INCIDENTAL PAPER

Seminar on Command, Control, Communications, and Intelligence

C^3 Priorities
Gerard P. Dinneen

Guest Presentations, Spring 1982
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December 1982

Program on Information Resources Policy

Center for Information Policy Research

Harvard University

The Program on Information Resources Policy is jointly sponsored by Harvard University and the Center for Information Policy Research.

E-mail: pirp@deas.harvard.edu URL: http://www.pirp.harvard.edu
I-82-3

C^3 Priorities

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Dr. Dinneen, as Assistant Secretary of Defense for Communications, Command and Control, and Intelligence during the Carter Administration, represents decision-making power and responsibility in the C^3 field. His background lies in MIT's influential Lincoln Laboratory, one of whose prime contributions to modern technology was the pioneering Whirlwind computer; Lincoln was also the birthplace of the long-lived SAGE air defense system. Dr. Dinneen's orientation, though, is far from being merely that of the R&D specialist. His views are boldly stated, and the discussion that follows ranges knowledgeably, and sometimes provocatively, through the thickets of C^3 policy and application.

Dinneen. I'll try to tell you what I think C^3 is. I'm not going to give you a long definition, because I'm sure you have that, but I'm going to talk about it a little bit. I thought I'd use a current paper — the John Steinbruner paper, "Nuclear Decapitation," which some of you may have read in *Foreign Policy** — as a way of dealing with some of the issues, including my thesis that C^3 literature is among the poorest in the world. I would not take any credit for the times that I have written and spoken on the subject, either.

Now, that's not because C^3 is a difficult subject. It really isn't; that's my first thesis. A lot of people start out by saying, "C^3 is so complex and difficult, nobody can understand it." That's not true, it isn't. Possibly people don't understand it because they choose not to. And some of it is the syndrome I associate with young women and mathematics — this, by the way, is not a sexist statement; my daughter majored in mathematics; and one of the things I have tried to do, both at MIT and in my present position, is encourage more women to study engineering and mathematics and the sciences. But a lot of them say, or their fathers convince them to say, "Well, I just can't understand mathematics." I taught mathematics for awhile, and I know how untrue that is.

Some people feel that way about C^3. I know that, because when I used to go out and speak about this subject I would get about five minutes into my speech and look at my audience — I always look at the audience, because I never have a prepared speech, so I have nothing else to do — and their eyes would be glazed over. I tried never to use acronyms; a lot of people do, of course, and that makes it harder... but I think some people just choose not to understand. And I think some of the people who choose not to understand C^3 do it not because they think they can't, but because they don't really want to agree with what they'd have to agree to if they understood it. That's one of the arguments I used to have with my children. They'd tell me, "But you don't understand, you really don't understand." I'd say, "Yeah, I understand, I just don't happen to agree." And I think there's some of that.

Now I'm not going to talk about intelligence unless you have questions. I'm going to talk about communications, and about command and control. (I have had responsibility for both.) There are lots of ways of characterizing C^3. You can do it by technology — satellite communications, radio communications, fiber optics. You can do it by the size of the program — you can talk about really large programs like the airborne command post, or AWACS, the Airborne Warning and Control System — now that it's so notorious I guess I don't have to tell you what that is, although I used to have to explain it. Maybe program longevity is part of what

**Foreign Policy, Number 45, Winter 1981-82*, pp. 16-28.

confuses people about this business: the first part of that program goes back at least to the late 1950s; I worked on it then, when I was at MIT's Lincoln Laboratory.

So you can differentiate the large from the small programs, the small ones being radios that come in tanks or airplanes, or what have you. Or you can characterize it by the functions that the technology's supposed to perform. That is what I generally do when I try to describe the C^3 program — strategic, tactical, and then lumping the rest together as defense-wide communications. When I presented the program to Congress, and to Harold Brown and the other assistant secretaries, looking for my fair share of the budget, I would generally do it that way.

"Strategic" includes, as I'm sure you know, the warning systems, radars, warning satellites; the communications from those warning systems; the command posts — fixed, mobile, airborne, or whatever: tactical command posts, Strategic Air Command, the National Military Command Center. It includes the processing that takes place in Worldwide Military Command and Control System computers, and the communications from those command centers out to the weapon systems, maintaining positive control over those systems, should deterrence fail.

If you look at that set of equipment and procedures — because procedures are important, and people — one of the things that was different in my part of the R&D program was that I was responsible not only for developing new systems, but also for operation and maintenance of the current system. So I had to worry about the people they had, how well trained they were, and so on.

There are two or three main issues in the strategic area. First of all, the primary purpose of the strategic communications systems and command and control systems, just like that of the strategic weapons systems, is to provide deterrence. You hope never to use them. In the case of the weapons systems you'd like to see them decreased, if you can get arms control agreements. In the case of the strategic communications, certainly you need them now, for the systems we have; you may need them less as you are decreasing arms, but you will still continue to need them.

So the primary purpose is deterrence. That means the enemy has to be assured that you have a communications system that maintains positive control over the weapons systems at all times, and also is available to exercise those weapons should deterrence fail. And since the primary purpose is deterrence, the issues are reliability and survivability. We should have systems that are absolutely reliable and accurate, and you establish this by technology improvements in the individual systems, by redundancy, by mobility, and so on, and by ensuring that they're survivable. They won't all survive, but you need enough surviving systems to be assured that you have a deterrent force. If you don't have a communications, command and control system — if you only have a weapons system — you don't have a deterrent force. Those are the issues in the strategic area.

Oettinger. As I'm listening to you, I'm listening for disagreements with Steinbruner. So far I don't think I've heard any.

Dinneen. Well, there are plenty. The main difference is — well, I'll come to that.

The one thing I didn't mention is performance. It's obvious that you want systems to perform well and have a certain amount of capability. But if a decision has to be made on a future system, then the things I would consider more important are: Does it increase the reliability of the system? Does it increase the survivability of the system? Not does it increase the performance. There have been arguments that we ought to increase, let's say, the capability of our warning satellites, or our radars, to get more precise information on the number of warheads — to be able to say there are 120 instead of 127, something like that. If you can get that without decreasing reliability or survivability and without too much cost, okay. But if you do that it's expensive with these other things, and you don't need it. The issue is reliability and survivability.

Now, "tactical" includes all the radios that go into jeeps, tanks, airplanes, mobile command posts, data processing that goes out into the field, and so on. The tactical system issues are primarily getting things out into the field, making sure there's enough equipment out there, because small systems don't have the same kind of advocacy. Most people don't think about a tank radio or whatever the way they think about AWACS. Tactical forces tend, perhaps, not to get quite the attention strategic ones get. People say, "Well, we've got something out there that's working reasonably well, and I've got this great signal officer and he always manages to get something through, and if he doesn't we'll send a guy out on a motorcycle or something."

As a result a lot of the equipment out there has been outmoded — just as you'd probably find in a lot of civilian manufacturing companies out in the boondocks.

You know, you don't see outmoded equipment in the headquarters of General Motors, but if you go out into the smaller places you'll probably find some old telephones. Well, it's the same thing in the military. We've got some old phones out there. So the main thing was to get some new equipment out there, and getting enough of it.

Another big issue in the tactical area is what we call "interoperability." You won't find it in the dictionary. When I first went down to Washington and people were talking about RSI — rationalization, standardization, and interoperability — I usually stopped them and said, "Exactly what do you mean by each of those terms?" I didn't ever get a really good answer. But as I understand the concept of interoperability, it simply means that the Army can talk to the Navy, the Navy can talk to the Air Force, and we can talk to the French and the Germans, given that we talk the same language, which mostly we do. That's not always possible. Some of the commands have different frequencies. For a lot of reasons the Army has worked with one frequency and the Air Force with another. The reasons were good: the Army was concerned with ground communication; they wanted to get a little more distance, so they used one frequency. The Air Force was concerned with air-to-air communication, which has different propagation requirements. So that meant you always had to have two radios.

Now, we can get around that to some extent. But then as we add some of the military characteristics, like antijam capability or security, we're not dealing just with straight voice; we've also got encoded digital transmissions, and unless you can develop a workaround, you find you can't talk to each other. It's like having the wrong garage door opener when you come home late at night; you push the button, and the door just sits there. So interoperability is important for getting things out into the field, and low cost is much more important in the tactical case than the strategic, because you've got large numbers. You're buying hundreds of thousands of radios — four, five or six in every command post. They can be very expensive; they're probably too expensive. And they create a massive cost problem.

Finally, defense-wide C^3 — that's the backbone. It's the long lines, like AT&T's; it's the systems things, like the Automatic Voice Network, called AUTOVON, the Automatic Digital Network (AUTODIN), the Worldwide Teletype System. Our worldwide satellite communications systems are often leased from the common carriers, from AT&T, COMSAT or others, and in other cases they are military systems. We need more features than you get in the commercial world. We want security. The commercial world so far hasn't made that a major characteristic of its systems, though I'm sure it eventually will. We want capability to protect those systems from jamming, and we want things like preemption so that, if there's a crisis, the chairman of the joint chiefs can pick up the phone and won't get a busy signal. The issues there are simply getting those things, having them reliable and survivable, having those necessary military characteristics and getting them at the lowest cost to the taxpayer.

Student. In the strategic area, you said one of the principal concerns had to be making sure that the enemy knows that our C^3 works. How are we going to do that, explicitly?

Dinneen. That's going to be my major discussion topic on the Steinbruner paper. I ought to state my position. When I first went to the Pentagon, within a month or so after I arrived — long enough for me to get confirmed and long enough to have my first hearing with the House Appropriations Committee — I had an interview with somebody from *Newsweek*, *Business Week*, or something, and they asked the same kind of question. Except that you're asking a question that's harder to answer. Their question was, "Are you confident that our system is sufficient now as a deterrent?" And my answer was "Yes." If you have to give a yes/no answer, the answer is yes.

Now I have not changed that view. I guess that's my principal problem with Steinbruner, and with a lot of other people who write in this area: they're always saying it won't work. They've got the rhetoric cranked up, and they don't take into account any of the uncertainty we feel about what the Soviets can do or what the Soviets must feel about what we can do. My answer was yes because I knew we had redundancy — satellites, radio, HF, VLF, different kinds of command centers and so on. Those have been the issues people have mostly concentrated on.

Let me go into the Steinbruner thing. I don't have any quarrel with the second paper I am going to discuss, Dave Jones' paper on the organization of the JCS; in fact I am going to support it. The Steinbruner paper, though, I have some quarrel with. It's representative of a lot of papers you see. There was a series of three articles in *Science* magazine on this subject not too long ago by William Broad; you probably saw that. There were also long articles in the Atlanta paper, and then in the *Washington Post* in December 1980.

Oettinger. Do you differentiate Steinbruner's kind of position from the kinds of presentations that say, Dave Jones, or Dick Ellis, the former CINCSAC, have made? Are they coincident? Twenty degrees apart, 180 degrees apart?

Dinneen. I don't happen to agree with all the conclusions of some of the people in the military, or even in the Defense Department. But they're different from Steinbruner in the sense that a guy like Dick Ellis is saying, "This is where the certainty/uncertainty dividing line is." He's got a philosophical point, but I think it's a very important one. Dick Ellis, when he was commander of SAC, had the responsibility to carry out a certain mission, and his mission was, first, our protection: "Peace is our profession." His mission was deterrence. On the other hand, he also sees what every SAC commander from Curtis LeMay on has seen: that if something happens they've got to be damn sure they can retaliate. So he wants, as much as possible, 100 percent certainty that no matter what happens, and no matter how unusual the scenario, he will be able to have communications — in this case, probably, with all his forces. It's like a general manager of a company who can see his specific company, but may not see the whole broad corporate picture. You talk about the need for improvements, or about having 100 percent certainty. I'm talking from the point of view of an overall deterrent, and while I have to be concerned about whether Ellis or those guys carry out their mission, I'm more broadly concerned about overall deterrence.

In that context I'd say we need to improve our systems, but that the need is relatively balanced across the spectrum. And that's different from Steinbruner. Steinbruner's conclusion, if I understand it — I don't think I do — is that we do not have a fully survivable system, it's very hard to get one, and we shouldn't even try until we do something else, like achieving stabilization. While Ellis, and the other people who have that responsibility, would argue that, yes, we can have a survivable system and, in fact, we did have one at one point. Steinbruner says we didn't. Ellis says we did have one, we can have a better one, we need to spend some more money; and he's gone to Congress and he's saying, "We've got these problems." You can't go to Congress and say "Give me some more money because I've got a threat." There's always a different thing to fear. Our approach to Congress was to try to give them a balanced view. I never felt that in order to make improvements in our system one has to argue that the system now is inadequate, vulnerable, soft or what have you. The Soviets have been increasing their threat very markedly over the past ten to fifteen years, and I say if you want to keep up with that threat you've got to make improvements. And we've been making them. So I think there's a difference.

Anyway Steinbruner begins by trying to make some correlation or analogy between our system now and what happened at the Bay of Pigs. I can't defend it or argue it, I just don't understand it. I certainly don't see any analogy. I guess this is why I began by saying I don't think C^3 is that complicated. I was aiming to describe to you in a few words what strategic communications were, what you needed to do. But Steinbruner goes on to get very philosophical about what the Soviets perceive or don't perceive, and makes a statement that a rational defensive act on the part of the Soviets would be to attack our communications. That's hardly a defensive act; you're not going to attack somebody's communications after the war has begun, because probably your own communications will be having some problems. So that means it's an offensive act. He just has a lot of arguments like that which don't hang together.

Student. Just a quick clarification. Did you say an enemy would not want to attack our communications after the war had begun?

Dinneen. No, on the contrary, he would. I meant that, in talking about a rational defensive act, Steinbruner is mixing up the attack on communications both before and after. Surely after the war begins you would probably include the communications, command and control in your target system.

Student. And that's also a question of survivability.

Dinneen. Yes, that's right. You have to expect that.

Oettinger. Would you be happier if he had said it was a rational preemptive act? "Preemptive" comes close enough to offensive. Your objection is to characterizing it as defensive?

Dinneen. Yes. It's not what I call a rational defensive act. Steinbruner's implying that this is something that the Soviets would do because it's the only imaginable route to decisive victory. This gets back to the certainty/uncertainty question. I've often imagined myself as a Soviet planner going in to their command authorities and saying, "Now, I've been reading all

this literature on the United States, and all we really need to do is explode five bombs, and one hundred whatever-it-is, and they'll have no capability to respond. And then, if I were the Soviet leader, I'd talk to my communications officer or my planning staff and say, "Now, are you absolutely sure of that? I understand they have this kind of system which is less susceptible than others. Remember, we did those tests, and we weren't able to test that because at that time we didn't have any of them working, are you sure that's realistic?" And so on. So I can't see how any rational plan can evolve from Steinbruner's kind of view — that's why I objected to the word "rational," I think. How can any rational planner believe that in a preemptive attack or first strike you can knock out the other person so effectively that he won't retaliate?

Oettinger. What you're saying is that it's too abstract, and too fraught with a specious certainty; that your emphasis is on the residual uncertainties, which you see as so great that this kind of abstract armchair philosophizing turns you off — is that right?

Student. Is it also, though, that in order to knock out the communications system that completely, they would have had to destroy the people as well, so that it wouldn't make any difference whether you have communications or not if you don't have any people around?

Dinneen. Well, that would have to be quite an attack. Yes, you can't do a surgical — I hate that word — a surgical attack on the communications because most communications —

Oettinger. But are you taking Steinbruner out of context? He wrote: "Unfortunately, a preemptive attack on the US command structure is a rational defensive act for the Soviets once they have judged that nuclear war can no longer be avoided. Although it would preclude a bargained end of war, it offers two important advantages: first, by eliminating central coordination, it sharply reduces the military effectiveness of opposing strategic forces." Steinbruner doesn't say that it eliminates it, he says it reduces it. And "Second, it offers some small chance" — he isn't saying that it's a sure thing — "that complete decapitation will occur and no retaliation will follow." But you still find that offensive?

Dinneen. Yes, he says it's a rational defensive act once they've judged that nuclear war can no longer be avoided. But I don't know how anybody judges that. I mean, the whole point is that we all hold positive control of our weapons — and I hope the Soviets are working as hard as we are in having that positive control — but we continue to exhaust it. So that's not a defense, that's a preemptive attack. And it isn't rational to think you can carry out a preemptive attack and knock out a number of communications, that they would not survive in a reasonable way.

Student. We often hear about how the Soviets have a nuclear war-fighting plan — it's known as part of their war-fighting doctrine. I'm at a loss to imagine how that kind of calculus enters into the minds of the strategic thinkers. Under what circumstances, under what hypothetical circumstances? Where they have been pushed so far that —

Dinneen. Well, I just have to give you my personal view. I personally don't think it's rational to think of a limited nuclear exchange. Deterrence is deterrence, and as I said at the very beginning, the primary objective of your strategic command and control is to establish that deterrence in order to prevent nuclear war. I don't think it makes any sense the other way — or only in that you would like to have the capability (though I can't foresee what the situation might be) for the chief executive to have some other option than letting everything go. The Soviets have written about that, too.

Student. Well, I'm just sort of getting comfortable with the point you made about the effectiveness of the residual forces in deterring the first strike, because it compels your adversary to think —

Dinneen. That's really my point.

Student. — about the realities of second strike capabilities. But I'm wondering if there isn't some suspicion in our leadership circles and among our strategists that perhaps the Soviets have overlooked that residual component, and that if they don't contemplate a first strike, at least they examine the pros and cons, perhaps to a greater degree than we do. In this country I think it's still sort of sacred-cow, unthinkable stuff.

Dinneen. The official policy, the official statement, I think, in the previous administration and probably in this administration too, is "First strike is not our policy, and it is also not our policy just because we don't

want to make an official definitive statement." But my objective in that respect was always to make sure that the national command authority, the president, had weapons systems and communications systems which were sufficiently survivable so that there was a deterrent. So that, no matter what the enemy did, there would be sufficient forces left to convince him that the result would be so horrible that he would be deterred.

Student. Do you think the deterrence lies in the second strike survivability? Is that an efficacious way to formulate a strategic doctrine?

Dinneen. That may be an oversimplification, but it's probably a fair statement of what I think.

Student. I've looked at this for a couple of years, and I've never really had a chance to ask anybody that question. It's sort of a simplistic question, but it seems to me to be worth asking.

Dinneen. No, I think that's a pretty fair statement. And what that says is: you want to maintain positive human control of weapons at all times to avoid accidents. And you want to be sure that you have sufficient survivable weapons, which is the only reason I could offer for having something like an MX. You know, you can argue about the racetrack, and it's nutty and crazy, and all that kind of stuff, but if you want a survivable force, you need it. At the time we were doing the MX, too, we had a couple of other constraints, like SALT II. So you want survivable forces, you want survivable command and control so that you have a surviving second-strike force, and can retaliate relatively quickly. I don't put much faith in the notion of having something that's around three or four months later.

All right. I guess the most important point I wanted to argue was this. At the end of his paper Steinbruner makes statements about the vulnerability of the systems, and about how people think, the military, the civilians, and so on. To get down to the point, he says that we cannot protect our systems. He gives three reasons, which are at best misinformed and oversimplified. One has to do with the operating network, units becoming isolated, and how some elements are vulnerable to EMP effects, and how satellites are inherently more vulnerable. There are elements of truth in there, but mostly he's wrong. I think we have made our systems quite survivable. We've done a lot on EMP, we know a lot about it, and we've been improving the resistance of our command system, our airborne command post and ground systems to it. We've tested for it. We know what it's all about.

Furthermore, Steinbruner says that it's impossible to protect our systems in any case; the improvements would frighten the Soviets, so therefore we shouldn't do it, until we have "stabilization," whatever that means. That, I think, would be the most dangerous aspect of his argument if anybody took it seriously. We *should* continue to improve our systems, for the reason I've given you: they're important war deterrents. I would think that, rather than being frightened if they saw us improving our communications, command and control, the Soviets would see that as a rational act. I know I would be pleased to see them improving theirs, because if that provides better control over their systems, we both benefit. We all worry about accidental problems. So I feel Steinbruner is overstating the vulnerability, and then draws a conclusion that really doesn't follow.

Student. How would you compare that to another article Professor Oettinger handed out, the Desmond Ball piece in the Adelphi Papers? This one was picked up by the *New York Times* and the Associated Press. It follows a similar line, though much more academic. It talks about the technical problems of survivability, and also about the problems of devolution of command, where the decapitation is real and physical, and what happens when there's no commander.

Dinneen. I haven't read that paper, but those are issues that came up all the time I was in OSD, came up before I was there, and will continue to, I guess. And I have to treat them in different ways. The technical issues I can pretty much discuss, though there are certain areas that are classified, obviously. But the devolution of command, and the procedures and policies surrounding that, I really can't discuss. It's classified. And it's the one area I think is very properly classified. That's one of the problems in this whole area. A lot of statements have been made about the vunerability of systems which I knew were false. They could not really be refuted, because to do so would involve giving technical or operational details about the systems, which we clearly didn't want to do. Because part of deterrence is maintaining your survivability by not disclosing the details. That's just a problem. I don't have any solution for it.

But on the technical side, over the last three or four years, most of the arguments have had to do with the effects of the electromagnetic pulse. That's a pulse

which is created by a nuclear explosion and produces a very high voltage. There are various ways of testing what it does without going into nuclear explosions. We've tested most of our command and control systems using pulse generators that produce similar effects. And we've done some testing of other components in underground nuclear tests. We have a pretty good notion of the things that are vulnerable to EMP, we have ways of fixing it, some of the ways are very expensive because they're heavy, you have to shield things, you have to lock things and so on. We've done that on the most critical elements, and we're doing well. The present administration, which has put a high priority on C^3 — $18 billion over the next five years — has earmarked part of that to correct vulnerability problems.

To return to Steinbruner: he talks about the inherent vulnerability of satellites, and implies that nothing has been done to protect them, and that's not true. I mean, most of our military satellites have been protected from — not a one-on-one attack, but the kind of peripheral attacks associated with a nuclear explosion. We've spent a lot of time protecting them against jamming, which I consider to be one of the more serious threats. The newer systems will be quite survivable in that respect. We've put a lot of emphasis on mobility — the airborne command post kind of thing — and on redundancy, and hardening.

Student. For awhile the *New York Times* was reporting that the Soviet Union was quite a bit more advanced than the United States in anti-satellite technology. Is that still the case, or is there parity technologically?

Dinneen. The Soviets have demonstrated an anti-satellite capability; they've conducted experiments in which they've attacked low-earth-orbit satellites. But to my knowledge, unless something has happened in the last several months, they have not demonstrated that capability against the synchronous-altitude satellites, which is where most of our communications satellites are. So yes, they have that, but I don't consider it as serious a threat as jamming, because it would almost have to be coupled with the beginning of war. There are various kinds of agreements against satellite attacks, SALT II and so forth, and there are agreements that are a little ambiguous about use of space for war, but it's a capability that we could also have.

Student. Do we have it now?

Dinneen. We don't have an operational system now, I don't think. I'm not sure.

Student. You've been in the academic sector, and then you moved to the government defense sector, and now you're in the private sector. During those moves, have your perspectives changed on the emphasis that we should be placing on various capabilities?

Dinneen. Yes, my perspective has changed somewhat, but not really as a result of those moves. When I was at Lincoln Laboratory I was involved with military research, but I was concerned more closely with students and faculty and so on. My views on the things I said earlier, which pertain not just to C^3 but to the military generally, really haven't changed. I guess from the time I started working in military research at MIT to my time in the government and now, I've always believed that the highest priority is prevention of nuclear war, which means having a deterrent. Everything kind of flows from that. And that perspective hasn't changed at all.

Oettinger. Could we press that a little? Because that may be the heart of the matter — and not only of your disagreement with Steinbruner. Let me preface this by saying that another criticism could be made of you, in that what you've expressed is essentially purely within the technological systems/ programming-oriented area. But somebody coming at it from a command viewpoint might be more concerned with questions of decapitation of the functioning of a command system, in which having the right people in the right place, etcetera, is as important as having the system in the right place. It seems to me that a lot of the contemporary concern stems from taking increasingly seriously the notion of a gradation of nuclear scenarios, where the question of various degrees of survivability becomes more important. Whereas it seems to me you're sticking very religiously to the second strike — that as long as there's enough around to do that, that's a deterrent. And that unless and until that happens, one can reasonably assume that things are operating either in a benign environment where it's no problem, or in an environment that is so hostile and so short-lived that the decision is a fairly quick one: do we let go with the second strike or don't we? But it seems to me that these notions of limited war have been around since even before the Carter administration, though now it's come to the forefront. Does my question make sense? And if it does, what's your position?

Dinneen. I guess I wouldn't characterize my position as being that single-minded. Someone asked me, does deterrence in simple terms mean being sure of a second-strike capability, so that the enemy knows that you can retaliate? And that's a philosophical matter, I guess, if you can use philosophy in this kind of endeavor. So I said if you had the limited resources we do, then first priority ought to go to making sure you have that deterrent capability, because the primary objective is to prevent nuclear war. And then, coupled with that, you work for arms control agreements so that you can cut back on the overall level, and still maintain the deterrent. You can try to focus in on a simple strategy, and that is what I was trying to focus in on, because we do have limited resources.

Now, as I tried to say before, somebody like Dick Ellis, or Ben Davis now, who runs the Strategic Air Command, or General Hartinger of NORAD, has to take a somewhat different view. He has a specific mission. And I understand those views, and we try to meet them. But I'm taking a much broader view, saying, "What are the objectives?" That's really it.

Student. Am I correct in drawing the inference that, in your view, such terms as escalation control, damage limitation, and other such concepts so widely prevalent in the American literature that don't have a counterpart in Soviet literature, are essentially useless concepts? And that since the objective is to prevent nuclear war, anything that creates a doubt whether, when the war starts, we're going to retaliate in terms of escalation control, limited response, flexible response, all those concepts are in essence worthless, not to be considered? And that the greatest way to deter is through our ability to defend, to go to a war-fighting capability, and not use all the rungs of the escalation ladder that have been so prevalent in the 1970s?

Dinneen. No, that isn't what I was saying. Let me try it again. If you take as your primary objective the prevention of nuclear war, and your means is a believable deterrent, I think the one that's most believable is the one that can be most simply described. And that is that you will have weapon systems, communications and command and control which have sufficient survivability so that even after a first strike you will be able to retaliate. And that retaliation will be sufficient so that no enemy would want to attack.

Now there may be circumstances — though it's hard for me to imagine what they might be — in which the president would not want to retaliate with everything he had left, and would want to have the capability for some other response. That's fine, you ought to give him that. But the first priority ought to go to the capability of full-bore retaliation.

If you ask me if I think it is reasonable to consider the United States and the Soviet Union engaging in a nuclear war which somehow goes step by step by step over some long period of time, I don't think that makes any sense. I frankly think if the deterrent doesn't work and we get started in a serious exchange with the Soviet Union, it's going to go all the way. I think people are kidding themselves if they think that somehow there can be some limited nuclear exchange, and that maybe that isn't quite so horrible as the cataclysmic effect. But that's just my personal view.

Oettinger. But I think it's crucial to understanding your comment about the adequacy of the present scheme, because if that's the case, then clearly for the kind of retaliation command and control you envisage, limited bandwidth with a reasonable devolution of command is quite adequate. You don't need a hell of a lot of sophistication; you need, in essence, to get a go/no-go decision appropriately authenticated to a reasonable number of people, though not necessarily to one person, and that does not require a lot of sophistication. I wanted to make sure I understood the logic of your position.

Student. And as a follow-up, since we are left with limited resources with which to harden C^3I, are we necessarily concentrating them in the right places to serve this minimum requirement, for example, TACAMO and communications with submarines? Or are we doing it across the board from the president down to the man who pushes the button, which might tell the Soviets that we're trying to engage in war-fighting strategy and escalation control?

Dinneen. I think the priority is going where I said it ought to go.

Oettinger. And so your difference, as you described it earlier, with, say, Ellis, as distinct from —

Dinneen. I'm sure that if you asked Dick Ellis where the priority would go, he would put it in the same place I would.

Oettinger. Yes, we did ask him. But I just want to emphasize that the distinction — correct me if I'm

wrong — is, as you articulated earlier, that if you're responsible for SAC you take a view of optimizing your own performance, whereas from where you sat, you say, "Okay, I can tolerate imperfection in SAC if the other legs of the Triad are working," or something like that.

Dinneen. That's right, I'm saying that if I were the commander of SAC, and I had that mission, I would be arguing for all the resources so I could be 100 percent sure I could do my mission. So, to get back to your question, I'm going to have a slightly different perspective depending on where I sit. If I'm the head of the math department, I'm going to teach mathematics. When I was head of the math department, I would have said all the resources in the university ought to go to the math department, because that's clearly the most important thing, and everybody ought to study mathematics. If I worked in French literature of the 14th century, I'd say you've got to know French literature. But if I'm the dean, I'd say, "Well, wait a minute now, we've got more students coming in electrical engineering now, so we'll put it there, and mathematics is important, so we'll put some emphasis there too."

Student. I think the difference is, at least as I understood General Ellis, that — and this is where he goes along with Steinbruner — General Ellis emphasizes more than just being able to detect an attack and have assured retaliation capability as far as C^3 is concerned. He would include the intelligence function of being able to evaluate that attack, determining whether you need to reattack, and then communicating on your third and fourth retaliation. He seems to be concerned about spending dollars all the way along, to cover all those requirements, and the question is, if you have scarce resources, should the money be front-loaded to ensure the first retaliatory attack, not worrying about the rest of it?

Dinneen. Yes. I think General Ellis would say the same thing.

Student. When he got done with those steps, evaluating the attack and deciding whether you need to reattack in the second and third rounds, he said he didn't really believe that that was going to happen, and that it wasn't too probable. He believed in just what you're talking about, front-loading and survivability in the first round.

Oettinger. But in that case, where do these graduated notions come from? It seems to me that they date back at least to —

Dinneen. Scholars. There's something about nuclear war that brings out the scholars. You remember, in the 1950s it was RAND Corporation, right? Always writing things.

Oettinger. But it seems to me that there are statements associated with such defrocked scholars as Schlesinger and Brown which associate official positions with that view — positions, if not of the U.S. goverment, at least the Department of Defense. How then did public officials get brainwashed into this scholarship?

Dinneen. Oh, they didn't get brainwashed. What happened is — I'm overemphasizing here, because I only have a couple of hours with you and I have one point, and I want to make it. But after the John Foster Dulles days when they talked about massive retaliation, people said, "Well, if that's the only option the President has, pushing one button and the whole world ends, that's not right, we ought to have some other options." And people conceived of scenarios in which there might be an accident, or there might be some attack by some third party or something, in which case you would want to make sure that the decision that was made was the right decision, and if you had to retaliate you retaliated in a way that was appropriate to what happened. And that's reasonable.

Oettinger. Is that the whole thing, simply a cover for a third party?

Dinneen. No, I don't think it is. The other part of it is, you read the Soviet literature, in which they talk about winning a nuclear war and so forth, and people say well, if that's the way, we ought to think about that. I say, in terms of priorities, you put the priority on the deterrent, that's all. But I also believe that, to the extent you can, you should provide the leadership with as much information as you can, and with absolute control over the weapons and some options they can choose from, so that they're not left with just one option. I don't have any problem with that, I would just put the priority on the deterrent. Most of these articles, though, get confused, because they talk about other things. And so the question I always want to answer is, do we have a deterrent? And I say we have a deterrent

as long as we have that capability of responding. And we're going to put the priority there.

Student. Is this the stance you took in the Defense Department too? Or has it shifted to some degree?

Dinneen. No, that hasn't changed.

Student. Because it sounds to me as though the Defense Department may have changed since you were there. Maybe I'm misreading, or not as well informed, but I see greater emphasis on a potential first strike.

Oettinger. Well, maybe you're reading Steinbruner, is what I think he's saying.

Dinneen. No, there was then, and there is now, discussion about having additional capabilities, the kind of thing that you heard from General Ellis. I'm not saying that this is an either/or situation, I'm saying if I have to give priority, that's where I'd put the priority. That was the perspective I had when I went down there, and it's still my perspective.

Student. But do you see it as still being the perspective of the Defense Department?

Deinneen. I don't know. You'll have to ask them.

Student. I think you're as close to them as anybody I've seen to date.

Oettinger. Well, wait till Dr. DeLauer comes; the mantle has passed. He can speak for the DoD.

Dinneen. I'm sure the priority is still there.

McLaughlin. I think what we're seeing here is some of the different versions of the elephant. We have General Ellis and a lot of people in the national defense community saying, "Okay, there are various vulnerabilities here which we need 18 billion dollars over the next five years to improve upon." And Steinbruner and others are saying, "There are certain vulnerabilities here which are unfixable, so we might as well quit and not bother spending the 18 billion dollars."

Student. It's like we have a different animal from the other administration.

McLaughlin. Well — and I'm not sure how much of this is providing ammunition to the enemy — I certainly think there is enough description of vulnerabilities or concerns coming out of the Defense Department to feed the Steinbruners. And the same sorts of things are being cited, whether it's high-altitude EMP, Soviet targeting concepts or whatever else. You hear the same sort of thing about NATO conventional forces right now: can you build up conventional forces quickly enough and spend enough on them, or should you toss in the towel, or what? People are describing the same starting situation, but their viewpoint leads them to very different conclusions.

Dinneen. Well, the difference between General Ellis, General Hartinger or someone else who's arguing for improvements in order to do his mission, and Steinbruner, or a newspaper reporter who's seen something out of context — a single statement from a classified hearing, for instance — is that the people like General Ellis and the current people in the Defense Department know what the situation is, they know that things can be improved, and they have certain plans for doing that. They also recognize that somebody, whether it's the Congress or the Secretary of Defense or a combination of the two, has to decide how you place your limited resources. But you can improve the situation, and we have been improving it.

McLaughlin. I'd like to turn the tables for a minute on that one, though, and ask if we don't have a history of sufficient problems to reduce the outsider's confidence when the people at DoD say, "Yes, this is under control." Whether it's the history of WWMCCS, exercises trying to reinforce NATO, or the problems of the 7th Air Force trying to talk to the 7th Fleet in the Mayaguez crisis, isn't there a sufficient history of screwups to justify some concern whether the system will work this way?

Dinneen. I hope I didn't say that we don't need to keep working on the system. But I don't, simply because of problems we had in the past, necessarily accept that those problems all still exist. I could go through every one of those things, as I have done in great detail for your representatives in Congress, who listen to these things with no holds barred — and I don't mean just the small committees, I mean big committees, lots of committees, any committee that wants to hear about it with everything on the table, all the intelligence, all the classified stuff out in front of them. The thing I object to is saying, "There was this problem, or that problem

(and many of the things that are stated are just plain false), and no matter how many times you try to correct them you don't correct them.'' WWMCCS has got a bad rap because somebody somewhere said that in some exercise it only worked some percentage of the time — 70 percent or something like that — which is too low, and so it wouldn't be any good. The fact of the matter was that it wasn't WWMCCS, it was something called the prototype WWMCCS in the computer network that was being tested out there, experimentally. It wasn't operational, it wasn't part of the network; but no matter how many times you explain that to people, they don't believe it. The WWMCCS network computers now have 99.99 percent reliability. I know this because I've been around there recently. I'm not saying there shouldn't be public debate, I'm just venting my frustration over some of the mistakes that have been perpetuated.

Student. If I might return to the devolution of command authority — I know you don't want to touch on specifics because they're classified, but my question relates directly to the classified nature of it. I think that if you harden the entire C^3 system, the most vulnerable part will always be the national command authority, the president himself. So when we talk about decapitation, if we were to receive, say, a couple of SLBMs in low trajectory with a flight time of about two minutes to Washington, DC, what happens then? Even though we may still have a functioning system, you won't any longer have the man in charge. Would you say that this uncertainty regarding the devolution of command authority is a major element in deterring the Soviets from attacking, and is that why we can't talk about it? In other words, is it that they don't know what's going to happen if the president is eliminated, if Washington is wiped off the face of the earth? Is it that we don't know what would happen, and that's why people here have been reluctant to talk about it? Is the fact that we cannot talk about it a major factor in keeping the Soviets from attacking — that is, we don't know about it, the Soviets don't know about it, no one knows what would happen, for example in NATO, with delegation of authority? I imagine there are things like predelegation too, although I'm sure you can't comment on that. I don't mean to pressure you into making any statement; but is the uncertainty of the whole thing a major element? The ability to have a second choice?

Dinneen. I understand your question, I think, but I don't really know how to answer it. Certainly our deterrence is not based solely on any uncertainty in the minds of the Soviets.

Student. Uncertainty about a second strike?

Dinneen. That's right.

Student. And uncertainty of successful recovery?

Dinneen. They have to appreciate, just as we appreciate about their planning, that the highest priority goes to planning what you will do, including devolution of command. They must do the same thing, but neither side is going to tell the other how that's going to go on. They're just not going to do that.

Student. I think one of the problems in creating public perceptions is that probably too little emphasis is put on reassurance that, while we can't talk about it, nevertheless it's well thought out and we know that we'll never have a problem. You never see that reassurance. That goes back to the problem that too often, after something has occurred, we find that we never really got around to working it out, it was too hard, and we put it in the ''too hard'' box, but we knew we'd have to get around to it one of these days. And all of a sudden the bomb goes off, and we find that that was the thing we were going to get to next week. People in authority haven't reassured the public that the system, whatever it may be, is going to work. Is that fair?

Dinneen. I know what you're saying, but I can't comment on it. You know, we have a representative democracy; as I said, these things are discussed with people who need to know. It's very clear that this is the kind of thing about which somebody could get up and say, ''We're confident.'' I've told you I'm confident we have a deterrent, and that that deterrent is effective. If the Soviets are stupid enough to have a first strike, we could retaliate. I can't say more beyond that, and I don't know if it would make any difference if I did. I know if this were fully discussed in public, that would not be a good thing.

Now, there are lots of other things we can go back and go over. I was intimately familiar with the NORAD false alert, which got very bad press despite long efforts to try to make it clear. That was a case where there wasn't any holding back. Right after the event Tom Ross, who was then Assistant Secretary of Public Affairs, asked me if I would meet with the press to explain it. I was reluctant to do that, for all the same

reasons, not quite as sensitive as some things we talk about here. I went down to his office, and I was chatting with him, saying, "Well, what questions do you think are likely to come up?" and somebody came in and said, "The cameras are all set up." Tom said we really ought to go on the record, so I went in and met with ABC, NBC, CBS, the *New York Times* and the whole crowd for an hour. And every question you could possibly imagine, they asked, and we answered most of them as best we could — some we couldn't, most of them we did. And out of that you get a headline or something, and it's just not responsibly covered.

The GAO just came out last week with "NORAD computer systems are dangerously obsolete." Okay? "A series of computer failures occurred at the North American Air Defense Command." These were highly publicized. But if you read the whole report very carefully, they know it wasn't a computer failure. It wasn't. It had nothing to do with the WWMCCS computers. But the headline in *Electronic News* today asserts that it was the NORAD computer system. It had nothing to do with the computer system! It was the fault of an electronic component that took the output from the computer and put it into a format to go over a telephone line — an integrated circuit in a printed circuit board built by a company that had nothing to do with the computer. That was the second incident, the June 3rd incident; there were two of them together. The second time it happened it was just a further test, it was really not a different incident. The first one had to do with a test tape that was inserted improperly. So it's not computer-related.

The other thing that's important in both those cases is that, because we had redundancy in the system, because the command people sitting at the console had inputs from other systems as well as NORAD, they were able to recognize within a minute or so that there were anomalies, and the thing was shut down. It didn't reach anything like the proportions people said. On the contrary: it demonstrated that we have redundancy, it demonstrated that people are in the system and can recognize the false alert.

Oettinger. I wonder if we could perhaps leave this and touch on two items before you leave. One is a bit more on the tactical side, but even before that, would you mind giving your impressions about Jones' comments in the paper "Why the Joint Chiefs Must Change," which touches more on organizational and structural matters than on hardware and systemics?

Dinneen. It's a very good paper. Dave is a very thoughtful, articulate, sensible citizen.

I don't get a chance to talk to this kind of audience that often, so I'll make a couple of other points, which you can take for what they're worth. I want to talk about my interactions with the military, and my interactions with Congress. Both are positive. I find the senior military officers as concerned as I am about deterrence, as concerned as I assume all of you are about preventing nuclear war, about reaching agreements with the Soviet Union to reduce arms. And very perceptive about the public. Sure, there are individuals in the military, just as there are individuals at Honeywell, or General Electric, or MIT, or Harvard, or anywhere else whom I don't agree with. But by and large they are reasonable and concerned. I want to say that, because so often somebody who's never had any experience with the military just sees it through the caricatures in the press that just aren't right.

The same thing with Congress. I probably, over the time I was there, acted as the principal witness in maybe 40, 50, 60 hearings, and met with Congress lots of other times. And I found that the majority of the members of the House and the Senate — though, again, you hear all the statements, and they have constituencies to support, and they don't want to shut down Fort Devens or whatever it is — are seriously concerned about the country's balance, about how much we spend on defense. And they will support programs when they come in seriously backed. You get things like that GAO report, and you get statements and so on, but the bulk of the people supported us there. So my relations with Congress were one of the better things down there.

Oettinger. Does that include Snodgrass?

Dinneen. Chuck wasn't a member of Congress.

Oettinger. No, no, but he was at that appropriations vote. All right, you'll pass that one.

Student. You mentioned your feelings about Congress and high military echelons, but you don't seem to see the press as being a responsible purveyor of information to the public. You've mentioned the press several times in kind of a roll-your-eyes manner, and I wondered if you would just give us some of your views on that.

Dinneen. I started out by saying that C^3 was not that complicated a subject, and therefore I wanted to say we can understand it. I think the press is a complicated subject. I'm tempted to answer you by saying, "Yes, that's right, I'm very unhappy with the way the press covers things." Yet, on the other hand, I appreciate the importance of the press more than anything. It's just that my experience with the press has not been all that good. So I don't know how to answer you. I want a free press —

Oettinger. I'm going to cut off that point here, because this is not an Institute of Politics seminar on press and government. I have spent hours in other contexts on this, and since this is my turf, I want to rule it out of order. There are lots of forums for that one. It's not unimportant, but it's off in another direction.

Dinneen. All right. Anyway, Dave Jones is a first-rate guy. He's been in the Joint Chiefs for eight years, he was Chief of Staff of the Air Force for four years, and he has served for four years as Chairman of the Joint Chiefs during some difficult times. He has not always agreed with either president, Carter or Reagan, and he hasn't always agreed with the people in his own service, and the fact that he's been criticized from both sides says to me he's a pretty good guy, and he is.

What he sees as a problem is the following. The Chairman of the Joint Chiefs doesn't really command anything, unless the deterrent fails and we go to war, and then he goes into the line. In the meantime he is senior staff, he meets with the president, he meets with the secretary of defense every day, and he advises on military matters, but he is little more than an advisor. Jones tries to compare it to the board of a corporation, which I know a little bit about now. He says: "This board which is the JCS consists of five directors, and they're all insiders, four of whom simultaneously head line divisions. The board reports to the chief executive and the cabinet members, supported by a corporate staff which draws all its officers from line divisions, and that staff turns over about every two years. The line divisions control the offficer assignments and advances." So Dave Jones doesn't have any control over who gets promoted. "There's no transfer of officers among the line divisions. The board meets three times a week to address operation as well as policy matters, which normally are first reviewed by a four-layered committee system involving full participation of division staffs from the start. At 75 percent of the board meetings one or more of the directors are represented by substitutes, and if the board cannot reach unanimous agreement on an issue it must, by law, inform its superiors." That means they've got to go to the secretary of defense and say, "We can't agree," and they don't like to do that. "At least the four top leadership and management levels within the corporation receive the same basic compensation" — they all get paid the same money. And that compensation is set by two committees consisting of a total of 535 members, that's the House board. "Any personnel changes in the top three levels, about 150 positions, must be approved in advance by one of the committees."

Well, you wouldn't want to run a corporation that way. Now, Dave goes through the history, which isn't that old. You know, the JCS was just formed in World War II, that's part of the 1947 statute that was put together during the war and amended by the major reorganization of 1958. I know all the chiefs very well, I have worked with them all, they're all good people. But it's just like we were saying before, if you're the chief of staff of the Army, you've got to represent the Army's position.

Oettinger. I think that as a group we're reasonably familiar with that diagnosis. Since you lived with it for four years, especially in your position, and have observed it the way it was before that, can you give us a sense of why the observation is recurrently made and nothing happens? Now General Jones is saying this, and again nothing will happen. It's an old and continuing story.

Dinneen. I don't accept the premise that nothing will happen. I think it may this time.

Oettinger. Well in that case, what's different this time that'll make something happen when it didn't last time? I'm just trying to stimulate you to comment on this.

Dinneen. I think there is greater realization now on the part of the services that they need to do a better job of joint operations, and a better job of joint planning. The Army and Air Force have been getting together over the last several years and doing joint planning on land operations. There is the beginning of some interchange of offices in some of the services, and more of a change in the service groups. It actually started just before I got there, but I really got it going: a joint program in command, control and communications in Monterey, and another one in Norfolk.

Oettinger. Jack Wozencraft in Monterey?

Dinneen. Jack's involved in that, yes. And it takes in all four services. So there's more of a realization of that need, and the realization comes about from things like communications, command and control, which are joint things. There is a recognition that, when there is disagreement among the individual services, the secretary of defense or the JCS chairman will support a thing like a navigational or satellite system or a joint tactical information distribution system, which cuts across all the service lines even though one service leads development.

So it's possible. What Dave is recommending really isn't that big a change, which is why I think there is a chance of doing it. He's saying, strengthen the role of the chairman, give him a deputy who will act for him. (Right now whenever the chairman's away one of the service chiefs sits in.) Limit the service staff involvement in the joint process. Now when the chief of the staff of the Army wants to do something he gets his staff to work up all the papers. Well, you know you're not going to get joint advice that way, so you limit that. And he wants to broaden the training and experience and the rewards of this joint staff. I think those proposals are modest enough so that they may happen. Why hasn't it happened before?

The other thing was that there was always a concern, it goes back to World War II, about a general staff — that somehow that would be dangerous for the nation. It was that combination of things.

So I think what Dave is recommending is an important first step. It'll be a move in the right direction, it's clearly needed. A lot of the problems we had in getting the rapid deployment force set up had to do with service rivalries, which I think we all understand. So I think you ought to read the Jones paper. You may not see anything there that's new, but, I think, coming from a guy who's lived with it for eight years, and has been successful at it, it's good, and the recommendations, being rather modest ones, are good.

Oettinger. There's an old institutional joke — "Where there's death, there's hope" — which implies that some of these problems solve themselves, because generations pass on and so the problems disappear. I remember in the early days of trying to get computer science established at Harvard, we had a visiting committee that consisted of a fellow who invented the automatic gearshift, another fellow who was in electrical machinery, and so forth; and until those guys got off there was nothing you could ever do, because anything that didn't advance the mechanical arts they just weren't going to support — not out of malice; they didn't understand it. So one can imagine a new generation coming in that may be more sympathetic. Still, my impression has been that this problem has been so perennial that there may be more to it, including the service ethos you mentioned. Are there congressional factors other than, say, the German-general-staff sort of fear? Or is this generational sort of thing happening, with more people realizing that joint operations are important, are we seeing that?

Dinneen. I think there's a good chance that the latter is true. I'd like to hear questions or comments from you. I don't know how this fits in with what you've been doing. Why are you all studying this anyway?

Student. If I might tie it in with what I'm doing, I'd like to draw an analogy. I'm dealing with tactical communications in NATO. I'm looking at structural problems, and it appears to me that this joint chiefs situation may be parallel to what's going on with tactical communications in NATO from the corps level down. There are, right now, six different tactical C^3 systems being implemented, and no coordination. I don't know if it's a generational turnover or what, but I think there's a realization among NATO commanders, and national commanders too, that they now have to join and cooperate in combined operations, which equates to joint operations in the case of the chiefs. Can you tell me if there's a chance that things might change there? Is a gross restructuring required? What would a first step be?

Dinneen. I don't know, but I think it will change. When I first went to the Pentagon, I went over to Europe to meet with my counterparts in England, France and Germany, and tried to get them to agree to a single tactical switch system. We had something called TRITAC, the British had something called PTARMIGAN, and the French had SINTAC. The first thing they told me was that there wasn't any problem at all. I argued with them for a long time and they finally agreed, "Well, maybe there's a problem. We can fix it with an interface box." I finally gave up and said, "Okay, let's do it with an interface box." That was the first step.

The thing that's going to fix it in the long term is getting in early in the development of systems. Once the system is far enough along, by the time somebody is building it, then you have all the national pressures.

We had our local congressman down beating all over us because we wanted to let the British bid on the Army SINCGARS program. A contractor here in the Boston area was doing it. If you get them involved early, in the R&D phase, you don't solve the problem next year, but you solve it, and that's what Bill Perry was trying to do with the family-of-weapons idea — get the allies together, do joint R&D and then have each country do its own manufacturing.

Student. But I see that as primarily a technical solution, having to do with technical interfaces. I've found in all the things I've read about NATO that all the focus seems to be on the "I" in RSI — interoperability, which to me seems more of a first step than a final goal. Once you have separate communications systems that can interoperate, that doesn't necessarily mean you have the best communications. You still need to work on the "R" in RSI, rationalization, which implies that we have to do something with the structure of NATO itself.

Dinneen. You're probably right, but I decided when I went down there that I couldn't solve all those problems, so I concentrated on doing what I could actually accomplish.

Student. The first priority.

Student. Could I take off from your mention of compensation of the joint chiefs, and apply it to engineering communities? The two representatives from industry who spoke here last year both touched on similar concerns. One was that the engineers in the military research and development communities are no longer either smart enough or current enough, because of the rapid half-life of current technology, to be able to formulate their services' requirements in a technologically understandable manner for industry —

Dinneen. Who said this? Industry people?

Student. Yes, Baker and Osborne, Bell Labs and E-Systems.*

*See William O. Baker, "The Convergence of C^{3}I Techniques and Technology," and James M. Osborne, "Meeting Military Needs for Intelligence Systems," in *Seminar on Command, Control, Communications and Intelligence, Guest Presentations, Spring 1981*, Program on Information Resources Policy, Center for Information Policy Research, Harvard University, Cambridge, MA, December 1981.

Dinneen. Both retired.

Student. The other concern is my primary point: that the technicians actually in the services were too dumb to use the equipment when they got out there, so it's more expensive today to develop the stuff — you have to spend more money.

Dinneen. I'll be blunt. I don't agree with either of those.

Student. If that's the case, my concern, as I see it from the user end (I'm a Navy officer) is that whenever we get a smart technician, industry buys him away.

Dinneen. Well, we wouldn't have the industrial infrastructure we have in the country today if it weren't for the military training programs. The nation has failed in vocational training. The military is training more people to be technicians for industry than anywhere else.

Student. That's at the technical level. At the engineer level the problem appears to be the same, in that, where the engineering laboratories once were able to compete, they apparently no longer can. Down in Newport engineers actually voluntarily come in and turn in their engineering badge and say, "I'd rather be a technician, because the technicians get paid an hourly wage, and when they go out and ride the ships they can make $65,000 a year as a technician and I can only make $52,500 as an engineer."

Dinneen. Well I don't agree with the complaints of the two guys from industry, but I agree with the conclusion, which is that we have got to do something now. I didn't want to get into this one either — you know, like the press issue.

The civil service reform which happened during our administration was not reform at all. It was just a disaster. We've got to do real reform. I don't know how to do it, but we must have a good permanent civil service, and we must have a good permanent military. I can argue both sides of the volunteer force question. I've argued for it, but I'm not sure I could any more. That may be one place where my perspective has changed — it has nothing to do with being in industry; it's just due to thinking about it more. In the technical fields we're getting volunteer people, and we can maintain our equipment because we're getting good people there. In the infantry, though, I don't think we are getting them — and it is not fair. I say universal military service is

fine, but the country can't afford it, and I don't know how to do it — you can't do it, unless you do it fairly. So really I don't know the answer to that.

The thing I worry about — the military's guilty of it, industry's guilty of it, and Congress is guilty of it — is that they're not willing to stop anything once it's started. What I worry about in the budget changes that have been made now is that, as we increase the budget, we start a whole lot of new systems. I don't think Congress is going to think about what the president's budget is going to be this year. He's going to cut it, Congress is going to cut it, and when you cut it you're going to have all the systems being produced below marginal value. That is *the* hardest problem, to decide that we're not going to have everything and just cut some programs out. I've tried it. I cut a few; I didn't start any. I said, "Let's finish the ones we have." But then you get blamed because they are obsolete systems. The gap isn't between what you have and what you could have that's in Honeywell's finest research laboratory. The gap is between what they have out in the field — which is vacuum tubes in some cases — and what they could have if you finished the systems you now have underway. It's common sense.

Student. In the sense that you see the need for improvement in the JCS, isn't the Jones proposal an interim solution, and won't the same problems occur again? Doesn't the answer have to be a general staff in some form or variety? And won't they just have to demystify the notion of spike-helmeted, goose-stepping Prussians ruling the country? Isn't it that the institutional pressures on the chiefs are never going to be relieved until they know that their time on the joint staff is protected time?

Dinneen. I don't know. What I'm willing to do in this, as I am in other things, is take an evolutionary approach. Which is to say we're ready to take the next step, and what Jones has recommended is a reasonable next step. Let's do that and see what happens. The Canadians changed all their uniforms and made them all one color. Now they're going back. So I don't know. If having a general staff means you must go to a different service structure, that's just too big a step, and too far into the future for me even to contemplate.

Student. Joe Wyatt, who is teaching a management information systems course here at the school, mentioned that of all people in computers, mainframes, software, etcetera, probably only 10 percent can be considered really to know what is going on in day-to-day development. And he implied that, of that 10 percent, the majority were in private industry because of salary and sheer price competition. From your experience in the Defense Department, do you feel that the civil servants, or the people involved in system-building in the military, are not the first team, versus those who are in private industry, or are they on par?

Dinneen. I'll say again what I said before: I think we have got to have a good permanent civil service. I think we need that kind of continuity. It isn't just the joint chiefs who turn over every two years — every time we have an election, you throw out the top five to six hundred people running the government and start off with another five or six hundred, and it takes them a year even to understand where the offices are and how things are done.

I don't think the people we have in the civil service now are the cream of the crop. Honeywell, IBM, General Electric all have good and bad people, but I think on the average, because they pay higher, they attract better people. And they have good people in universities. You have some good people in government, but by and large they are not as good as they ought to be, and we've got to fix that — and as I said, civil service reform didn't do that. It's really absurd to have the salaries structured the way they are now. You could pay the Congress a lot more money if you wanted to, and a few of the top people, and the amount of money that it would cost the nation is small compared to what we would save if coupled with that was some reasonable way of getting rid of the people who aren't any good, and I don't know any way to do that. When the Senior Executive Service was formed, I went to a discussion of it at Fort NcNair, run by Booz, Allen, Hamilton or whoever. They started explaining about how this was going to be a great thing, and they got bonuses, and if they got a satisfactory report, something would happen to them. I said, "Does that mean you could fire them?" He used some expression. I said, "Is that a euphemism for 'fire them?' " and he said, "No, it's not." It means that they will be demoted to the highest permanent rank, and they'll keep getting paid the same amount of money. What the heck... You have to expect those people to produce and if they don't, get rid of them. But we can't expect to get the best people unless we also provide good positions.

I think it's just remarkable that under these circumstances we have so many really first-rate people, both in the military and the civil service. There are lots of

good people, very dedicated people. I talked to one of the women astronauts, an outstanding person, 30 years old, a Ph.D.; I don't know what astronauts get paid, but I'll bet it's around $30,000 or $35,000; they work under the same rules that you work under and I worked under, and every time they travel they lose money. It is indeed remarkable that we are able to get outstanding people into the military, into the permanent civil service.

Student. The comments about the joint staff that General Jones made are long overdue. And there are good strong arguments for what he's trying to do. However, it is my feeling that until the joint staff gets some money of its own, they're not going to be able to do anything no matter what the organizational structure is. Now they're just starting to get some money, very small discretionary amounts that the chairman can use for the CINC initiatives. Do you anticipate that that will grow? Do you think that that is where the real power is going to be? Because right now the services own the money, and as long as they do, they're going to run the show.

Dinneen. Well... let's get back to that question about evolution. I would say that the next step in that evolution is not all the way to the general staff, but to take something that is clearly a joint thing — like communications, command and control — and put the money there. When the Communications, Command and Control Directorate was created during our administration, Hill Dickinson's shop, he still had the same problem of getting all the services to agree, but he could put money together for WWMCCS and other things. When I was there I was able to take some of the money and allocate it to the smaller systems without going back to the Defense Resources Board. But you couldn't move that kind of joint approach all the way up to the joint chiefs. I think that might be the next step. But you're right: unless the joint chiefs have control over resources, they're not going to increase their influence.