

***INCIDENTAL PAPER***

---

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

**The View from the Hot Seat  
Richard D. DeLauer**

**Guest Presentations, Spring 1982**

Richard D. DeLauer; Hillman Dickinson; Gerard P. Dinneen;  
Richard H. Ellis; R. Thomas Marsh; Thomas H. McMullen;  
William G. Miller; Richard G. Stilwell

**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.

*Chairman*  
Anthony G. Oettinger

*Managing Director*  
John C. B. LeGates

Copyright © 1982 by the President and Fellows of Harvard College. Not to be  
reproduced in any form without written consent from the Program on  
Information Resources Policy, Harvard University, Maxwell Dworkin 125,  
33 Oxford Street, Cambridge MA 02138. (617) 495-4114

E-mail: [pirp@deas.harvard.edu](mailto:pirp@deas.harvard.edu) URL: <http://www.pirp.harvard.edu>  
I-82-3

## The View From The Hot Seat

**Richard D. DeLauer**  
*Undersecretary of Defense for  
Research and Engineering*

---

*After 23 years in the private sector, Dr. DeLauer was nominated by President Reagan to be the point man in the DoD for science and technology, basic and applied research, development and acquisition of weapons systems, C<sup>3</sup>, atomic energy and intelligence resources. This makes him the apex of the C<sup>3</sup>I pyramid. Leaving the Navy after a 15-year career in naval aeronautical engineering, he joined TRW, where he directed the Titan ICBM development program and later the ballistic missile program. He rose to vice president and general manager first of the Systems Engineering and Integration Division, then of TRW itself and, at the time of his move to Washington, was an executive vice president. Now, after a year on the other side of the fence, he is a fountainhead of ideas, experiences, and reflections on what is involved in making the complex, sometimes cumbersome defense technology picture emerge from the welter of conflicting interests into the light of day.*

---

**DeLauer.** A year ago I talked about the overall problem of management.\* The command, control and communications question was more or less the backdrop against which to draw examples. I shared with last year's group certain perceptions of the industry — what it is doing, and how it interfaces with the people who need the command and control systems more than anybody else: the federal government, particularly the Department of Defense.

After one year of being out of industry, seeing what Defense is trying to do and trying to get some things done, I see I could have been even stronger in my statements last year about industry's approach to some of the problems. If there's one general thing I've learned in this last year it's that it really takes partnership to get anything accomplished, and if there is a weakness in any one of the participants, whether in ability to understand what you want to do, make the proper kinds of investments, or reveal all the problems involved,

there's nothing like the defense business to bring out the consequences, and the shortcomings of either party.

Let's talk about the transition. I came in fulltime just about a year ago. I'd been working in Washington before that for a month off and on, just making the transition. The leadership — Secretary of Defense Weinberger and Deputy Secretary Carlucci — had really gotten things started. They had worked on the aspects of the management of the Defense Department that had been criticized for many years by many people, of whom I was one. I had participated for almost seven years in about five different Defense Science Board studies on the shortcomings in our approach to managing the Defense Department, and we had a big list of inadequacies that had to be corrected. Other people had done some of the same thing; over a decade there had been some six or seven management reviews by the Department of Defense which concentrated on what ought to be done to improve the systems acquisition process, to have a better way to acquire systems, a better way to spend the taxpayers' money.

The first thing this new management did, just about the time I came into the building, was review the big-

---

\*See Richard D. DeLauer, "A Major Contractor's View of C<sup>3</sup>I" in *Seminar on Command, Control, Communications and Intelligence, Guest Presentations, Spring 1981*, Program on Information Resources Policy, Harvard University, Cambridge, MA, December 1981.

gest weakness we had, which was the mismatch between the planning system — it was called the Planning, Programming and Budgeting System, which in the past has been a budgeting exercise, completely managed by the Office of the Secretary of Defense — and DSARC, the system that acquires equipment and services. They were never coupled together. This lack of coupling has always been a problem. Nobody can understand how you could run the budgeting system, the resource allocation system, without knowing where you were going to put the money. The new team integrated the two systems and reconstituted them as the Defense Resources Board, which serves as the allocation authority. As they restructured it, the board now included a mixture of people from the Office of the Secretary of Defense, which is the Defense Department staff, and the leadership of the uniformed services. So for the first time in the resource allocation process, the service secretaries sat at the table with the secretary of defense, the deputy secretary, and us undersecretaries and assistant secretaries. This group then essentially provides management oversight of the resource allocation process. That was a fundamental change in the way we allocate the money.

The next structural change that was accomplished was to integrate the process. The policy side of the house would generate what we call defense guidance, a document the Secretary signs that says what we expect to do for the next five-year period. It has broad categories to show where resources ought to be applied, who ought to do them, and how they should be implemented over what period of time. The defense guidance is reviewed by the comptroller, who makes a first-cut allocation of resources for the Army, Navy (including the Marines) and Air Force, and the elements of the Defense Department: the Defense Communications Agency, the Defense Mapping Agency, the nuclear agency — all the agencies that cut across all the services. Those recommendations are sent to the services, which publish their five-year plans in the form of POMs — program objective memoranda. In these documents they lay out for five years how they're going to meet the secretary's defense guidance: force structure, personnel, operational readiness, research and development. The POM document spells out funding for the five-year period, number of articles, development time, pay structure, building and housing. So in one document you've got all the resource allocation.

Now, it doesn't take any genius to figure out that, as submitted — Army, Navy, Air Force, OSD — put them all together and there really are mismatches. In the

past, those mismatches were essentially reduced to a zero-error function by the staff of OSD. They resolved it, sent the material back to the services, and said, "This is it." This time it wasn't done that way. Instead it was done in a series of reviews by the Defense Resources Board. But in order to be able to have it manageable, they had an interim process in which it was looked at by Research and Engineering, which I run — by our PA&E (Program Analysis and Evaluation) staff, primarily people who look at the cost-effectiveness of different force structure mixes — and by the comptroller.

We integrated the three different program objective memoranda into one coherent document. We identified mismatches, underfunding, and programs that weren't funded in adequate amounts in each of the services. Command, control and communications was a perfect example of that. You can't have the Navy funding it at one level, the Air Force at another and the Army not funding it at all, and expect them all to play together as a choir. We fixed that by an iterative process — not perfectly, not even semi-perfectly, but as a first cut.

And then, right in the midst of trying to do all this, the whole budget exercise of last spring got involved: the big fight in Congress over what the budget was going to be, whether it was going to be balanced or unbalanced, and the whole question of taxes. So we had to change our allocation levels up and down. But it served as a first model, and it came out reasonably well. We identified many things that could be better integrated, and we proceeded to prepare the budget that way, and that's the way the 1982 budget went in. Now we're doing the same thing for 1983. This goes on just like clockwork. We're doing a 1984 program objective memorandum pricing right now, and we're starting to get it for integration.

So that was one of the fundamental changes in the planning structure of the Defense Department. It's the right way to go, everybody's always wanted to do it this way. I think we can do a better job of integrating. One of the real problems is that it's still the civilians versus the military when it comes to adjudicating these things. The staff of the Office of the Secretary of Defense are mostly civilians, but though the services have civilian secretaries, their chiefs of staff sit with them in the meeting and provide input.

At the same table sits the chairman of the Joint Chiefs of Staff. Now, you'd expect him to be able to provide the military point of view when it comes to trading off certain things in detail. But it turns out that the joint chiefs don't work that way. All he can give

you is the consensus — not even the consensus — the unanimous opinion of the chiefs. So he's just a reporter. And, as you've probably noticed, in the last three months General Jones, who's retiring as chairman, has gone public with his views on how the Joint Chiefs of Staff and the chairman's role should be reorganized and restructured.

**Oettinger.** We've distributed Jones's remarks, and read them. You introduced this by saying it's a civilian-versus-military dichotomy. If Jones's recommendations were followed, would it still be? Did you mean it in that sense?

**DeLauer.** No, I should have been more explicit. It's a civilian-versus-service, or military, point of view. There is no integrated service point of view, and there's no integrated military point of view. I'm hoping that, in the changeover, some of the reforms Jones was talking about will really take place, and the chiefs will no longer be required to have complete unanimity of views on all subjects before the chairman can say anything.

**Oettinger.** So is it really because under the present structure only civilians are capping, and if there were a capping military or something —?

**DeLauer.** Well, no, it's not that black-and-white. Let me give you an example. When we had a budget cut, the three services came in with different views on how to do it. The Army says, "Look, we're not going to cut readiness; we're going to cut force structure. We recommend you take the 7th Division out of the force structure." So they cut force structure, which means they can't make certain commitments. The Air Force says, "We're going to cut readiness to a degree, but we want to keep force structure." The Navy — John Lehman has 600 ships; he wants force structure over everything. So he's going to cut everything else out, readiness, aircraft procurement, just to keep the ship-building program going. Now these are three different outlooks, inconsistent with each other, and the secretary of defense ought to say, "Look, supported by us, you make the recommendations."

Now, it turned out that that was the big cut. Finally Weinberger held fast and wouldn't let even the White House staff overrule him, and the president backed him up, and they got most of the money, so they didn't have to reduce the force structure. But I think we're going to be faced with doing that now. And in general I think

that, now that things are a little better planned, people will agree to reduce force structure in favor of modernization and readiness. That's not going to save much money in the near term, unless you can get all the people off the payrolls. So cutting force structure was the basis for the planning.

Then we took a look at the acquisition process itself. All the management studies of the past had great recommendations about the instability of programs, how they were underfunded initially and therefore always had a bow wave out in front, so that everybody always gets accused of having overruns when really they were underestimated by design, and never could catch up. Buy-rates were made uneconomical in order to stay within the budgetary limitations. Other recommendations from the past included a certain amount of decentralization of program management, reduction in documentation — all the things that any decent manager would look at and say, "These are the things we ought to do." We looked at all the recommended improvements to our acquisition process and ended up with what were loosely called the 32 Carlucci initiatives. Now we're in the process of trying to implement the initiatives, and we've had some reasonable success.

The problem is, everything moves at the speed of a glacier there; you take one step forward and three steps back, then you do four steps, and after a week's gone by you've made a step. I'm in the process of trying to institute a program management reporting system which will tell me how much money we've spent, how far along we are on the program, the dollars and the content, and the real estimate to complete. We worked the hell out of it and sent it up for review — and the reviewers came back with, "Why can't you use this document, and why can't you use that document." So we're back to square zero, and I've got to go back tomorrow night and start working it all over again, because for every guy who says yes, there are three guys who say no. That's the kind of situation we face.

Now, the number one issue we had to work on in the beginning was the whole question of modernization, particularly on the strategic side. We put together a five part strategic modernization package that really was coherent, starting out with the most important thing of all, C<sup>3</sup>, which is the number one initiative. The second issue was the whole question of the bomber force, and getting rid of the aging B-52s. The third was better defense capability. The fourth was survivability of the land-based ICBM force. And the fifth was the modernization, at the end of the decade, of the SLBM force.

All this strategic modernization was predicated on a threat assessment that says the Soviets have an increasing capability. Our strategic forces have very poor survivability. We don't have the actual, or perceived, ability to survive in the kind of strategic conflict we see in the future. We have to do something to address that. The biggest deficiency was in command and control, that is our first priority. The problem with the land-based missile system and the B-52 bombers was their survivability — between the Russians' accuracy and their ability to "fractionate" the reentry vehicles on their missile boosters, the multiple protective sheltering system of the Carter administration was not survivable. That was determined by an independent panel run by Charlie Townes, the Nobel laureate from the University of California. The B-52s are vulnerable now, and by the time we spend all the money to put cruise missiles on them they're going to be more than vulnerable — they're going to be a very enticing and attractive target, and they cannot handle the base escape parameters inherent in certain surprise attack scenarios. We had to do something about force modernization on that, and that of course is where the B-1 comes in. For long-term survivability we rely on the D-5, a very accurate long-range sub-launched ballistic missile. It will be fielded on the Trident II submarines being constructed for an IOC near the end of the decade or early in the next decade.

That was the package. Congress bought it. The ICBM basing, which was only really one piece of the problem, was heavily criticized, but all the rest of the program was accepted. There was a little battle on the B-1 versus the advanced technology bomber. But we had the facts and were able to show even the critics, and they supported us. There was an argument on the interim basing of the MX missile, and that went back and forth and back and forth. We told them we were going to have a permanent solution some time in late 1983. They pushed it up to mid-1983, which we accepted. And then two weeks ago the Senate subcommittee voted no authorization for the interim basing of MX, and the House did the same thing, and now we're scrambling very hard to put a program together that will at least start on the permanent basing concept, and we will be going back to Congress in the next week or two. A letter goes to the president tomorrow which says all the things we have to say about what we think the permanent solution might be, and the direction we might go.

This is a little comforting: I spent the morning out at Lincoln Laboratory, where they've been looking at the

question of ICBM survivability, and for once I got some support. They had done an independent analysis and came up with about the same answers we have. But whether we try to sell it like crazy, or not — remember, the economic situation has changed and people are now starting to insist that the defense budget be cut, and it probably will be — I hope we can keep the strategic program intact. Even if you cut it to nothing, you wouldn't save any money this year, because not much of the money's going to be spent until next year.

That's about where we stand. What's left to do now? The next step is to do the same thing for conventional forces. That's going to be a harder problem. We had more money spent there, on more programs, with less coherence, and less real commitment to them! There's no question about it: the strategic part is a strong commitment to get something done, but conventional forces is a whole different animal. They're all orthogonal to one another. Even in the Navy, you can't get agreement on whether to supply the AV-8D vertical takeoff airplanes for the Marines; the Marines really want to take that money and buy A-18s, which the admiral leadership wants. The two are incompatible with each other. As for the Air Force, the issues are exactly how you're going to configure the tactical air force, both in numbers and in quality, and just what advanced programs we ought to be taking care of; how we should handle the whole question of the European theater scenario, and how to do the deep interdiction the Air Force wants to do with manned aircraft. They need to look at other ways to do it, perhaps with unmanned vehicles, for example. So it's reaching the point where we have to take the same cohesive, coherent approach to the conventional forces that we took to the strategic. It'll be much harder. It will probably take more than a year. The problem is, you finish one cycle and you can't get another crack at anything until the next one!

What other perceptions do I have? Well, I always thought I was a pretty good lobbyist when I was running TRW — military business, government business. Well, I was a piker, I am telling you. And not only that, I have two bosses who never had any industrial experience. Carlucci came out of the government side; he retired as a Foreign Service officer, then was an ambassador, had experience with the secretary of HEW during the Nixon administration and the CIA in the Carter administration. So he understands the political process, the administrative side, but he never had to deal with any industrialists. His problem in HEW was with teachers, or doctors, or the welfare issue, but no con-

tractors. He didn't have to deal with that when he was an ambassador or in the CIA. And now he's dealing with all these contractors and, oh boy, they're putting the pressure on. Everything is so single-interest. For every winner there are four losers. You never hear from the winner — he doesn't even call you up and say thanks — but all the losers start wanting to change everything around, and that's what we've had to put up with. And it's difficult to change.

The real problem is that the great white hope of the early 1970s, congressional reform, has turned out to be a disaster. There's no strong leadership in Congress, a jillion committees all with big staffs, and the staffs have all the leverage, since they do all the work that the members vote on. I go up there to the — oh, let's take the House Armed Services Committee, which is one of the authorization committees. They tell us what things we can have. The hearings are held before the full committee, some 32 members, and if six show up, you're lucky. But always the committee's two or three staff guys are there — very bright, very hard-working, they're good guys. They don't always agree. Tony Battista came out of the Navy lab structure. Tom Cooper is a Ph.D. engineer out of Berkeley, a teacher at the Naval Postgraduate School, now on the staff. He's a bright guy, knows the business, knows the technical aspects. But they've got to explain program after program. They have a special subcommittee for the space-based laser. The chairman sits there and doesn't do anything, and these two guys do all the talking: "Why are you doing this? Why are you doing that?" We had 90 million dollars in for space-based lasers: a tracking experiment, some other things, all in high-powered five-megawatt chemical lasers. They cut all the money out except for the pointing and tracking, and they inserted their own line item to do millimeter wave laser work. It makes you wonder about who has the responsibility to get the job done.

That's the problem right now. There's not enough strong leadership, so it's wide open to whoever can get to the staff, or to a member who will take an interest. I look back and wish to hell that we had it like they used to have it, when a guy like Carl Vinson would say, "Okay, gentlemen, this is what the Defense Department's going to look like for the next three years," and he'd tell it not just to the members of his committee, but to the Defense Department people out in front, and that's how it'd be. You'd work out a deal with Carl Vinson and you had a deal, and you could run the place that way. But today you really can't run it. It's a day-to-day operation. I mean, they were fighting on the floor

of the Senate and in the Senate Appropriations Committee, I was in continuous contact with Senator Stevens, the chairman of the Defense Appropriations Subcommittee of the Senate Appropriations Committee. Ted worked his heart out to get a reasonable bill through the Senate. He and I ended up negotiating over the telephone. He says, "Will you take this?" "No, I don't want to." "If you don't take that, you're going to lose the whole bit." "I'll take it." And he'd go and get the votes. And, boy, that's a hell of a way to run a railroad. We both end up reacting to the politics of the moment. It sure raises hell with the orderly process of planning. That's a lot different than it used to be.

What else is different? I hate to tell you this, but don't believe anything you read in the newspaper. You can believe half, but you don't know which half to believe, so you really have to disbelieve it all. The Pentagon is as leaky as a sieve. There's no way you can keep anything quiet. The secretary gets so mad at my end of the building, he calls it Aviation Leak; he thinks some of our guys have got a direct pipeline to *Aviation Week*.

One Tuesday I wrote a classified letter to the Navy, asking them to examine whether or not the A-7 was a less costly alternative to the A-18. On Thursday it appeared verbatim in one of those publications. Verbatim! It was a facsimile of the page. I had written another one to the secretary on an Army program called SOTAS, a helicopter that pops up, looks around, tells where the target's sitting and pops down while they fire on it. They'd given the job of developing and integrating the radar to Motorola, which doesn't have a lot of experience at "integration." They produce chips and subsystems and everything else, but they couldn't get the software to work. So I wrote and told the secretary we had to restructure the program and put a cap on the cost. He wrote on the margin, "Why don't we cancel it?" and sent it back to me. Now, this wasn't a question of a letter that can get in the Xerox machine and you can make a thousand copies. There was only one copy; it went to him, and that one copy came back to me with his notes on it. Three days later it appeared in the trade press. This time it wasn't a photostat of the page, but it said what I said and what he said. After that, I became more careful of the letters I write. If I have to work up a piece of business, I go down and do it orally — keep away from putting things on paper, because they will come out. So that's another "greening of Dick DeLauer."

**Student.** I'm fascinated listening. I mean, we've been cynical already earlier today — this was in the class before you arrived — but this —

**DeLauer.** What subject were you talking about there? Academia?

**Student.** Well, as a matter of fact, we were not. We were talking about the US Postal Service and a few other things.

**DeLauer.** Oh. That's not even an institution. That's —

**Student.** But my question to you is: having moved now from the private sector, and you had been in the private sector for a number of years before —

**DeLauer.** 23.

**Student.** Well, that's a number! And so now you've moved to government, and you sound somewhat disillusioned — not somewhat; you sound disillusioned and a little cynical about the whole thing. And I'm just curious to know — seeing what you're seeing, knowing how private enterprise looks at government, and sensing, I think, to some degree how government is looking at private enterprise — how do you think there can be mediation between, or joining of, those two sectors? You obviously have to work together. And I think there was a feeling that the congressional reform was really going to be a very good thing for the country. Clearly the press is an intermediary in that whole situation too.

**DeLauer.** It's a disaster.

**Student.** Now that you're seeing it in operation, how can you translate your insights to your peers in industry, and maybe make people less cynical about government?

**DeLauer.** Well, you know, I don't want to give the wrong impression. This tends to be my style, to give you the extremes to make a point. I wasn't really looking for much more. You can't work both sides of the fence for as long as I have without recognizing the weaknesses.

**Student.** But I think that's too bad. I think you're in a position to be able to make some recommendations, or at least suggestions, to your peers in both the private sector and in government. I mean, you're in an ideal position that too few people are in.

**DeLauer.** Well, I've been trying to recognize that the environment is what it is, and work the environment. It isn't so much that you can work a particular problem with one person or one staff guy and have it happen; but if you work it with them and they decide to work it with you, then you can make headway. John Tower really runs that on the Senate side, and Ted Stevens pretty much runs the stuff in the appropriations committee. And the fact that Tower and Stevens don't always agree makes a little problem for us. But that's the way it goes; you live with that. You work with the Republican guy, you work with the other Democrats that really have defense on their minds, and boy, there's a lot of them — a guy from Alabama, a guy from Seattle, there's plenty of support. So you work with them and work things out.

So, I guess, it's more frustration than cynicism. Now, the cynicism I do have is with the press — not just the press, the media. I had to make a date four months ahead of time to go to a breakfast meeting organized by the Washington bureau of *Newsweek*. Once a month they have a breakfast meeting with all the correspondents — the magazines, the papers, everything. My subject was to be the acquisition process, because that's my job. But unfortunately the administration hadn't arrived at the strategic decision yet. So, when I showed up for breakfast prepared to talk about acquisition, they had no interest in anything but the strategic decision. I tried to explain to them as carefully as I could that the president hadn't signed the piece of paper, but that we understood it pretty much as follows; and I went over the things I just went over with you: lack of survivability. A guy from one of our major newspapers looked me in the eye and said, "That's nonsense. Why don't you people in the Defense Department just declare Minuteman survivable and get on with it?" I said, "You can't be serious." He was. And then I went on and started explaining this, I really laid it out for them. They didn't want to hear the answer. They were all inventing their own solutions.

And then of course every faction has its own leaking system. The Air Force leaks differently from OSD, the Navy leaks are different, and so on — and the reporters have a network, and they'll get a question answered here and a question answered there, and then they'll synthesize a solution. Usually, everybody synthesized a wrong solution. That's why they were really mad, I think, about the decision the president made on the MX — because they had come up with the wrong answer.

They kept arguing that the civilians did it and the military didn't have a say in it — which was dead wrong. The Defense Resources Board went over every

single detail. I spent hours with Lew Allen, the chief of staff of the Air Force, and his deputy. They didn't agree with a lot of it, but they were consulted. Yet everybody was giving the secretary hell for being arbitrary and not listening. If you don't listen to the blue suits on one thing, then you're not listening to the military. On the other hand, if they'd had a different point of view, it would have been, "Well, you people aren't making up your own minds, you're letting those generals and admirals run you." So it's a lose/lose situation.

You know the hearing process on the Hill. Most of the rooms are just like we are here, two tiers of circular daises — you're sitting down here and you're looking up at those guys; the senior ones are sitting in the back and the juniors, the newly elected ones, are sitting down in front — and all I've ever seen of them is their names, because they never show up. And they alternate — Republican, Democrat. Republican, Democrat. The chairman, a Democrat in the House, starts. The next guy to talk is Bill Dickinson, the ranking Republican, and then over to Sam Stratton, the next ranking Democrat, and they go back and forth. They each get five minutes. Sometimes you get a question, and part of the technique is to be sure to use up the five minutes so you don't get another question. They tend to make a big speech.

One time, I had had a closed hearing on a secret subject. You don't read your whole statement, you summarize it. I finished talking about what the program was, answered some questions, and then I got up and left, and they opened it up for the Air Force to come in. Meantime, a representative came into the hearing late, who's a space laser buff. And before even thinking, he stops the whole proceedings and says, "Now, let me tell you, on page 35, the undersecretary said the Russians are going to have a space laser in orbit in such and such a year." Bingo, all of a sudden the whole cat's out of the bag. He starts reading top secret stuff in an open session. The reporters are sitting there. It took us three weeks to get that one straightened out. He quoted me out of context. I didn't really say what he read. It was in my statement, but what I was doing was relating an intelligence estimate of what the Soviets were going to do. God, I had to get on TV that night and deal with, "What the hell did you mean?" and all that sort of questions. Some of them are just not very responsible.

Dan Daniels, the Democratic representative from Virginia, a strong supporter of defense, was sitting there after all this argument about not listening to the blue-suiters, and he said, "It reminds me of when I was a little boy. My mother was always very careful with

me. She always told me, 'Dan, if you really want something badly enough, you just pray to the Lord for it.' " He took that seriously, and he was off praying, and after a while nothing was coming through like he thought it was supposed to. So he said, "Mom, I don't think you're right, the Lord didn't hear me. I keep praying, but I'm not getting anything." She says, "Dan, he hears you. He just doesn't agree with you." That's what it was like. The secretary heard them, the president heard them, they just didn't agree with them.

**Student.** I hate to ask questions about the press, because that's not really the topic — but it seems that your cynicism about the press is more of a command or management problem within either the Department of Defense or the armed services, because these leaks are coming from people in your department or in the armed services who have an axe to grind. The press are just happy to have the leaks come to them.

**DeLauer.** I don't disagree that we contribute to the problem. But in many cases when you do give them a straight story, when you lay it all out for them — let me give you an example. There was a freelancer who had a chance to do a story for one of our major newspapers, and he was all hot for that. He came in for an interview with me, and of course we have our public affairs people come in too, so I have a record of what I say. And, as I remember it, he said, "I wanted to talk to you about the way the decision was made on the airlift on the CX. I've checked into it and I've found that it's not very sexy." He was using "sexy" in the sense of "sensational." He says, "If I can't make it sensational, I'm afraid I can't sell it to the newspapers. What can you tell me that's sensational?" I say, "There's nothing that's sensational. Here's what we did." And I went through the steps, and everything else. That story was never printed. So the issue I have with them is: on the broad spectrum of things they can write about, they can be positive, or they can be negative, and I've yet to see them be positive.

Now, there was a great big leak. The whole question of the polygraph and all that sort of stuff came up at a DRB meeting. We were trying to do the first cut of integration, and notwithstanding what the services had submitted, the first cut looked like we were going to have a budget shortfall. Our experience has shown us that programs grow a little bit more than you've estimated, so we put a number in for that. We told them that there was some funding of programs that weren't in one service and ought to be, because they had to

match something else. When we put it all together, it was a mismatch of about 75 billion dollars over five years. We started to talk about that.

Now, unfortunately, that also showed the force structure level. Unfortunately, too, the Joint Chiefs of Staff put out a planning document that said, "If everything in the defense guidance happened in the worst possible way — no warning, all the conflicts broke out simultaneously —" you know, all the worst-case stuff — people argue that it's not the worst case, but it's nearly the worst case — "here's the force structure we would need." They've always done that. The most you can do is consider that as a big upper bound. But somebody put a damn number on that, 700 billion dollars, and that number finally got out. This was a closed session; there weren't 22 of us in that room — there are more people in this room than were there. John Lehman, the Secretary of the Navy, raised some force structure issue, and he and I had a little argument. The rest of the information was in the vugraphs and documents — so, though it was secret, it could still be floating around.

The meeting was over at 3:00. I got back to my office at 3:10, I had a half-hour meeting. I looked at my telephone pad: "Call reporter X" — the military columnist for a major D.C. paper. I couldn't call him right away, but his name was on the list before 4:00. At 4:30 I called him up. "Dick," he said, "I understand you had a great DRB meeting, you're the star of the show!" I said, "What the hell are you talking about?" He said, "Oh yeah, you and John Lehman had a hell of an argument." And I said, "Were you in the room?" He said, "Now I want to talk to you about this 700 billion dollar mismatch." I said, "What are you talking about?" He said, "I've got the document in my hand." And I said, "Now listen, that's not the number that's meaningful, for goodness sakes don't do anything with that. Why don't you report the fact that the DRB meeting was lively, that we're trying to integrate the programs and trying to arrive at a consensus, that's a positive story."

And how did the story come out? "There is a shortfall of seven hundred billion dollars over five years." It had been leaked to him by somebody in the room, because the paper didn't have the fact that I had an argument with John Lehman. I immediately picked up the phone and called down to the front office and I said, "Hey, look, somebody in that room walked out and picked the phone up and leaked this." And that's when they used the polygraph and found the guy.

It's an ego problem. There are a lot of guys who just love to open their mouths, get in front of people and

talk, get their names in the paper, and things like that. My view is that there's only one name I want to see in the paper about the Defense Department, and that's the secretary's. Everybody else be quiet! But that isn't the case for everybody.

But here was an opportunity. Before the story was written I covered every single fact I could. The reporter had the document, he could read, he knew what the hell we were trying to do. It wasn't sensational to give that away. That 700 billion dollars has been with us for three months now! The amount of time it takes to build a backfire — we had to have special meetings with the people in Congress on what we're doing, why we're doing it, how this number was arrived at. The secretary got nailed, and he said, "Oh, that's the military's wish list," which was the wrong answer, too, that didn't help. He really didn't know how the 700 billion was arrived at because he wasn't in the meeting. The deputy secretary was, but he didn't understand how those force structure requirements were generated.

This has always been a problem even in some Defense Science Board studies we've had — that this is an almost meaningless characterization of the military need. One reason we put it in was not to price it, but to show that it was meaningless against the real world, and that we ought to do something about that. We ought to provide a better way to arrive at our view of what it takes to do a thing, to deal with some form of contingency — you know, "If these two happen we need this many. If it doesn't happen, we have so much warning that we could get by with less." We need to do what any decent analyst would do as, essentially, an operations analysis of the problem.

So that's one reason I'm a little bit cynical, or at least frustrated. Don't get me wrong; I wouldn't change the process. Not at all. I'd just like to see the press have a more positive view.

I've always been interested in engineering, and I grew up in the Bay area, in California, at the time they were building the two big bridges. They had just built Boulder Dam, they were building the Bay Bridge and the Golden Gate Bridge, this was the mid-1930s. I was a kid in high school. And not a day went by that the paper didn't have some positive article about how great things were going. "Do you know that they have had to go 550 feet down under the water and sink those casings? Boy, what a great accomplishment." I used to use the bridges all the time for my public speaking class because I liked the subject and it was easy, I could get it out of the paper, I didn't have to work very hard. But it was positive. The country was accomplishing things,

and people took pride in having them accomplished.

Now it's the other way around. Have any of you read Art Buchwald's column this morning? You know, he's getting a little more serious. It's a great column, you ought to read it. He says, "I'm afraid the next war's going to be started by Anchorman! The anchorman has a meeting with the general from Argentina, and he says, "General, are you going to attack the British?" "No, we're thinking —" "But what if they do something to you, will you attack them?" "Well, we have to take all contingencies into account —" So it goes on, and the anchorman keeps asking questions, and forcing the answers, and answering the questions himself. Now he talks to Margaret Thatcher, and says, "Did you hear what they said? If he did that to you, would you nuke 'em?" And pretty soon, though everybody started out denying, and trying to reconcile the whole thing, by the time the anchorman got through they were fighting with each other. It's the tenor of the times.

**Student.** From your perspective in both industry and government, where do you think America stands in overall R&D as we move on into the 1980s?

**DeLauer.** We really have a lot of great technology. We really do. We're super. I think we've got some weaknesses in some of the management aspects of putting that technology into productivity, into the products that we really can compete with in the world market. I'm talking broadly, but our technology really is superb.

**Student.** A lot of R&D is funded by government, whether it's actually developed by private industry or by the government. Do you see any differences between government-funded and industry-funded R&D?

**DeLauer.** Absolutely. I think the government-funded R&D is much further-reaching. The best example is right down the street at MIT. It's quite a litany. Time-share, developed by MIT for DARPA, the Defense Advanced Research Projects Agency. Packet switching, developed by MIT, Stanford and UCLA for DARPA — that became the ARPANET for communications. The "fifth-generation computer" was developed by them — that's the name given to the next big push into the future of computers as applied to the world of the living in communications. DARPA has supported the fifth-generation work of MIT, Carnegie-Mellon, Stanford. Artificial intelligence — a whole bunch of developments in regard to parallel computers

— gallium arsenide laser technology — all those things were done by DARPA with these universities.

The Japanese have announced that they are going to exploit the fifth-generation concept, and before the decade is out they're going to control 40% of the world market in information systems and information products, including artificial intelligence and so forth. But I think we do a hell of a lot better for the money. As for other R&D, I'll leave pharmaceuticals out of it, and some of the other stuff that the government doesn't really develop. But industrial R&D is primarily a surplus of riches — "What the hell am I going to do with the next product?" And the best thing in the world is your Boston Consulting Group. Read Bruce Henderson's view of the world. It's a great little window. They extrapolate — old products in new markets, new products in old markets. Very seldom do you see a real new product come out of a big firm; mostly it's out of little outfits, that's why money is being generated into venture capitalism right now. There was a good article about how a tremendous amount of money is going into venture capitalism, I think it was in *Dun's Review*. That's where the inventions are coming from, not the big organizations. The dinosaurs are the oil companies.

**Oettinger.** Why then, in the light of that, the current wave of hysteria about export control?

**DeLauer.** That's a different thing. There's no question that we have lost a tremendous amount of technology out of the country through various means. It turns out that the biggest drain is just straight-out espionage, industrial espionage as well as other kinds — about 50 percent. Another 25 to 30 percent is lost through lax export controls. We let people export things to some truck plant so they can build civilian trucks; they're building tanks. Piston-making machinery, supposedly for automobiles, they're putting in armored cars.

And some of it is just stolen. You know the case of the guy at Hughes, where the Polish export guy got information on about five or six major advanced radar programs. It saves them time, saves them money. Now, the Japanese are as leaky as a sieve; they trade things away. The Soviets have more operatives in Tokyo than in any other single city.

As for the hysteria, it's just that the whole thing has finally been coming together, intelligence reports and everything else. As a matter of fact the CIA has just put out an unclassified document that lists all the technologies we've lost to the Soviets. You can get a copy, it's in print, I have one at home. You'd be surprised! And

the classified one's even worse. The Soviets have done a hell of a job, a perfect job. They put something like two thousand technologists into the program about twelve or fifteen years ago, and they're just in the program. That's their job: read documents, know where to get information, talk, know what companies are doing what to what. They subscribe to everything. And not only that, we've got the Freedom of Information Act, we've got to give it to them!

That's one of the real problems we have with people tending to overclassify. Under the Freedom of Information Act, for instance, suppose I want to show you a picture of the new Russian big bomber. Now you know, everybody's seen that picture; it was shown in *Aviation Week*. But if the government reveals it by me showing it to you, anybody can now say, "Under the Freedom of Information Act, you've got to give me a copy." That's part of the problem. If we could change the Freedom of Information Act to have some constraint on what we have to release, we could help the situation out. The only answer at present is to classify it; then it stays out of the Freedom of Information Act. And that in itself is a problem. It's really not so much hysteria, it's a fact.

Now, I don't go to the extremes that some of the guys in the Pentagon do. We've got some hard-liners. If I'm a hawk, some of our guys are super king hawks. There's no question about their views, they let our allies know it: I don't care who they are, the French, the Germans, anyone, they're not going to get anything if the super hawks get their way.

There are some interesting cases — you know, we picked up a Soviet sonar buoy, brought it back, opened it up, and it was our design, a US design, and not only that — we took out the circuit board and put in one of ours and it played like a million bucks. They just copied it, they didn't even change the design. In another instance the Swedes had gotten some traffic control technology and sold it to the Soviets. When there was an upgrade, they just took the latest technology upgrade, put it in some guy's suitcase, and walked — took it to Moscow and played it. It turns out that the Swedes do not have any control whatsoever on non-military or government-controlled items. There's no customs, you don't have to have an export license, you don't have to have anything. All you have to do is have the product and the customer, and you can walk anyplace in the world.

The Swedes wanted the license for the GE 404 engine, which is the engine in the F-18. They wanted to export it, and boy, we had a hell of a time until finally

the Swedes agreed that that's a dual-use technology because you can also use it in civilian aircraft. As a dual-use technology the government will control it. Well, that was an eight-month negotiation. The French have been weak, too, and we have to tighten that up.

**Student.** Apart from espionage, how do you suggest we solve the problem of Japan or somebody copying something that we have developed and developing it?

**DeLauer.** We think we ought to be very, very careful. I wouldn't let the Japanese co-produce a damn thing I own. Now, I'm a hardliner against the Japanese. I was in business with them for twenty years and never lost a cent, but I never made a nickel. I was investing a half million dollars a year for environment control technology, scrubbers to take SO<sub>2</sub> out of flue gas and the low NO<sub>x</sub> burner we developed as a consequence of the LEM engine, the descent engine on the lunar module. Though we had done some development work to make that, there was not much of a market in this country. The Japanese licensed it in their own joint company and put a lot of money in it, and they would never tell us what improvements they made. For them sharing technology with us is a one-way street.

**Student.** So you're basically saying that we shouldn't have joint ventures with other countries?

**DeLauer.** Not with the Japanese at any rate. Now, I don't think there's a problem with the Italians. They've been supportive; they're not going to eat up the world market on us. They've got as many problems as we do in the way our companies work.

As a matter of fact the same issue of *Dun's Review* last week had an article, "What's Wrong with American Management?" They reported on a seminar kind of like this, with a whole bunch of CEOs criticizing. It was not unanimous, but the gist of it was that most American managers are professional managers, they're out to make it in ten years. The management of a company in Wall Street will have quarterly and six-month reports, and every quarter's got to be better than the last quarter, and every year's got to be better than the last year.

Of course, nothing's that consistent. Things are bound to be cyclical. So what happens when you get in the down cycle? You dry up R&D, you do all the things that are decisionable for you, you avoid capital investment. The problem with the automobile business, for instance, is that they had all that invested capital. They

weren't about to raise hell with their earnings for a decade in order to re-capitalize their plants. That and the labor. They just passed it all on to the customer.

Another thing: American corporations are financed pretty much either by the equity market or by bonds, which are a form of equity. You've got to have a bond rating to pay the lowest interest. Who rates you? Moody's in most cases. What does Moody use as a standard for your rating? Your debt equity ratio. So a blue-chip American company's ratio can be, at most, 15 percent. Other parts of the stock can cut into that, especially if you have mutual funds, or retirement fund earnings that you paid out in dividends, not just necessarily stock appreciation for earning. If you pay 40 percent of your earnings in dividends, there's not a hell of a lot left over for investment. Well, we've been doing that for fifteen years, and it's come home to roost.

The Japanese don't do that. They leverage themselves to 90 percent. Most of their money is raised by banks and thrift organizations, not by people buying it, picking and paying it, and looking to see how TRW's doing tomorrow. Even the banks do it. As a matter of fact, the biggest source of funding in Japan is their postal savings. Their population saves, the government runs the postal savings and pays a low rate of interest and puts it out to the industry, and they're able to get financing and long-term projects that are good for the country. They also close their markets to competition until they control them. They don't let somebody come in and compete with them in the domestic market while they're trying to develop a product. They use their domestic market as a basis for paying for it until they're really economically viable to compete in the world market, and then they bar the door. They're just operating in a different economic structure, and it's tough to compete.

**Visitor.** Criticisms have been leveled at the style of new weapons systems, which are terribly fascinating, exciting, but are said to be very difficult at times to maintain in the field. Perhaps the helicopter you were talking about might serve to illustrate the point. The helicopter that jumps up, takes a peek and comes down is very expensive and hard to maintain. Meanwhile apparently tech specialists are leaving the force much more rapidly than enlisted soldiers and officers. Consequently systems in the field, particularly complex ones like weapons and support systems, turn out to be very difficult to use, at least as intended at the time they're acquired. Is that just an argument, or is it true? And is it an issue in your own office?

**DeLauer.** There's got to be some truth in it, because the story persists. It tends to be a legend, too, though. We just encountered it the other day — criticism that we're making the F-16 too complicated, it was built as a simple airplane, and that sort of thing. That came out of Russ Murray's PA&E group under Harold Brown. A high-low cost mix: buy expensive things here, less expensive things there — it turns out that, in most cases, that's not true.

Let's take the F-16 as an example. They're getting more flight hours over maintenance hours than they ever did in the past. And they're more complicated machines on top of that. Look at the history of the F-100, the old North American airplane, before we bought a lot of jet engines. It had like one hour maintenance per one hour of flight time. That was standard! You have to look at the nature of the beast, what you expect it to do.

The problem I've confirmed, and am trying to change, is the producibility. We put our systems into production without really paying attention to producing them. Now part of that has to do with the last seven or eight years, when we had enough money to keep the program going but never had enough money to do it right. Now, the first airplane that is really built with the concept of producibility in mind — which means very high capability, because you work it out, and produce every one the same, and you don't have a lot of junk — is the F-18. A guy named Willoughby in the Navy has made it a crusade; he's the messiah of producibility, and he just worked his tail off on the F-18. The F-18 is going to be a great airplane for that. Few people are needed to maintain it, it has a long mean time between repairs, and the repair concept, how you put it in and out — the whole thing is going to be great. But you and I aren't going to be around to see it; the proof of it is going to be ten years from now, when they're in force in the field.

I think the best example of a complicated piece of equipment — and what a great piece of machinery it is — is the Boeing 747. Boy, that's been a reliable rascal. The engine is the same engine we've got on some of the other military airplanes — it has the same kind of flight control system.

**Visitor.** To what extent is there consensus about these matters within your office?

**DeLauer.** There's no consensus. Every system is different. Now, the problem with SOTAS had nothing to do with the helicopter. It was the sensing system, the

radar, that was the Achilles heel; the helicopter worked pretty well. The MTI radar had to be able to recognize a moving target, provide enough information to be able to locate it, and handle all the data processing. It had to recognize the target for what it is — a tank, a truck, or whatever — because they each have different munitions. Then it had to provide the data — that's the part that folded up in the SOTAS tests, not the helicopter. Now, there are certain things that aren't run up in the costs, but part of the runup has been that they're underestimated to start with. But I think the issue of complexity is overstated.

**Visitor.** A guy named Jim Fallows wrote a book —

**DeLauer.** Oh, absolutely! Jim Fallows is part of Russ Murray's crowd. Murray ran the PA&E, he was the assistant secretary to Harold Brown for program analysis and evaluation; and that was Harold Brown's thing. Murray was on a kick on the "high-low mix" — he'd buy cheap aircraft for a day attack, so we got the F-16 — it's a day attacker. But there are hardly any "days" in western Europe; even when the sun is up, it's cloudy! And the clouds are low; you can't use this plane in western Europe. Now, the F-16's a great airplane, they turn them out great, and the learning curve's coming down and everything else. But it can't do any other job but clear-weather attack.

Now, what are you going to do about that? We want to put a couple of pods on it, one with a radar, the other with a laser, to use it as an attack airplane in all weather and at night. And that's written up as, "You see, you're complicating the high/low mix." The high part of the mix was the F-15, and that's been going on pretty well — it's very expensive. The F-14 is also at the high end of the mix. The F-18, which was supposed to be the low end of the mix, was shoved down the Navy's throat by Jim Fallows, Russ Murray and Harold Brown. Now the Navy's embraced it.

**Visitor.** What I'm trying to get at is that that is a very different philosophy that says: buy lots of simple systems. Spend your budget on numbers and on the easy-to-maintain things. Now, I understand you to say that you don't believe that that strategy is working all that well.

**DeLauer.** You're going to have to have some limit on your capabilities if you're going to buy them cheap. But you also said "easy to maintain." Those two things don't necessarily go together. You can have an

easily maintained thing that's expensive and has high performance — that's what we're showing we can do. The lower end of the mix is less expensive than those classes; F-16s are less expensive than F-15s, and you can buy an F-5 even cheaper — but it doesn't have much performance.

**Oettinger.** Eighteen billion dollars recommended for strategic C<sup>3</sup> but not yet appropriated. A volatile Congress. The problems among the services epitomized in their different management structures. Proposed changes in the role of the chairman of the joint chiefs. Tell me, what's this going to mean for R&D?

**DeLauer.** They went over the budget just yesterday. They're going to have centralized management of strategic C<sup>3</sup>, and right now it looks as if the recommendations, even though we haven't made them and the secretary hasn't approved them, will go through. Dave Jones and I have agreed that the strategic C<sup>3</sup> acquisition function will probably be run by a three-star general or admiral who will also have a dual hat as the C<sup>3</sup> guy on the JCS. That's Dickinson's job, and if Dickinson were to retire, I'd say, okay, have a deputy director who is an acquisition-oriented manager and then have the systems analysis program contract and allocate all the money.

Now, who will do the acquisition will depend on what the program is. If it has to do with certain terrestrial things, you give it to DCA. If the system includes satellites, you get the space organization to go buy the satellites. If it has to do with some kind of tactical communication, you go to the Army, or the Navy, or the Air Force, and parcel it out for detailed acquisition. Next time the deputy secretary of defense and the chairman of the joint chiefs will run it; I'll be in there and the policy undersecretary will be in there. The four of us will be an executive committee reporting to the secretary, and we'll try to apply C<sup>3</sup> principles.

**Oettinger.** And the money is appropriated to whom?

**DeLauer.** The money is appropriated to the Defense Department, but it's controlled by this executive committee.

**Oettinger.** And it does not flow into the services?

**DeLauer.** Only as allocated through this process. We will control, not so much a flow, but the allocation of the money in the executive committee, managed by the

director. That's what we intend to do. We're already doing it to a degree in the WWMCCS upgrade. A WWMCCS upgrade program guy reports to me and to the JCS, an Air Force two-star general whose job is to upgrade the WWMCCS computers, the manuals, and things like that. A very important job.

**Student.** You say this new structure is proposed. In which fiscal year would you foresee it actually starting up?

**DeLauer.** Starting right now. We've got 1982 money started. In October we've got to start spending the 1982 money, it's taken us a little time to get with it. But things are going on; they're not dead in the water. Other elements of the program are being acquired, and we're going to put this in place.

**Oettinger.** Not to get too negative, but let's say the political worst happens in 1984 and that even earlier, say in 1983, there's, not a change in the administration but a change in the chairmanship or the membership of the joint chiefs, or in the secretary of defense. In the absence of a statutory structure, is the kind of arrangement you've described likely to outlast whatever goodwill or negotiation has been achieved among current incumbents?

**DeLauer.** Beats me. It depends on how long the group's in there and how effective it is. I think there are things the secretary could do. I had my own suggestions. One of the real big problems is that for the chiefs of staff, that's usually their last assignment. You know, they leave. Once in a while one of them will get to be a CINC of a theater command. Bernie Rogers is one — he received a staff assignment and then moved over to SHAPE. And those are the guys on the long end of the rope, because they're the ones who are supposed to fight the war. It's significant that, although, say, as CINCPAC Bob Long runs the whole Pacific area, when you come right down to it you find out he's got only a couple of wings of aircraft and a few ships. All the rest of them are under the command of Pacific Fleet. For instance, everything Admiral Harry Train has runs right through the CNO, because they're all ships. Bernie Rogers has a little bit more; he's got some Army divisions he can handle and some Air Force things. I try to be kind of a gadfly, and I would suggest that you don't make chief of staff the officer's last assignment before he retires. If they know they're going to be CINCs, and have to provide the forces that these

guys have to operate with, they might have a different way of looking at the world. There's no reason in the world why you couldn't take an Air Force guy and send him down to be CINC of USAFE or SAC.

**Oettinger.** That's sort of a nice idea, isn't it? It's a regular industrial idea. You take a guy who has a staff assignment and make him set up the thing he's going to have to live with.

**DeLauer.** That's right. There's no reason in the world why the SAC commander even has to be an Air Force commander at all. You'd have to have the airplanes, and everything that's an Air Force function, run by an Air Force guy; but you might change SAC around. The commander-in-chief of SAC could have a deputy who handles all the aircraft, and a deputy who handles all the submarines, and he's the point man — there's no reason why he couldn't be a Navy guy or an Army guy. That way he might have a different view when he starts allocating resources. I mentioned that to Jones yesterday, and he said, "No, not yet." He thinks that's too extreme. But he thinks the other one about picking the chiefs of staff out of the CINCs is possible, and that's what he's recommending.

**McLaughlin.** Along those lines, will your new executive committee also attempt to fence money, or look at the requirements of all the CINCs?

**DeLauer.** We've done that, but it's almost tokenism. If you think ERA or affirmative action is tokenism in some places, boy, the poor CINCs are really a minority group. This was the first time that we had the CINCs show up twice before the DRB. They participated, they presented their problems, their number one priorities, and each of them stated what he thought was the most important thing that he had to have in his organization. That permitted us to help resolve some of the issues. Then we set aside money for each of them. The amount was small — 15 to 20 million dollars apiece, but they can go spend it any way they want. If they want to upgrade their command and control center in a particular way, and hire contractual support to do it, go to it!

But it's like pulling teeth. The number one requirement for EUCOM is a better command and control center in Europe. They plan a little adjunct to the one Bernie Rogers has for SHAPE, and then the European command has a program to put a backup command and control center at High Wickham, England. Thirty million dollars is all they need. Well, out of our 185-

billion-dollar budget we couldn't find 30 million dollars in two years for these poor guys. Nobody can find it. Even my people couldn't find five million dollars to do the architectural engineering study. But we got it finally. Frank Carlucci said, "Give those guys the money," and they got it. They all ponied up somehow or other and got the money put together. But that's how you've got to go through this.

**Student.** You didn't answer my question about the CINC for C<sup>3</sup>I. I have a technical question, though. One of last year's speakers cited the potential of very high speed integrated circuits for the C<sup>3</sup>I community. What's their status now?

**DeLauer.** It's right on track. We're just starting to get to the people who are really proponents of it; some congressional people weren't. We got more money added to this authorization process for VHSIC. I lost the program manager; he went off into an industry association, EIA, I think, to set up a special kind of integrated research organization. The work is coming along fairly well. Applications are dragging a bit, but everybody's enthusiastic about it.

**Student.** What kind of potential performance does it have?

**DeLauer.** Oh, fantastic. If you get down to the sub-micron level, either with silicon or with gallium arsenide, you're going to achieve switching speeds, low power, a great capability to do the things you want to do — signal processing, synthetic aperture radar at low power, sonar, secure voice. You see, the algorithm and all that is hash before you can transform it. What you need is rapid handling of that data, you need so much of it. But MIT's Lincoln Labs is doing some great work. The real problem is how to put it all together, to tie the chips to the architecture and what you want them to do together. That's what the guys at MIT are working at. I'm very enthusiastic about VHSIC.

**Student.** In reference to technology leaks and loss of knowhow, what are the chances of the NATO nations getting together to develop an effective C<sup>3</sup> system, and in particular setting up some sort of joint production venture in that field?

**DeLauer.** Well, they're trying. We let them into the architecture group for ACCS, the new Air Control C<sup>3</sup> System. That's going to be a joint US and European group.

**Student.** I understand that the situation is very good as far as Tac Air is concerned, and also naval systems; but ground systems seem to be in a mess. About six different systems are either planned or being fielded currently.

**DeLauer.** Yes, we still have some problems there. But actually the biggest problem we've got is IFF. The British are hung up on the S-band and don't want to jump off it, and we are hung up on L-band and won't jump off it, and it's like two bulldogs staring at each other. And the FAA is sitting there trying to monkey around with their frequency.

But the chances of getting C<sup>3</sup> systems set up are a hell of a lot better than almost any weapon system, absolutely. First, they've got to interoperate, so they're more usable. Almost all the European C<sup>3</sup> systems will be tied into the PTTs, and now that the Germans have gone digital the PTTs are all tied together pretty well in Europe. You can dial from one place to the other now without any problem at all. The UKADGE is being worked on, so the British air defense situation will be fine. I think C<sup>3</sup> does have a better chance.

**Oettinger.** Can I divert you on a small point? What does the NATO term "rationalization" mean to you, if anything?

**DeLauer.** Nothing. It's an excuse. Interoperability, though, has some substance. In the first place, you'd like to be able to put gasoline in each other's trucks; let's start with that simple form of interoperability. But you couldn't, you know; the hoses would all be bent at incompatible angles, or something.

**Oettinger.** Can I take you back to your comments about the relationship with congress, and the change since the reorganization? As I listened to your examples I was puzzled as to what you felt the change really was. It couldn't be just cussedness. In the old days when Congressman Rooney was in there for years, the State Department writhed year after year because he was so impossible. It's hard to think of an example of an armed services or appropriations guy doing the same kind of number on the Defense Department today, so maybe that kind of stability would help.

**DeLauer.** Well, one guy does. Jack Brooks. Last year we rolled him over on the embedded computers, and he just beat me to death, accusing the Defense Science Board of being biased, and it ought to be put in jail and he was chopping things out... he's still quoting the

failures of NORAD two years after they happened and he'll do anything to get changes in the line items. Here's a congressional committee putting 50 million dollars into a program we don't want, and cancelling two other programs that are coherent with a third program they left in.

**Oettinger.** Is that a consequence of some staff guy doing his homework?

**DeLauer.** Well, sure!

**Oettinger.** Would an old-fashioned Vinson sort of long-lived congressman make a difference?

**DeLauer.** That's hard to say.

**Oettinger.** So porkbarrel you can live with, but —

**DeLauer.** I can hardly live with that, but I accept it; what else can I do?

**Oettinger.** Technical second-guessing is the irritant, then?

**DeLauer.** Program second-guessing on some technical issues; there's some of that.

**Oettinger.** Can I push you some more on this? I'm still puzzled. If you had said, "The problem is that the staff goes one way and then it disintegrates in committee because the Congressmen are pulling another way," I could see that. A strong chairman with longevity would handle that. But that's not the direction you went in — it was more that these guys interfered. Is that really a question of the staff? Or is it a sign of the times?

**DeLauer.** One of the biggest growth industries in Washington is the congressional staffs. They have grown more in the last decade than any other segment of the labor market. We get all those bright guys, and what are they going to do? We just got the cuts from the Senate and the House on both R&D and production. They cut the Army R&D 18 percent, saying, "We want to save money." Cut your R&D budget 18 percent — that's three pages of programs!

**Oettinger.** Okay, by going after line items, you're saying, they're messing around with executive functions rather than just appropriating funds?

**DeLauer.** Yes. I'm trying to get them to change. One real focal point in the House Armed Services Committee is Tony Battista. He's an ex-NRL guy and he loves technology, and he's mad as hell when the Navy won't buy this or that. He recently got mad at me because I've gone ahead with the IR Maverick. He keeps arguing with me on a technical level. And I've been trying to get him to be a systems engineer. I say, "You spend all your time monkeying around with line items when you ought to be yelling at us when we're not doing our job on the concepts. You're the one place where Congress really can come in and tell us how we're going to integrate the Army, the Navy, and the Air Force to go fight the war in the north Atlantic. Instead of that, you're sitting there saying, 'Don't have this weapons system and don't buy that product,'" and that's counterproductive. The Senate side's not quite that bad, but almost. There's just no question, for example, that certain senate staffers had definite preferences on MX basing.

**Student.** How much impact have the military reformers had as members of Congress?

**DeLauer.** Not much yet, but I worry about it. My own view is that they're oversimplistic. They have picked up the line about "simple is better." Are small carriers better than big carriers? Who knows; I could give you arguments both ways. But their idea is to get rid of strategic arms and just worry about conventional. Yet they'll never put enough money in conventional arms to match the Soviet numbers, so unless we get better leverage with technology, we're going to be in tough shape. But you know, they're not unimportant. There are a lot of influential guys among them; Gary Hart's a very influential senator.

**Oettinger.** One more question, then Colonel Douglass wants some of your time. We've got to cut it off.

**DeLauer.** What's the matter, you got a call back?

**Aide.** Just need to tell you what's happening on the MX.

**Student.** Now that you're in the public sector, how are you liking it? Would you recommend it to somebody else? And how does it compare with industry? As people move onto those congressional committees, how would you move forward and maybe make some changes? And what would you like to recommend to your successors to do for the future?

**DeLauer.** Well, to a certain degree, when you come into my job, one of the best things you could do is have it be your terminal assignment. No, I mean it. When I leave home in the morning Annie says, "You know, you're not running for reelection," which is a sobering thought. You know, you can say it like you mean it. As long as you're doing your job and everything else, fine; but if you're not, you're not hanging onto it, because you expect to use it as a stepping stone to some other kind of career. I don't recommend that for all jobs, but for this one it isn't too bad.

**Student.** But the people you're dealing with are running for reelection.

**DeLauer.** No question about it. Not only that, some of them are running for president 15 or 20 years from now. John Lehman is, I think. He's the youngest-ever Secretary of the Navy, and he's going to beat Teddy Roosevelt, he's that ambitious, that hardworking. He's on the road all the time, he gives speeches, he's a very dedicated guy. On the other hand I think Vern Orr and I are about the same — the Secretary of the Air Force; I think he's about on his terminal assignment. I don't know about Caspar Weinberger — he and I are the same age — I don't know what his ambitions are. At 63, you know, there isn't a hell of a lot left, notwithstanding the president being what his age is. There's not a long way to go from there. But you must believe I'm not depressed!

Sometimes I wonder, you know, why the hell am I working this hard at this stage of my life. I volunteered, so I can't complain about that. I have slight irritations. It's bad to come from a senior position in industry where the perks go with the job; you've had them a very long time and now all of a sudden you go back to being a second-class citizen. You're riding in the back of the bus; you travel on second class fares, things like that. That's a difference, and it bugs me. So I said the hell with it, and the first trip I took to Europe it cost me five thousand bucks to take Annie and me over, because I traveled the same way I did when I was executive vice president of TRW, and it turned out to be very expensive.

Let me tell you that the people in the Pentagon are not bureaucrats. They work their fannies off and put in long hours, and they're dedicated to doing the job right — not everybody, but a sufficient number of them so that, as a taxpayer, you're getting your money's worth out of what they pay them.

**Student.** Are you telling that to your friends in private enterprise?

**DeLauer.** They know it. The people in the defense business know most of this. The ones who have been a disappointment to me are the ones who haven't had exposure to defense before.

Let me give you an example. You know, we have had terrible criticism from the US Chamber of Commerce that the defense budget ought to be cut. Kendall went over to the White House — he's the Pepsi-Cola guy who sells everything to the Russians — and said defense had to be cut. The new chairman of the Chamber of Commerce, though, is Paul Thayer, who ought to know the drill better. Thayer is an old test pilot, now running LTV and, you know, he's in this business. And so Frank Carlucci had him in and said, "What are you going to do?" Thayer said, "We'll try to get the Chamber people to understand what you're trying to do."

So they had the staff of *Nation's Business* over — a big magazine, 400,000 a month circulation, put out by the Chamber of Commerce. They didn't have the least understanding of what the Defense Department did. Their whole life has been Chamber of Commerce life, which is getting a lot of members. Who are most of the members of the Chamber of Commerce? Small business people. These guys were going to write a big article, "What are you doing for small business?" Well, you know, that's important, but it's only 7 percent of our effort. They just missed the point.

So people outside the industry have a lot to understand about what it takes to run the place. I think we're making some efforts to acquaint organized labor, but we had Douglas Fraser in for dinner and I'm telling you, his view of the Russian capability is 180 degrees away from the facts of life. Of course that hasn't been his bag; but he's Douglas Fraser and he's positive of the world: "The Soviets have no designs whatsoever on this country, exclamation point." They're not a threat. The real threat is what we're doing to labor, and the depression, and the loss of jobs; and that's his world. So I've had worse jobs, and I've had better jobs.

**Student.** You mentioned industrial espionage. Having been in both private industry and government, do you have any insight into how to prevent it?

**DeLauer.** Pay attention. Pay attention. You've got to be careful. In the case of Boyce, who was just a crook,

TRW did try to do something to prevent it. You don't hire somebody without a background in a responsible job like that; we hired that guy on the basis of his genes and antecedents. His father was the chief of security for McDonnell-Douglas in Long Beach; his uncle was an FBI agent; he was the oldest of seven or nine kids, he came from a strong Roman Catholic family.

**Oettinger.** Of course that's the way the Burgess-McLean crowd went down the drain. They all got in because of family connections.

**DeLauer.** Now Lee, the other guy, was just a phony. He was on drugs, selling drugs and everything else. That's how he got busted. He was picked up in Mexico City on a drug charge and when they searched him they found a film clip. But that's a different thing than losing it by trade, on which we have lost a lot.

**Student.** Do you think more frequent security checks would help?

**DeLauer.** You mean better background investigations? Yes. You're going to lose some. This guy Hughes was amazing; he was just completely out of character. But when you look at what really happened, he got in a position where he was economically susceptible. I think the economic incentives came first and then the ideology. Ideology you can pretty much clear up by background investigation of previous activities,

but I don't know what the heck you can do about people who get into a bind economically and then look at espionage as a way out. It's very unprofitable — it's a long time in jail! The little stuff is always going on. In Germany, at a Honeywell subsidiary, a guy just walked off with drawings of the laser gyro. You know they're going to be walked eastward. In that case, one solution is not to let them have laser gyro technology in Honeywell Germany.

**Student.** How do you protect things like that when you've got joint production planned with the British?

**DeLauer.** The British have got to help protect it. The ministers of defense have got to make it their job to protect it. We're getting much better cooperation out of the French. Still — the French are pretty bleak. Thompson CSF withdrew a digital switch export they were going to give the Soviets; all of a sudden they found they were really in big trouble, so they brought the thing back. Germany's going to have about 20 percent of its energy from the Soviets in 10 years — they've got the spigot. But it's partly our own fault; we didn't give them any alternatives. We didn't offer the Germans any energy they're short of. France had already made up its mind to go nuclear, and they've got more nuclear plants than you can shake a stick at. Protection is largely a matter of self-interest; you have to get cooperation you can depend on.