised at that, how well it went.

The other surprise which probably I was surprised at was the use of the night vision devices so they could operate at night, and they certainly played a big role, because I'd been an advocate from way back that we should do more of the night warfare, and I'd seen some of those used over in Southeast Asia when I was there. Of course, they were much more primitive. And I think when you start talking about the M1 tank, for example, you've got to be very careful when you start evaluating that tank what parts of it are you talking about, what really worked, and that's why I'd like to wait until the hardware evaluation came in.

However, one of the things that did work out very well was that thermal sight in that 120-millimeter gun. And as somebody pointed out here, when they arrived near the Iraqis, they had already bailed out of their tanks because we were shooting -- we were picking them up, (blazing ?) them, getting the rangefinder and pumping rounds into them, and they hadn't even picked us up yet. So their tanks were starting to go up and the rest of them didn't know what happened, panic and chaos, they took off.

So you have to give gold stars for that kind of equipment. And not only that, but just the night vision devices themselves so they could get in there and operate very heavily at night. And I think one of the things -- like in World War II, of course, they didn't have that stuff, and they found out that few people that went in at night, one of the reasons why they didn't want to do it, and this is a very important aspect of not only maneuver wars but any warfare, is some of the reasons why they say they didn't want to do anything is because it's so confusing and disordered.

But that's not the issue. The question is if you train at that, even if it's difficult and it's confusing and disordered, and the other guy doesn't do it, he's going to be more confused and more disordered than you do, and you generate this enormous leverage.

See, it's this penchant for going for certainty, and you can't always go for certainty. The question you have to ask yourself is, "What happens to the other guy if I do it? Is he going to be more confused and disordered than I am?"

Great." Guess what he's going to get? He's going to get that. And that's one of the things you do get out of the night vision -- I mean, out of the night operations, particularly when you have these night vision devices. So I think that was a big plus.

REP. ASPIN: Gentlemen, thank you very much. It was a really very, very interesting morning.