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**Seminar on Intelligence, Command,
and Control**

**Thinking About Command and Control
C. Kenneth Allard**

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Thinking About Command and Control

C. Kenneth Allard

Lieutenant Colonel (U.S. Army) Kenneth Allard is the author of Command, Control and the Common Defense (Yale University Press, 1990), a book which resulted from his work at the Harvard Program on Information Resources Policy and the Fletcher School of Law & Diplomacy. In 1991, this book won the Furniss Prize awarded by the Mershon Center at Ohio State University, and was also placed on the professional reading list recommended for all military officers by the Chairman of the Joint Chiefs of Staff.

In 1986, as an Army Congressional Fellow accredited to the House Armed Services Committee, Colonel Allard helped to draft the landmark Pentagon reform legislation that became the Goldwater-Nichols Act.

Recently selected for promotion, his military assignments have included service on the West Point faculty and in the Pentagon as a special assistant to both the Army Chief of Staff and the Under Secretary of Defense for Acquisition. His career has also included command of an advanced individual training company and overseas service as an intelligence officer. Colonel Allard also currently teaches as an adjunct professor in the National Security Studies Graduate Program at Georgetown University.

Colonel Allard addressed the seminar on 7 February, midway between the start of the Desert Storm air and ground campaign.

Oettinger: Our first guest this year has the distinction of being an alumnus of the very first session of this seminar in 1980. It's nice to welcome him back as a speaker. And, although modesty has not been one of his shortcomings, he may be too modest to stand up and advertise his book, so I'll do it for him.

Allard: Wrong. I've got brochures.

Oettinger: He's got brochures. So don't leave without being aware of *Command, Control, and the Common Defense* by C. Kenneth Allard, published by Yale University Press earlier this year. It's on its way to becoming a best seller. It is one of the two recommended books for the course.

Allard: Tony, thank you. It's a great pleasure to be back here from whence I came, if for no other reason than to show you that it is possible to actu-

ally survive this course and go on to lead a somewhat normal life.

I've got to begin with a couple of caveats. Number one, please do not confuse me with Secretary of Defense Dick Cheney or General Colin Powell. I have no authority whatever to speak for the Department of Defense. So please give me all of the deference that Harvard traditionally reserves for us obscure bureaucrats that have nothing but our own opinions to offer you folks.

The second thing, a very real concern, is the fact that we are at war, and that imposes some particular constraints on any serving military officer. I would stress to you that I literally know nothing about Operation Desert Shield or Desert Storm. Like you, I am entirely dependent on CNN, which gets us to about the same data level as Saddam Hussein in understanding some of these issues.

It's great to be back. Coming in today I was reminded of a past occasion when I was leaving the Kennedy School on a Friday morning. Prof. Bill

Kaufman had a great course that he taught down at MIT on nuclear weapons. It was necessary, if you wanted to take that course, to leave the Kennedy School and its wonderful confines, and go down to the other end of Mass. Avenue. As I was on my way out the door one Friday morning, who should I pass on his way in, but Professor (and then Dean) Graham Allison. I think he sensed that an escape was in progress at that moment, because he asked, "Where are you going?" I told him, and he said, "What are you going to MIT for?" And I said, "I'm really in pursuit of the best of two worlds: an MIT education and a Harvard degree." He was noticeably shocked at that moment, but I think that's where his idea of competitive strategies really began.

I mentioned Dean Graham Allison because I am very fond of his book, *Essence of Decision*, as indeed anyone who has graduated from the Kennedy School must be. It had some major insights into the way we think about some very complicated, very complex issues — totally beyond what may have been said about the immediate subject matter, the Cuban missile crisis. Sometimes those intellectual landmarks are extraordinarily useful, and that is particularly true when you start to talk about the field of command, control, and all the things that tend to go along with it. As you begin to get into this, I think you'll find that you can go crazy on some of the acronyms. The best thing I've ever read on that was a tongue-in-cheek article on "C³I," including calamine lotion, carpetbaggers, and the contrabassoon. There are otherwise reasonable people who will sit and talk about TC² or TC³M, for tactical command and control countermeasures, which is a whole different field. You can go crazy sitting there listening to this stuff.

What I'm going to try and do today is to suggest some guidelines as you begin to approach some of these issues. And since many of you may be going back to distinguished careers in government, I hope that these are lessons that you might be able to take away from this course.

Let me introduce that topic in a very general way by talking about Operation Desert Shield/Desert Storm. I think that it is probably the first of what can be characterized as the 'Information Wars.' That is not to say you haven't had information regimes present in any number of other conflicts. In American military history, for example, one thinks of the tremendous impact of the telegraph. Matthew Brady's photographs of the Civil War also changed the way that people thought about war and certainly the way they conducted it.

Oettinger: People forget that Abraham Lincoln was a railroad lawyer. They think of all this log cabin nonsense, but he understood railroads, that's how he made his money, and that's how he made all his connections, pun intended.

Allard: In Tom Wicker's book on Lincoln, you see Lincoln spending all of his time in the War Office, next to the telegraph, watching as his generals screwed things up.* You're aware of the fact that this was a totally new instrument of strategic control. We can say the same thing about the impact of the first field phones, the first wireless telegraphs in World War I, the radar that characterized World War II, as well as the first generation of PGMs, (precision guided munitions), in the first quasi-television war — Vietnam. What you clearly have today in the Persian Gulf is a quantum leap. We've never fought a war on a soundstage before. We've never fought a war in which you had the ability to do real-time information flows. I don't know if it occurred to the Iraqis that there was something questionable about having what amounted to a forward observation post in their capital city at the very moment that it was being raided from the air. But that was, in fact, exactly what we had. We also had the same thing in every Patriot/SCUD duel, with correspondents trying to wax eloquent about what's going on. What's very clear is that some things have changed. I would argue that CNN (Cable News Network) and precision guided munitions are different aspects of the same kinds of technology. The same kinds of technologies that make one possible make the other possible as well. We'd always suspected that electronic command and control could have a very critical role to play in modern warfare, but I don't think that point was really brought home to many of us until we actually saw the pinpoint destruction that these weapons have been capable of thus far in the war. That is not to say that things don't get considerably more complex as we apply ourselves to different operational environments, but more about that in a moment. My point here is that military information systems and news organizations are almost parallel universes in which information is acquired, exploited, and applied against different targets. The very difficult thing to do is to make any sense of it in terms of applying boundaries — it's like a nervous system. Where do you begin to say what's part of one and what's not? How do you draw those

*Tom Wicker. *Unto this Hour*. New York, Viking Press, 1984.

distinctions? And, of course, if you're the analyst trying to do this, it becomes an interesting proposition because there's no way that you can get your arms around many of these things. So, what are some useful distinctions that can be drawn?

Oettinger: I asked the class to read for today this piece of mine called, "Whence and Whither Intelligence, Command and Control, the Certainty of Uncertainty." In the opening statement in my paper was the fact that there certainly has been progress, and that's the statement that Ken has made. Enormous progress has been made, and yet at the same time there is the nagging feeling that some things have not changed at all and hence the subtitle, "the certainty of uncertainty." We now have all those forward observers and lasers in the noses of either the airplanes or the missiles, and so on, but some fundamental uncertainties remain, including the interpretation of what it means to have hit something. We may know better than before that we've hit it, but how to interpret what it means remains somewhat cloudy. There remains what Clausewitz calls "The Fog of War," and I hope you did not mean to imply that any of this wonderful technology has completely thinned the fog.

Allard: No. One of the things I would like to talk about is some of the differences in the operational environments of warfare. So let me put that off until a little bit later on.

Let me just try and briefly summarize some guidelines, most of which I got from this gentleman here on my left. They came up when I was grappling with the problem of joint warfare.

Allison talks in *Essence of Decision* about a problem that I think that you will all wind up wrestling with: the level of analysis. You can also, of course, talk about units of analysis. It really does help to know the difference. What do I mean by that? If you are finding yourself getting too close to the classification guidelines — which is easy to do when you write about command and control because many of the systems are classified — it's probably time to step back and ask yourself what is significant. Sometimes it helps to put some distance between yourself and the subject that you're trying to analyze. By the same token, you heard Professor Oettinger refer, time and time again, to what he likes to call nebulosities. If you find yourself dealing in nebulosities, you're probably too far away from your data and need to get a little bit closer to it. There's no right or wrong answer here.

I like to use the metaphor of a map: if you're flying from Washington to Boston, particularly on a

day like this, it really does help to have a map. The scale that you're looking for is probably about 1 over a million. If you want to call in artillery once you arrive, the map scale you're looking for is about 1 over 50,000. So again, the scale that's appropriate to this level of analysis is determined by the data you're looking at.

The second point that I think you'll find useful is to focus on structure. Organizations in particular are seldom, if ever, value free. If there is an organization, chances are it has been set up with some coherent purpose in mind. Chances are also better than good that the organization represents a strategic vision of sorts, that it represents a division of labor and that it represents "turf," or someone's conception of what turf is. Most organizations tend to show that they are the results of previous bureaucratic compromises, turf fights, battles, you name it. But they are there for a reason. How do you get hold of structure? I have a certain preference for going after primary sources, the basic regulation, the basic document, the basic law. Go after those things because that is where you will tend to find the structural constant laid out.

I don't know how many of you are familiar with the notions of total quality management (TQM), but that is my third point. The Deming method of TQM focuses on this idea of process. If you want to do it in the political science sense, you can use the Allison model of bureaucratic subroutines. Why the idea of process? Well, because that's how things tend to get done. Who are the players? Who decides? What do they decide? About what? And most of all, who benefits? Those are very critical questions, particularly in the command and control world.

Oettinger: I entirely agree with what Ken is saying, and I just want to underscore, because there's a tendency in doing and applying this advice on structural process to misinterpret things that look screwed up. You look at them and say, "People can't be that stupid, and there must be a better way." Then you start leaping to the invention of a better way. I would say, if you have that impulse, stop and think about it because it may indeed be stupid, and then maybe it was worth inventing a better way. But often you'll find that the stupidity has been around for a long time, and then you say to yourself, "Can everybody be that stupid that long?" The answer is probably not. When some stupidity persists for a long time, the odds are that it's serving some function, that it represents some political optimization which you have missed and have not understood.

So, when dealing with either structures or processes that are in place, and they look dumb to you, don't leap to the obvious conclusion that they need to be changed, please. Now the reasons may have been valid 25 years ago, and structures have not yet changed, but there's a lot of empirical questions that you need to ask before you jump to conclusions.

Allard: Absolutely. So again, if you are asking yourself these kinds of questions about how do you scale the data, what are the structures, what are the processes — then you're probably in a much more reasonable position to ask yourself exactly that question. What's critical? What is really going on here? I would stress to you the fact that analysis is different from description. As an instructor at West Point, I used to constantly argue that point to my cadets. They loved to describe something, but analysis was a little tougher problem. The thing that you've got to do is to say, "What's critical, and how do I analyze it? What are the elements that explain what is really going on?"

Those are just some of the lessons that I learned, more or less, the hard way. For example, I started out being concerned about a system called JTIDS (Joint Tactical Information Distribution System), that our good friends at the MITRE Corporation pioneered back in the 1960s. JTIDS is a superb example of one of those overnight success stories that's been going on for 25 years, like the Patriot missile. JTIDS is one of those systems, conceptualized in the 1960s, developed in the 1970s, developed some more in the 1980s, and if we're lucky we might get it in the 1990s. Then again, we might not! That was the sort of problem that I got interested in.

I found that to describe this thing adequately I had to go all the way back to the American Revolution. I wish you all much better success in bounding the problem than I obviously had. Question?

Student: You mentioned the Patriot. I don't think it's a success.

Allard: You mean in terms of the defense budget, is that what you're referring to?

Student: No, the Patriot is an older missile.

Allard: It has been around. You can argue about how successful it has been, although I think that most people would agree that it's been relatively successful in the Persian Gulf. You might want to disagree with that, and I'm not here to make a brief for it one way or the other. My point is that its public consciousness is right now about 3 1/2 weeks old, while it has been around for over 20 years. This

is true of a great many things in the command and control world.

Student: No things are perfect, and systems ought to be measured against what is generally considered successful. Air defense systems run somewhere between 50 and 75 percent, 75 percent on the high side, 50 percent on, call it the average side. If you can get 80 percent of the targets, people think it's successful.

Allard: I defer to almost everybody in terms of understanding how air defense weapons go. The only thing I know is that I'm marginally competent with a 12-gauge shotgun; anything beyond that, I defer to everyone here.

I would like to try to illustrate how I worked my way through the process. The problem that I'm looking at, that I'm sort of fascinated by, is this issue of very highly integrated command and control — in most cases, computer-based technologies. They handle an awful lot of data at very high speeds. They can do an awful lot with it, but there seems to be a glitch between that capability and what we know and understand about human organizations, that is, human beings and the way they work. That is what I began to try to look at. There was a reason, particularly with military organizations, why you had these kinds of problems, because military organizations are very conservative. In most cases, because they are made up of very conservative people. I noticed there was a critical problem here that I had to deal with almost at once: What level of analysis did I want to apply to this problem? If I wanted to show the cleavages between technology and organization, I could have pitched that at about three different levels. I could have kept it at the intraservice level, because in each one of the services you've got communities that use command and control. In fact, the Army has a five-pointed star that shows the different communities — the maneuver, support, and intelligence communities that use these things. So, I could have pitched it at that level. The next level was the interservice level: Army, Navy, Air Force, Marines. The final level could be the international level, the coalition level, because in NATO that's exactly the problem that you've got. The problem of standardization, interoperability has been present since the creation of the alliance.

So, how was I going to do this? I looked around for structure, and the one thing I began to notice that really seemed to account for this problem was at that second level, the interservice level. I had the

benefit of talking with people like Professor Frank Snyder, who told me what a totally different service the United States Navy was, and I began to find there was some persuasive evidence on this point. The more I looked, the more obvious it became that the services were very, very different. But I was not satisfied because all of the explanations for this were tautological. You couldn't disprove them. "Well, yes they're different because, well, . . . they're different." That wasn't quite what I was after. *Why* are they different? Hence, my point about the difference between description and analysis. I know they're different. We wear different uniforms. I understand that. I began to realize that I could not do this until I began to focus on something else, and that was this question of process.

I spent some time at the National War College, and ran into some people who did a good job of interpreting the classical strategic thinkers. One of them said to me one day, "You know, if you're talking about what makes the services different, the one thing that stands out, in addition to the structure, is the way the services *think* about what they do." That meant land power in the case of the Army, sea power in the case of the Navy, air power in the case of the Air Force. The light went on and I began to say, "Wait a minute. Let's begin to uncover this." That is what is critical. Because, the services are going to change, and the processes are probably going to change, but there's something that is going to be the constant. That's the thing that I want to focus on.

What that generated, was a focus on strategic paradigms, and I use paradigms in the sense that Thomas Kuhn used them in *The Structure of Scientific Revolutions* as an organizing concept — one that is definitive, one that helps to sort various things out.

Oettinger: Thomas Kuhn's book is 30 to 40 years old, and it is still an excellent book for those of you who have not read it. If you read nothing else in this course, reading Kuhn's book, I think, is well worth it. Thomas Kuhn, *The Structure of Scientific Revolutions* is still in print, and certainly in every library around here because Kuhn was here in the 1940s and 1950s.

Allard: It's an intellectual landmark. You've got to grab hold of those things because you're dealing with a field like command and control in which there aren't an awful lot of landmarks, and everything seems to be linked to everything else.

Let me try and briefly summarize what all this really means.

This is what, in my personal point of view, really accounts for some of these key differences: We're a very pluralistic society. We don't have a strong military tradition. We don't like to centralize power at all, much less in military hands. Because we tend to be extremely pluralistic, it affected the way we organized our defenses. For the first 150-odd years of their existence, the United States Army, at that time known as the War Department, and the United States Navy were parts of totally different Cabinet agencies. Legally, they had as much to do with each other as Commerce and Treasury do today.

There was one officer of the government who was responsible for reconciling their actions. He was called the President. Now, that was a division of labor that made a great deal of sense because there was the land and the Army was in charge of that; and there was the ocean, and the Navy was in charge of that. Unfortunately, along came the airplane and screwed it all up. Then there were not just two operational environments but three. As all of this evolution was going on, basic ideas were being formed — doctrines that formed into notions of strategy. Given our structure, it was natural for these strategic ideas to be formed around the ideas of land power, sea power, and, much later, air power.

For the Army, land power was represented by Clausewitz and Jomini. If you don't believe the impact that Jomini had on the United States Army you miss the entire point of that recent PBS series of the Civil War. There was absolutely no reason for people to employ Napoleonic tactics in the Civil War because those tactics were 50 years out of date. They were made technically obsolete by the fact that the individual riflemen could hit a target at 250 yards. It made no sense to have the *levée en masse* when you get slaughtered first by the artillery and then by the individual infantrymen. Although battlefield adaptations were made, lasting reforms were not, because the Army was victimized by its own success in the Civil War. It led to about a 30-year hiatus in our strategic thinking. Why? We won. How can you argue with success? But you notice that toward the end of the 19th century the Army fully came to terms, not so much with Jomini, but with the notions of Clausewitz. They finally accepted the idea that there should be general staffs, as well as the idea of getting all of the nation's resources essentially focused around the notion of

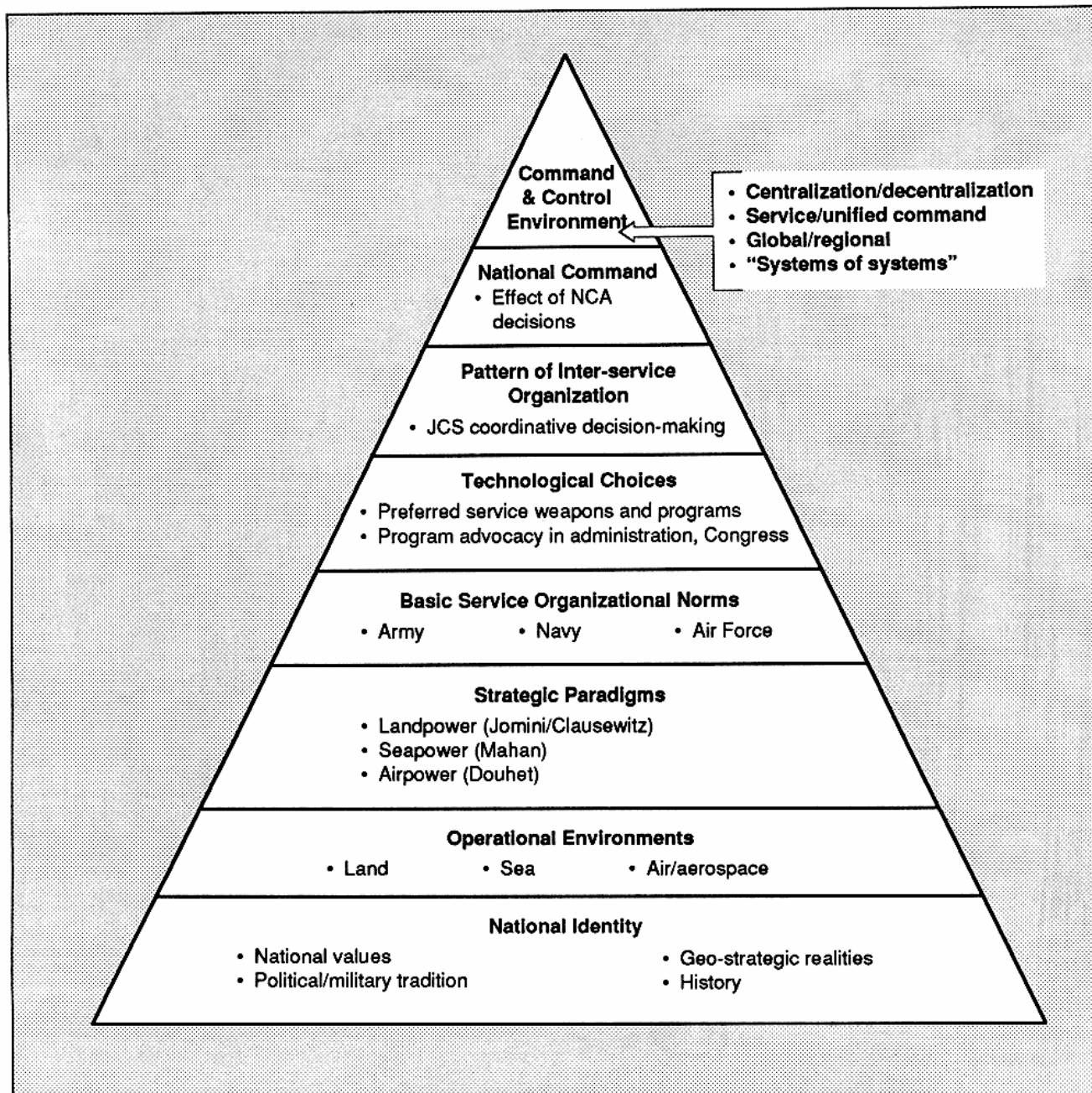


Figure 1
Key Determinants of Command and Control

total warfare. That was what the land power paradigm was all about.

What happened to the Navy at that same time? A fellow called Alfred Mahan combined a distillation of British maritime history with a good bit of Jominian formulations thrown in. His powerful, ideological niche for the Navy persists to this day.

Oettinger: Could you give us the gist of Jomini, Mahan, and Douhet, for folks who haven't read the book.

Allard: Trying to whet their appetites, Tony. Jomini was the great articulator of Napoleonic tactics in the 19th century. What you see there, in an age of reason and enlightenment, is the reduction of the

tactics of land warfare, as well as the grand strategy of land warfare into almost geometric terms. He talks about strategic centers of gravity, as does Clausewitz. But with Jomini they are highly geographical, very specific, so you can almost lay them out as a matrix.

One of the great articulators of this in the American Army was Dennis Hart Mahan, who taught at West Point. He had a son who went to the Navy, Alfred Thayer Mahan. The younger Mahan was also a student of Jominian concepts — and their application to almost three centuries of British naval theory and practice. He applied the notion of Jominian tactics to the sea in terms of sea control. I use the word paradigm because it's a conceptual set, almost a gestalt. Mahan says, "The sea is not an obstacle. The sea essentially is a highway that can be used." How do you control that highway? You have fleets, dominated by capital ships. It provides the ideological rationale for what, particularly under Teddy Roosevelt, becomes the development of American naval power.

McLaughlin: Ken, I'll just add a footnote about the impact of the rifle — by the time you get to the Civil War, what Jomini and anyone French forgot was the fact that Wellington proved that in 1809–1812, in the Peninsula when he destroyed the French Army using rifles. Again that was conveniently forgotten until much later.

Allard: Exactly. They were also victimized by success, let's face it.

The Air Force is fascinating because of the stalemate of World War I and the technical development of the airplane. And again, it almost supersedes the land and the sea. If you read some of the original writings of Billy Mitchell and Giulio Douhet, it's pretty messianic stuff. What you see there is that air power is the decisive element of warfare. You can fly over land and sea and dominate both from the air. With the Navy and the Army, you had organizations that gradually developed an ideology. In the case of the Air Force, the ideology came first. I need hardly mention to you that this problem is with us today; if you don't believe me, pick up today's *New York Times*. There's all of this nonsense about the fact that you can win wars like the Persian Gulf through air power alone. But that's exactly my point: these paradigms have a tremendous residual effect.

What do I mean by "service organizational norms" and "technical choices"? Essentially, what you've got are the services that are responsible for

equipping, training, and developing their own forces — particularly after 1947. You have the Air Force now as a separate service.

Again, I'm not sure if this is structural or process, but when I began to ask these questions about what's critical, one of the things that really got to me, and I wish I had been smart enough to think of this on my own, was something General Paul Gorman said. He's a brilliant man, with a distinguished military career, who wound up as our CINCSOUTH in Central America. He was also a member of the Packard Commission. And he said, "You know you're ignoring something. One of the things that makes command and control so very difficult between the services is not only that their operational environments are different — land, sea, and air — but the *numbers of things* that you must command and control differ tremendously between the services." This point is illustrated by figure 2.

You've got a three-star Navy officer who gives the order to turn left. How many guys does he have to persuade of that? Anywhere between 10 and 100 ship, aircraft, or submarine commanders, because that's typically what a fleet will have.

In the air battle in the Persian Gulf, his USAF counterpart has got anywhere from 100 to 1,000 *things* (aircraft as well as reporting stations) that he has to command and control.

Now, the Army component commander is the next order of magnitude beyond that, just by virtue of the number of *things* (tanks, troops, artillery, aviation, support elements, etc.) that he has to command and control. Now what does that mean? That means that you've got almost reversed images of the most important command principles. The Navy will centralize down, at the lowest level, the ship and its quarterdeck. What does the Army do? The Army command structure ultimately deals with lots of sergeants in command of lots of tanks. We have no choice, we have to decentralize. So that's one of the major differences between services' command principles. Guess what? Once I knew this, the rest of it was done. I figured, wait until Oettinger sees this!

Oettinger: Someone asks "Why are all these things different and apart? We ought to centralize it and make it all one because it would be so much more effective." As he starts to look at it, he says, "Well now, wait a minute, there are good reasons." The argument, if you look back into the records of the seminars, has been given somewhat differently by General Robert Herres during one of his visits, just before he was Vice Chairman of the Joint Chiefs.

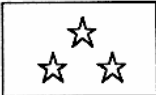


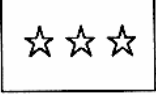
	USN 	USAF 	USMC 	USA 
Moveable Subordinate Entities	10^1-10^2	10^2-10^3	10^3-10^4	10^4-10^5
Rank of Subordinate Leaders	HIGHEST			LOWEST
Communications with Subordinates	BEST			WORST
Information re: Subordinates	PRECISE			VAGUE
Tactical Flexibility	GREATEST			LEAST
Command Principle	CENTRALIZE			DECENTRALIZE

Figure 2
Service Organizational Differences:
Relevance to Command and Control

He said, "Look, the military is too big. You have to put it in pieces." So, that just because you cannot run it as one, having pieces is unavoidable. But once you say pieces are unavoidable then contention among the pieces is unavoidable. Now what Allard has done is to go through the many reasons why the pieces are the way they are, which has something to do with the environment. They're not entirely arbitrary because the Herres are going to say, "It doesn't matter, you can cut it up any old way." Allard is making an argument that says there are some reasonable reasons, timeless reasons, why they've got to be cut up in this particular way: environments. And then he says that an extremist

argument over pieces versus central is absurd and not worth spending any time on. That the argument worth having is at any given moment over which way adjustments need to be made. That's the only interesting question, and so I emphasize this because it goes back to my theme that I will keep pounding on you ad nauseam — the notion of balance. As you've said, if you accept the notion that there are merits to centralization, and there are merits to pieces, then you don't look at trying to go to either extreme, you keep asking the only worthwhile question which is for this purpose, or this point in time, how do I adjust the structure of the pieces.

Allard: I think that you would probably find that this is not a dissimilar problem from that faced by any large organization. AT&T has got exactly that same problem, and so do other parts of the American government. Any large organization is going to have this problem.

Oettinger: And they are not as fortunate as the military, which is indeed tethered into something as bedrock as land, air and sea — in some other universe it might be different. The corporate situation is much worse because they are much more self-defining and so the question of what's bedrock is much more up in the air, and therefore much more difficult, and much more contentious for civilian organizations.

Allard: And we can talk in the Q&A about total quality management.

My point here as I came up to the end of the line was this. I understand that these strategic paradigms — air power, land power, sea power — are valid in and of themselves as justifications for the services. But — and it's a very, very big but — the problem is that each one of those paradigms is in its essence an argument against the other two. Talk about land power, and I say even to my fellow soldiers, "One-third right, two-thirds wrong." Same thing applies to air power and sea power. Why? Because there's a basic technological fact of life here. As the dimensions of warfare have increased, so have the command responsibilities, and concentrating on one element to the exclusion of all others is folly. What we're talking about here is the Joint Strategic Paradigm.

This overarching approach to strategy is one of the things that we don't have in this country. That's one of the reasons why we're having this enormous problem right now. Trying to decide whether air, land, or sea is more important is an argument that has all the intellectual validity of the "less filling tastes great" controversy. To me this great problem is more apparent than real. The United States is the quintessential aerospace power, it is also a maritime power, and it has continental responsibilities, which means putting big, heavy forces on the land in order to win. We are also a global superpower with worldwide interests.

So to me it's axiomatic that you need that joint paradigm. But I don't know if you'll ever get there from here.

Oettinger: Be charitable, because the illusion of the independence and irrelevance of the other two was understandable under other circumstances to

link that technology mix. You look at the scale of the war in the Gulf, it's sort of mind-boggling compared to earlier wars where one could be forgiven the illusion that mucking around a continental size desert is a land war, and who gives a damn about anything else. In the scale created by today's technology, the ocean is a lake, the land is a small mass compared to Napoleonic masses.

Allard: And the flying time is 30 minutes.

Oettinger: So it's understandable that somebody schooled in an era when the scale was different would persist in thinking about the independence, but what a waste of time if you're in the middle of that desert to worry about the fact that somewhere out there is an ocean, but not on the scale of today's transportation and communications.

Allard: You may be forgiven for asking: "Look, what the hell does all this have to do with command and control?"

Well, very simply, I can't solve your command, control, and interoperability problem for you unless we can get at this problem of joint doctrine and strategy. We've had a perpetual all-star game for about the last 50 years in this country whenever we applied ourselves to the issue of joint warfare. I don't know if we can get a paradigm of jointness that will do for us what these other paradigms do at the service level. But what you've clearly got to do is to try and progress away from single events and individualized actions toward some kind of system. Toward the idea that what you have to build systematically is a body of joint doctrine, hopefully validated through exercises, combat, and lessons learned. How else can you make the critical decisions on what does and does not work in terms of something as important as command and control? The short answer to the problem is that the services cannot be narrowly focused on land power, sea power, and air power, even though they are responsible for developing the weapons systems, for dealing with each of these environments. But if that's all they're focused on, then it's one-third right, two-thirds wrong. I don't, by any means, downgrade the services because the simple fact of life is that they represent a generational perspective. When an officer comes on active duty, we expect that officer to be around for 30 years. Increasingly, when we procure a weapons system we also expect it to be around for 30 years. The B-52 is a perfect case in point, now 40 years old. That generational perspective, I submit, is not one of the things that we have very many of in a society like ours. So the

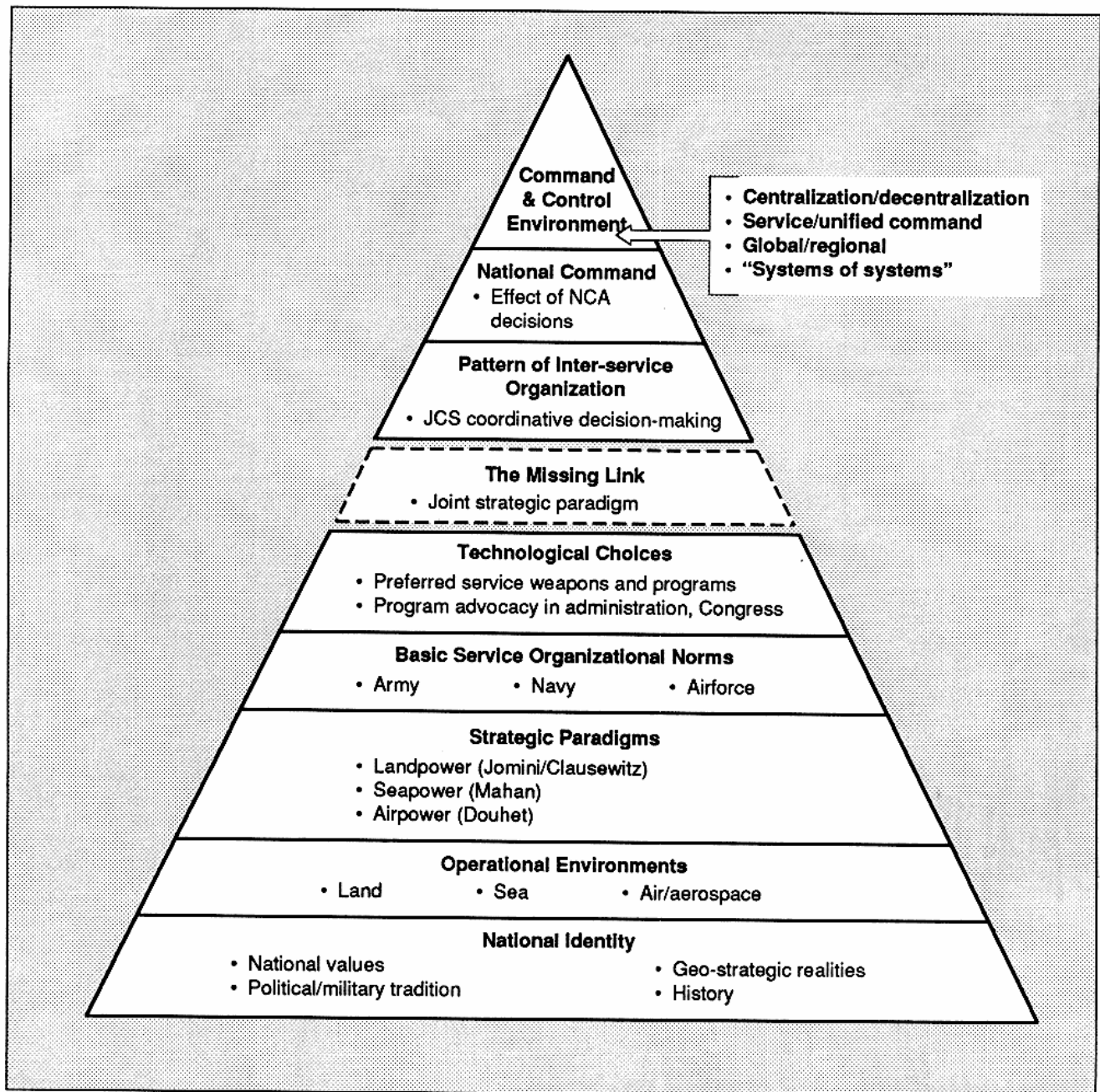


Figure 3
The Missing Link

uniformed services are worthwhile institutions: but there ain't no such thing as a free lunch. If you've got these things, these separate organizations, then you've got to create some counterweights.

I promised to give you some short lessons I've learned about the nuts and bolts of command and control. Take these things for what they're worth.

Rule number one: Remember please that communicators often don't. What do I mean by that? Just that operational jargon is to clarify what cholesterol is to the circulatory system. Some of my very favorite examples, all extracted from various official documents: "Windows of opportunity will be narrow and fleeting." "Today the command and

control community finds itself in a time frame.”
 “Today those of us in C³ must be proactive and leveragize the technology,” and my all time favorite, “The wheels of progress are firmly in motion.” You say so what? Just this, it’s very, very difficult to tell the difference between poor writing and poor thinking, and you will see both in an awful lot of the trade literature.

Rule number two: The term C³I is a misnomer; it should be CAE2 if you want to use those terms: “command and everything else.” Now, there’s a nasty phrase that is used a lot in this literature: command controllers. I hate that phrase. It is a lot

more revealing than its authors intended. Because what are we talking about here? Communications, control, intelligence, and computers: what are all of those things? They are the artifacts of command. Command is what commanders do. Everything else is sort of the dependent variable, to use a good political science term for it. So as a consequence, I would urge you to focus on the notion of the difference that this stuff makes, that’s the key. And that’s one of the things that I found to be very, very critical.

Rule number three: My book mentions the necessity to talk about the “baseline of

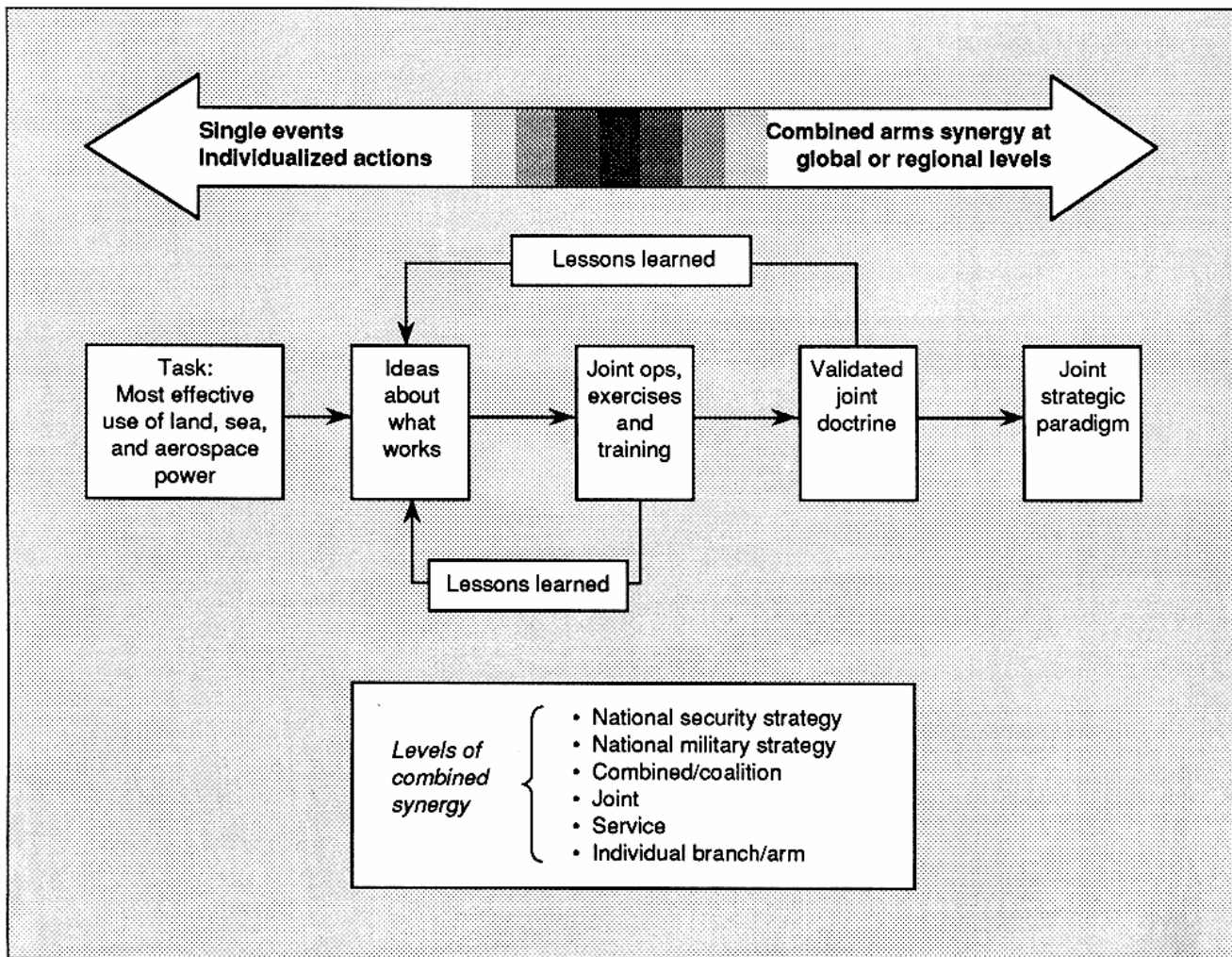


Figure 4
Problem: Evolution of Joint Doctrine and Strategy

interoperability” a construct that flies somewhat in the face of having everything connected to everything else. I think that complete ‘connectivity’ is unrealistic even though it is orthodoxy. Instead, ask yourself the following: What are the things that need to happen to make sure you’ve got the right amount of interoperability, top-down, side-to-side? Are those means technological, are they organizational, are they procedural? Basically what you’ve got to do is to think in a fairly realistic way about the possibilities, technological and otherwise. All I’m suggesting to you is that in looking at some of the things you’re about to read, apply some of these tests. And in applying these tests, understand the fact that what people are going to do is to argue from a standpoint that is not unrelated to their own bureaucratic self-interest. Looking at these things, you should be guided not only by that self-interest but yours as the analyst in getting to the bottom of it.

Oettinger: Thank you, sir. I can’t resist a couple of comments on your last remarks. It’s not just bureaucratic self-interest. I mean, if it were that would be fairly easy because you get yourself another bureaucrat. One of my teachers years ago said, “Where there’s death, there’s hope.” That applies here, as well, because some of the things we’re discussing will be irrelevant 10 years from now when everybody hears about it. We’ll be dead, and it will no longer matter. But we’re looking at phenomena which are not universal or timeless bureaucratic things, we’re looking at transitional effects of change. So, for instance, quite aside from perennial bureaucratic self-interest, you have worse, the fact that some of these people are sincere. What Ken was describing was a typical view of the operational guys, whom he charitably refused to call “wireheads.” These are people who over the last 25 years, during new technical developments and so forth and so on, found deaf ears among the services, and found that their budgets were suppressed, found that they had to become obnoxious in order to get a place in the sun, and so they are engaged in a battle which has probably been won. You’ll see this in the preface by General Herres to the article we’ll be handing out next time, which is Coakley’s Draft.* Meanwhile, people bear on themselves the scars of a transition in which the enemy was the other guy, and the other guy’s budget, etc. But that runs very deep, and so in this instance it would be an error, in

terms of the structure, to regard this purely as Allisonian bureaucratic processes. Of course that’s there, but some of it is sincere and has nothing to do with turf. It has to do with the fact that folks are either the defenders of old paradigms or the champions of new ones, and far from being bureaucrats, they are zealots. They are proselytizers and you have a system in the process of readjusting. Now overlaid on that, and this comes through in some of Frank Snyder’s and Tom Coakley’s stuff is the terminology that we’re using here. I guess “command controllers” has very different origins and some of it comes out of that wirehead community, and some of it comes out of operational, some comes out of Army and out of Air Force. Now, command control means something very different in the U.S. Air Force from what they mean in other services. Again, for the reasons that Ken has described, the circumstances are quite different. An Air Force controller is a middle-level bureaucrat who sits in a bunker some place and tells the pilot which way to fly. That is very different when you look at control in that sense in the Air Force context, very different from what you’ll hear Jack Cushman say here next week about operational control.

Part of the somewhat narcissistic approach to the readings of this semester, which tend to be in the family (you’ve got two members of the family here today), is that in all arrogance a part of what we’ve done over the last decade is labored in that vineyard to pull the pieces together in a manner that does not do violence to any of these various interests, but tries to pull them together in a way that folks like this class can understand. So that in 5 or 10 years, when these wars will have been forgotten — I don’t mean the Persian Gulf, I mean the wars among the services and between wireheads — a synthesis will appear: yeah, this is the way it is, that’s sort of normal, like the air you breathe. What you read and what you hear today are what you’ll hear from the other speakers, still very much colored with the passion of a transition that has been ongoing for maybe 30, 40 years but whose first visible culmination, as Ken has pointed out, is in that war in the Gulf which is radically different.

Allard: Just to expand on that. Don’t forget the fact that you’ve had several revolutions that have gone on here. One of the more significant is from analog to digital. The second, very clearly, is from service specific to joint. The third, I would argue, is a cultural one that’s at least as significant as the other two. We speak different languages in the services. The words “to secure,” for example. If I tell an

*Thomas P. Coakley, *Command and Control for War and Peace*. National Defense University Press, Washington, D.C. 1992.

Army or Marine Corps guard to secure something, what will he do? He will put armed guards and barbed wire around it. If I tell the Navy to secure something, they will go home. If I tell the Air Force to secure something, they will put a down payment on it with an option to buy. That's the critical difference. Now, I make the point facetiously, but it's a very real one: because if you then take that word and translate it into a computer message, you have not materially aided clarification if you've not unraveled these other meanings. All that you've just done is to create instantaneous ambiguity.

Student: You had a sentence in your book in the first part of it that I found to be very revealing when you talk about the mind-sets of various services. That as far as the Army was concerned the Army officer measured distance in terms of yards, the Navy officer in terms of miles, and the Air Force in terms of continents. I think that same mind-set has a lot to do with how their communications systems evolve, via where they could exert command. For lots and lots of years, successful interoperability as defined by the heads of those various services meant that in the Army and the Navy, the unified commanders could speak directly with the specified commander, and the unified commanders could speak among themselves. But the thing that was always forgotten, although it was documented time after time. It never really hit the forefront until Grenada showed that our grunts couldn't talk to each other, and couldn't talk to the people who needed to be able to support them, and it cost us a lot.

Allard: Absolutely. By the way, on the Grenada thing, I made a point in the book of debunking a myth: the one about the guy who was allegedly going to call in fire support using an AT&T credit card. It's one of the most persistent myths I've ever seen. Never happened, didn't exist, they couldn't find the guy, and AT&T has no record of the card. So, if AT&T has no record of the card, then it damn well didn't happen. It is just that simple. But it's one of those stories — even if it isn't true, it should have been, because, all kinds of things went wrong, reflecting how broke the system really and truly was. This I know because I used to wander around the basement of the Aikin Computer Laboratory that you fellows run. I don't even begin to understand how computers work, but I used to sit there and look at them and say, "What do they really do?" Well, they understand the difference between zeros and ones. But in the process of doing that, they are

wonderful at making explicit that which was implicit. It forces you to deal with it, to confront some things because it's really a very stupid machine.

Student: I guess my point was that it took input from the bottom to say the system was broke because the top kept saying that it's working.

Allard: Exactly. Before the computer, a lot of these things were implicit just because of the fact that all you had to do, if you wanted interoperability, was exchange radios and radio operators and, boom, you've got it. That does not work in the computer age.

Oettinger: It works more and more because people are learning more and more about it. Today, for example, a piece of software you buy on the open market will slip itself into a PC and you hardly notice it, whereas five years ago you'd have to work your tail off.

Allard: That's true in the commercial world, not necessarily true in the military.

Oettinger: Again, so this is not a technological problem, it's a cultural problem. Be sure you identify the dimensions of what you're talking about. You keep saying there's success, and still things are screwed up. The answer is that we are all geared to looking at the next bottleneck the minute the last one has been removed. So, the notion that there is absolute success, the notion that there is perfection is a very dangerous one. We should look for reasonable criteria rather than looking for perfection. I'll clobber anybody who in their papers dares to talk about anything like perfection, the right answer, anything like that. There will be very few no-no's in the course, but that's one of them.

Student: I just wanted to go back to the Grenada paradigm and then to flip back to some years before. That paradigm appeared to be one of people not understanding the need to work together and to do what they had been told. The systems existed to do that with. Oddly enough, during World War II, during the Pacific campaign, before we went in to play games of going across the channel, the people at the operating level figured out that it was necessary to combine Army, Air Force, and Navy communicators in a unit despite the fact that at the big headquarters, nobody could agree on that. It worked during World War II, it worked during the cross channel invasion. Why did we get dumb between 1940, whenever it was, and Grenada?

McLaughlin: In an extended war, there is trial and error. You figure out what really works, and then peace comes and you go back to the old doctrine.

Allard: His point, and I think it's an excellent one, is this. We did some things in World War II that represented the most effective use, as it was then known, of land, sea, and air power. Does anybody have any idea when joint doctrine began to become a priority in the Department of Defense? In 1987, because it was mandated in 1986 by Goldwater-Nichols. My point very simply is that I understand the dimensions of what caused all these things to happen, beginning in World War II. I would still argue that we were victimized by our own success, the fact that we won the war, and essentially then divided up the world between Army, Navy, and Air Force.

Student: I follow you, but I've just got to stay with this for another second. The ANGLICO companies continued to exist.

Allard: Everyone know what an ANGLICO is?

Student: The Army, Navy Gunfire Liaison Companies whose function it is to have a person with the Army and a person with the Navy, and oh by the way, a person with the Marine Corps so that if you need to shoot somebody, and he's too big for you to shoot with your little weapon you pick up your phone and you say, "Daddy, help," and daddy says, "What do you have and where is it?" and then he goes to the Fire Direction Center and those people decide who does the target servicing.

If it's going to be the Navy, you turn to the ANGLICO who says, "Kill it," and the Navy does. That ain't new. That was doctrine in 1941.

Allard: The problem, though, is that what I said in the presentation applies here. As the dimensions of warfare increase, what clearly has to happen is this basic process of adaptation. You can get two arguments as to what "jointness" is. (By the way, I hate that word even though we used it all the time when we were writing Goldwater-Nichols.) There are some people that will reduce "jointness" to its essence and say, "All that "joint" really is, is the narrowest part of the Venn diagram where you have an intersection of these dissimilar things. There are other people, and I confess to being one of them, that say, "What's really at issue here is a synergy that is more than the sum of the parts."

Oettinger: The important thing to get out of this course is that the questions are perennial, not

their resolution. In a review of a piece of Jack Cushman's, which we'll be handing out shortly, I got the following comments from one of our friends. It's worth reading this paragraph,

With regard to the treatment of Goldwater-Nichols [that's the thing that created jointness], Goldwater-Nichols does apply to the build-up of U.S. forces in Saudi Arabia. With regard to command, control, and communications, Goldwater-Nichols has had a significant effect on how communications for command and control have been established — one that can be a portent for the future. For instance, long-haul circuits over the defense communications system, under previous command arrangements, would be established by a DCS [that's defense communications system] entity in the area of responsibility of the CINC, the Commander in Chief, and there interfaced with tactical communications equipment. Monitoring for quality restoral, and troubleshooting would be a Defense Communications Agency (DCA) responsibility. As Desert Shield has unfolded, this has not been the case. The CINC has controlled long-haul circuits over the Defense Satellite Communications System (DSCS), and over commercial satellites such as the INTELSAT system, in the area of responsibility and back to its interface in CONUS (continental United States) or in the case of DCS, to the satellites themselves. The question of monitoring quality control and restoral is somewhat tenuous since the CINC does not have a monitoring and restoral organization. He relies on a remote abbreviated troubleshooting by DCA from the Washington DCS headquarters.

Now, does this sound familiar? It is a perennial set of problems reappearing in a guise that is peculiar to that particular period of time. It'll get settled if this lasts long enough, this is John's point — when you have a situation that lasts for awhile some of these things get ironed out. But what will happen is the next time, for the first period, there will be another organization with a somewhat different balance between jointness and separate-ness, and the lessons will have to be relearned because the arrangements then will be somewhat different. What I'm hoping you get out of the course is the concreteness of some of the illustrations and the notion that the questions, the fundamental questions of adjusting these things, will reappear. Frank had a comment.

Snyder: The point you made earlier is one we should not forget. Back in World War II there were many joint operations, really joint operations in both

theaters. The question is, what happened? I think that's really the study that Ken Allard's book tries to cover. Among other things, we stopped really doing a lot of good joint exercises. That is probably the key thing. Furthermore, we went from the battles of the Pacific to the battles of the Potomac and people were arguing for new systems, and they were optimizing, using the paradigms, which is one way to look at it. However, despite that, through that period there were some joint doctrines. The doctrine for amphibious warfare was agreed to by all four services. There were a number of other joint doctrines that were on the book, some were in use, some were on the shelf and nobody realized that they were there. They've been revitalized. So we never really lost sight, but we just stopped practicing it. It ceased to be high on the order of things to worry about.

McLaughlin: Well, let me say that the military is not unique in that. I grew up in a civil government world where one of my specialties was interdisciplinary studies. It became very clear to me that there was a history there, too. Universities in the United States during World War II became very good at interdisciplinary studies. They drafted in people from various disciplines, put them together in groups or teams, and they did lots of very good work. In fact it was sufficiently inspiring that some of these people went back and tried to do it in the universities after the war. Almost all of those efforts died because economics departments and sociology departments, and history departments are like Army, Navy, and Air Force, you have your own religion. As soon as you start muddying the lines, boy, Lord only knows what will happen to 200 years of tradition, and we know how you get promoted under the old rules. So it's not just the services that go through this. Academia certainly went through that kind of cycle during and after World War II.

Student: I'd like to comment on Colonel Allard's point that you need to exercise that joint doctrine. We talked about various joint exercises, sir, or joint operations in World War II where the forces come together. We work out the problems, but then we all go home and we go our separate ways. We go on to do procurement functions within our limited tunnel vision, and the next time — 10, 15 years down the road — we have new equipment, new interfaces, new situations to deal with. It's one thing to have this joint literature and joint doctrine but it's another to work out the multitude of details that are involved

when you get on the ground, or you get somewhere and somebody has a male adapter and somebody has a female adapter and this software doesn't work with that software. The only way you can solve those problems is to do those things on a routine and continuing basis.

Allard: That's absolutely the case. The point I raised was that by the end of World War II you had accumulated a significant amount of expertise of joint operations and how they worked, how they ought to work, how in some cases they did not work. The whole rationale for the formation of the Armed Forces Staff College down in Norfolk, for example, was built precisely around that because you had the Chief of Naval Operations, and the Army Chief of Staff (at that time Dwight Eisenhower), who said, "Hey, wait a minute. Before this all goes away, we've got to find a way of capturing it." The Armed Forces Staff College was the result. But Frank's point is precisely correct. We were victimized by our own success and we simply did not make the progress that we should have made. And again, what's happening here, as the dimensions and the parameters of warfare have increased, clearly means that organizations have to change as well.

Oettinger: One last point on this because you're worrying me a little bit by letting it die like this. It might be a good subject for someone's term paper to pursue the remarks of the last couple of minutes a bit further because it's all well and good to talk about exercise. This is one of the significant differences between civilian and military organizations because, by and large, commercial organizations, such as manufacturing, exercise all the time. They are, if you will, at war all the time, I mean in the sense of what they do all day, everyday. Mercifully, the military is not that way. So if you don't exercise realistically, then how do you do it? This is a set of questions that General Cushman has a lot of thoughts on. I think you'll get a lot of them out of General Gray as well. So, it's a topic well worth pursuing. It's an absolute central one today, but the reason why it's central and nontrivial is that the scale of units you have to exercise now has gotten global. You're talking about stuff about corps or above, not platoons or below, although there's some of that as well. The expense and the political fallout of doing this are nontrivial, so how to do this in the contemporary world is not something which there's a pat answer for.

Student: When you said that civilian organizations do that all the time, I think there are a lot of corollaries with civilian organizations that don't do that all the time in terms of disaster relief, for instance the Exxon Valdez oil spills. If the pieces are not organized or exercised, when they do have to come together to fulfill those particular crisis functions they go through this learning curve period all over again.

Allard: Exactly. This is the point I want to make on Dr. W. Edwards Deming, the father of Total Quality Management. Not to belabor that but one of Deming's principles is the idea that strategic priorities have to be set for an organization. Dr. Peter Senge from MIT talks about the process of alignment in organizations, which he likens to arrows that essentially have to be straightened out. If they are not aligned, what happens is those efforts cancel one another out. Deming speaks very directly about the need to ensure that barriers are broken down between these organizational subcomponents because in many cases they tend to suboptimize. So, a lot of people have spilled a great deal of ink on this but Deming links the persistence of barriers and the absence of strategy to some of the inbred inefficiencies of American corporate structures.

Oettinger: Moderation in all things, because I can't tell you how many organizations have died by virtue of the fact that their CEO was successful in aligning the pieces and breaking down the barriers, and they all marched in the wrong direction.

Allard: Like lemmings.

Oettinger: Yes, in contrast to other organizations that have been successful by virtue of the fact that they never managed to suppress some of their maverick pieces. So, when it turned out that the zigging of the organization at large was threatening disaster, the zagging of a subpiece of it saved it. One example of this is IBM and the PC. IBM historically has been an organization fairly good at playing both ends of that and having on the one hand a fairly cohesive corporate marching direction, while at the same time maverick things hither and yon that could on occasion rescue it from major error. So you'll hear me ad nauseam reject these management consultant panaceas, which I think you've portrayed Deming as doing. The number of horrors that have happened out of the unbridled application of that are large. Would you agree or disagree?

Allard: I would agree with it. But my point very simply is that there is something in the American

culture which almost virtually guarantees that the maverick is not an endangered species. I think we do that very well. In many cases, what we have to look at, however, is the question of what is it that these little sub-elements really and truly do? What value do they add to the organization? The services go through this thing, during the annual budget cycle. Now that we're doing the two-year budget, we're supposed to do it on a semi-annual basis, but no one's been able to tell when that begins or when it ends. But we go through a fairly regular process of strategic review linked to budgets. Unfortunately, life in the corporate world is not quite that easy.

McLaughlin: One can do contingency planning, one can recognize the need for spreading eggs among multiple baskets and still have a coherent organization. The other side of it is, one company we've worked with a great deal — year after year, visit after visit — is in complete paralysis because they have two groups of very talented people who cancel each other out. The result of which is the company does nothing and loses money. It can only go on for so long with that happening, and the fact that it was a regulated telephone company is why they've been able to make money, or lose money at a moderate clip. I want to ask Frank Snyder to repeat the story he mentioned earlier at lunch. It's quite a brief one about one of his students describing a division action in Vietnam in 1965 and the lessons learned.

Snyder: This was a student who wrote a very fine paper on a division size operation in 1965 or 1966, the First Air Cavalry. He described the operation in the oral brief so that everybody understood what the battle was and then he stopped, and he was going to take questions, and I said, "Continue on because the important part of your paper hasn't come yet," and he said, "Oh, well, we learned how to do that kind of stuff. We knew how many helicopters we could get in the landing zone. How long things would take, how much suppression, etc. We felt very good because it set the pattern for a lot of the operations in Vietnam because we now understood how to do things." I said, "Well, keep going."

Apparently the North Vietnamese looked at the same battle and said to themselves, "Oh, oh, we don't have to do that anymore," and they decided not to show up for division level battles. So, in warfare, which is a two-sided game, you've got to understand that both sides can learn, and just because you're learning to say, "We really know how to do this," the other guy may withdraw and

say, "Well, now I'm going to do something else." Command and control many times sounds like a one-sided game: Getting the bits through the pipe or getting the displays and all the colors. But you're fighting an enemy and it's a matter of out-thinking that other guy. And while you're learning things you've got to believe that Saddam Hussein, or whomever it is, is also learning things. I'm sure in the business world the competitors are learning just like you are, so 5 percent may be the right kind of margin, and you have to be ahead of the competition. You've got to think: What's the competition? How are they seeing the stuff laid out on the table? What are they making?

Allard: Frank, I learned that in basic infantry training when I had a senior drill sergeant who once said, "The thing you've got to remember about tracers is that they work both ways." (Laughter)

Oettinger: Well, let me just underscore that again because that's one of those perennial truths. If you have a ship or a battle group or something that radiates a lot, it's wonderful because the signals are fantastic for doing this, that, and the other thing, but they are also a stupendous beacon by which the enemy can find you. So, you will find in the history of the application of post-World War II electronic wizardry to warfare, that humble tracer story got forgotten, or never learned by people who didn't come out of an infantry tradition. They didn't have that drill sergeant, they got electrical engineering degrees someplace. But be charitable, it could be you.

What we're about in this course is taking the eternal verities that are in the classics but saying, "Now how do you run this play? How do you stage this in modern dress?" "What are the interpretations today?" Some of that job has been done by a couple of the gentlemen here today and some of the others you will read. What's the equivalent of that tracer in a contemporary environment? That's the kind of questions we'll be concerned with throughout the semester.

One of the things you'll find on your reading list is the proceedings of the last 10 years of these seminars. It's a fascinating parade of folks, and because it's now 10 years old you'll find the evolution of some of the things that Ken's talking about because he was there at the beginning, and he urged the guys the first year or so, "Yeah, we'll solve that problem." So milk the record of the seminar, it's an awfully good source because each of the articles is

from some horse's mouth, and has been recorded the way we're recording this.

Allard: We were talking about moderation. I totally agree with that. In fact, if you take a look at the various little glitches that we talked about with respect to Grenada and if you take a look at the thoroughly integrated air campaign that has been described to you on CNN as having been launched against the Iraqis, it's very clear that some tremendous improvements have taken place. Things that a lot of us worried about for a lot of years have suddenly, brilliantly, come to fruition. What it clearly represents is the first war in the information age proper. I think we really have crossed a line here, and I think that it is probably going to be a definitive event, not only for the rest of this century but for the 21st as well.

Student: You talk about this war being in the information age. One thing I've noticed on CNN and the networks is the way the French, the British, the American military officers are releasing what would normally be very classified information, intelligence information. For instance, yesterday I saw French aerial reconnaissance photos of the Iraqi positions. Last week I saw an analyst going over actual film taken from a plane. Stuff like that you didn't even talk about 5 years ago, much less see it on television. Now we're putting the Iraqis in a position where they have arguably better tactical intelligence than our field and unit commanders have.

Oettinger: It's relative isn't it? I mean that's a whole other dimension — measures and counter-measures. Historically always, for every measure there's a countermeasure and the cycle repeats itself.

Look, I sat at my computer yesterday, I got comfortable, and I said, "Show me the satellite photo, the weather over the Gulf, and on my screen in glorious color resolution is a satellite image of cloud cover in the Gulf area. You look at the history of submarine warfare in World War II and the price paid for spotting North Atlantic weather information, and the lives that were lost in getting that, and you say, "This stuff is treasonous." In the context of 1991, the isolated weather spotter in Greenland, and so on, is gone. You buy the stuff from a SPOT satellite or Acuweather. The norm in 1991 is not the norm of 1941 in terms of weather. Now you may be right, there may be instances where something got out, but you also need to see that in terms of the structure and the process of change and the baseline

of what is common knowledge today, what would have been treasonous 50 years ago has shifted.

Student: Not just the idea of shifting norms but the fact that by turning on CNN 24 hours a day you can have outstanding intelligence that a colonel in the field would not have. You're not going to fax him a picture of an Iraqi tank.

Snyder: What makes you so sure you're not getting disinformation?

Student: That's one of the problems of getting too much information.

Oettinger: But supposedly if I were Saddam Hussein's intelligence chief, I would worry about all the outpouring and say to myself, "What the hell are these guys doing to me, and how much can I trust?"

Snyder: If I were Norman Schwarzkopf I'd have CNN interviewing the 82nd Airborne and the Marines everyday. Imply that perhaps that was the force that we were going to use as a spearhead. The process is a two-way street.

Allard: I'm also deeply depressed at what I see of the grotesque ignorance of the most basic military facts and terminologies by various people that appear as pundits. Every day, every week.

Oettinger: Retired Generals, you mean?

Allard: No, I will never say a bad word about retired generals. I was talking about the bulk of our media commentators and even some academics. Before Desert Storm, conventional forces were often ignored. If it wasn't something called "nuclear," a term they consider synonymous with "strategic," it simply was not worth talking about. I'm also talking about the way that security issues were analyzed and taught at Harvard, right here in this building. The idea that conventional forces were important things which you ought to be concerned about, and as a public citizen to be somewhat knowledgeable of, were ideas that were as yet unconceived when I studied here. Harvard and the country have come a long way since then. To me the defining event of the Gulf War is that we're rediscovering that we have a military system, and that we need to know more about it. I applaud your efforts here in this seminar to learn some more about it. I think that's an excellent part of your education and I wish you well with it.

Oettinger: On that note, we thank you, Ken.

Allard: Thank you.



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