PROCEEDINGS
OF A SYMPOSIUM ON

ANALYSIS FOR WEAPONS DECISIONS
IN RELATION TO
NATO STANDARDIZATION, BUDGETING, AND MANAGEMENT

SPONSORED BY THE

PROCUREMENT AND SYSTEMS ACQUISITION DIVISION
441 G STREET, N.W., WASHINGTON, DC 20548

ON
JULY 14, 1978
AT THE

NATIONAL DEFENSE UNIVERSITY
FORT LESLIE J. MCNAIR
4TH & P. STS., S.W.
WASHINGTON, DC 20319

Elmer B. Staats
Comptroller General of the United States

Lieutenant General Robert G. Gard, Jr., USA
President, National Defense University

Jerome H. Stolarow
Director, Procurement and Systems Acquisition Division

Hyman S. Baras
Assistant Director, Major Acquisitions Subdivision
Moderator- Session 1

Dr. John G. Barmby
Assistant Director, Systems Analysis
Moderator - Session 2

Hugh R. Strain
Program Chairman

Program Coordinators

Elias M. Kallis

Frederick Resnick

Administrative Staff

Mrs. Thama Moreland

Miss J. Lynn Koren

Mrs. Ann Wylie

Mrs. Brenda Marsten

Ms. Jacqueline Wilson

Mrs. Lynell Rawlings

TABLE OF CONTENTS

WELCOME AND OPENING REMARKS BY

MR. JEROME H. STOLAROW, DIRECTOR
PROCUREMENT AND SYSTEMS ACQUISITION DIVISION
U.S. GENERAL ACCOUNTING OFFICE

Good evening, ladies and gentlemen. I'm Jerry Stolarow of the General Accounting Office. On behalf of Mr. Staats, the Comptroller General, who joined us this morning, and our host, Lieutenant General Gard, President of the National Defense University, I'd like to welcome you to this symposium on NATO standardization.

Let me first call your attention to the administrative notes on page 6 of the program. Several things. Please, for security reasons, they ask that you wear your name tags while you're in the building. Secondly, please do not bring any food or drinks above the first floor. And third, we will have a message board downstairs where you registered. If you're expecting any messages, please check the board.

By way of introduction, I'd like to say a few words about why GAO is sponsoring this meeting today. As you all know, there has been an almost continuous dialogue during the past 20 years about the relative capabilities of NATO and the Warsaw Pact forces. The recurring theme has been to upgrade NATO force capabilities, within the constraints of the political and economic problems faced by the NATO forces, and the probably false sense of security generated by over 30 years of peace.

As with any complex and multi-faceted problem, there's been a great deal of controversy. Not over the goal of improved combat effectiveness, but how to get there in the shortest time and at a reasonable cost. There is almost universal agreement among military and political leaders that the problems have not yet been resolved.

During the past several years, three words have been used with increasing frequency. Rationalization, standardization, and interoperability. And I'm sure there will be a great deal of discussion today on what those words mean to different people, and what our speakers believe can be accomplished by moving ahead in each of those areas.

GAO has been putting a great deal of emphasis into NATO related subjects. Our interest stems from the need to evaluate the effectiveness of procurement programs; requirements supporting major weapons systems; and most importantly, combat readiness as the end result. We think meetings like this are important to surface new ideas and to keep the discussion and debate active as we attempt to reach solutions.

We think we have two excellent panels--one this morning and one this afternoon--that will hopefully keep you interested and present some provocative and interesting ideas for you. Our keynote speaker today is eminently qualified to set the tones for this meeting.

General Joseph Heiser, Jr. as you can see from his biographical sketch in your program, is currently a consultant to the Secretary General of NATO, and to the Secretary of Defense. He has also served as consultant to the Supreme Allied Commander of Europe, General Haig,

and not surprisingly the General Accounting Office and the Comptroller General.

He recently conducted the Allied Command Europe readiness review, and prepared reports for General Haig. He is now completing work as Director of the NATO Logistics Task Force. The results of that study have been accepted by the heads of government and have been included in the long term NATO defense program.

At the time of his retirement from the Army in 1972, he had reached a top supply position in the Army, Deputy Chief of Staff for Logistics. To me, though, he really demonstrated his management ability and his versatility while he was Commander General of the First Logistics Command of Vietnam.

He managed to keep the Army going while, at the same time, dealing with a fairly large contingency of GAO auditors, including yours truly, who insisted on telling him what was wrong with the Army supply system and what to do about it.

With the Viet Cong on one side and GAO on the other, he managed to keep the Army forces supplied. After that, even the NATO logistics problems must be simple. General Heiser, glad to have you with us.

KEYNOTE ADDRESS

LT. GENERAL JOSEPH M. HEISER, JR.
USA (RET)
CONSULTANT TO THE SECRETARY GENERAL
OF NATO AND THE SECRETARY OF DEFENSE

Ladies and gentlemen, Jerry has aptly described some of the background. I want to say first of all that it's a privilege to be here. I have had the unique opportunity of having experience in the Army, and since retirement I have had a unique privilege of working with the Office of the Secretary of Defense, with the Comptroller General of GAO, and then the particularly unique experience of working with General Haig and the Secretary General of NATO in their responsibilities pertaining to alliance logistics. (I would like to be sure you understand today whatever I say is talking logistics.)

Some of us can recall Admiral King in World War II saying "General Marshall is always talking about logistics. I don't know what it is, but I want plenty of it."

Well, I'll tell you to begin with--I don't know what it is either. I'll tell you also that I doubt that anyone in this audience really knows what it is. And I'll tell you also that NATO does not know what it is. And the definition of what it is is one of the challenges today. What it is and how we go about accomplishing it!

In talking with experts--and I don't pretend to be an expert in anything--but in talking with experts, including people who were our enemy in World War II, those that know, agree fully that it was not

manpower that won World War II, and I say this not to depreciate the value of the American fighting man. But the fact of the matter is, the American fighting man was able to overcome the enemy, a very competent enemy, because of the fact he had logistic capability that the enemy no longer could sustain. And ladies and gentlemen that is likely to be the very thing, again, that deters us from a World War III, or allows it to happen with the resulting effects on you, me, our country, and the free world.

I will be talking seriously in the next few minutes, but I have a story that might be worthwhile for you all to think about as we go through this symposium. It has to do with something that most of the people around Washington and the areas outside of the south may not recall. But we still have a few outhouses down south. Some people call them "two holers" or "three holers", and if you get a "four holer", you know, you're really pretty much "high on the hog". This story concerns a two holer. It has to do with these two farmers who were in there doing their thing and one of them finishes and he stands up and he starts to pull his overalls up, and as he does so, the change in his pocket falls out and goes down the hole. And the other fella says, "Gee, I'm sorry you lost your change." The other fella said, "That's all right", and he reached in his other pocket and took a roll of bills out and threw it down the hole. And the other farmer said, "Gee man, are you crazy," and the farmer that had the problem looked at him and said, "Crazy! You don't think I'm crazy enough to go down there for a hand full of change, do you?"

Now, that's a humorous story. But I ask you to figure out how it applies to what we're doing today.

Now, first of all I want to commend the fine people, including Mr. Strain, Mr. Stolarow, and of course, Mr. Staats, who is personally responsible for me messing up the works here the first thing this morning.

This is a fine book (Symposium Program). I mention this only because it is a synopsis of why we're here. But it goes further than that. It has some fine papers covering presentations later today.

I think the main thing I can hope to do with you, because I don't know the answers either, is to give you some pertinent references. And, thank goodness, as you already know from observing the agenda, we've got some most competent people who do know what the problems are and who have been working on the answers. And so really I'm sort of introducing the subject, and I will have some references.

I don't want Mr. Staats to get the idea that I didn't work on a speech. I did. I have here an outline of a speech, it's all typed up nice and everthing; then I got to worrying with it last night and early this morning, and I rewrote it, and then it was too long and then I rewrote it this way (small card): then I decided that Jerry Stolarow was probably going to use up a lot of time anyhow, and so I rewrote it in the taxi on the way over here (match pads): it says "tell them what you're going to tell them, tell them and get on with it!"

Now, I have much to back me up, and you can see that I do have about 25 minutes worth of material, and I will attempt to go through with it.

First of all, here is what is called a NATO handbook. Ladies and gentlemen, one of our biggest problems in figuring out standardization and interoperability is that we don't know NATO. We don't even know what the symbols and the acronyms and the abbreviations stand for. We don't know the organization.

Now you say, "well I do." If you do, you're at the top of the class, and when you go up the ladder, St. Peter is going to say, "walk on in." How many of us really know? I would suggest that this is one of the first good references. And in here--in here, I'll get there, don't worry,--in here, there's a copy of the treaty, and in Article 3 of the treaty it says, (and this has been in effect since April 1949) it says, "in order to more effectively achieve the objectives of this treaty, the parties separately and jointly, by means of continuous and effective self help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack."

And there are other things, including a definition of all the abbreviations and acronyms. It's a valuable little book, and if you write to Brussels you may not even have to pay for it because they're interested in helping educate the free world as well as a possible enemy.

I have another reference. It's an article by Senator Bartlett, and it's entitled "Standardizing Military Excellence--The Key to NATO's Survival." In here he quotes Dr. Luns, the Secretary General of NATO, and he said, "the alliance's nightmare is lack of standardization." Other referencesyou all know from reading the handout that was prepared by the GAO. One is Public Law 94-361. Another is Public Law 93-344. There are DOD directives having to do with standardization and interoperability--5000.1, 5000.2.

May I recommend to your consideration, a report of the Secretary of Defense of January 1978, to the Congress, on rationalization and standardization. And in that report on page 129, appendix A, are definitions of terms. It talks about interoperability, it talks about rationalization, it talks about standardization, it talks about compatibility, interchangeability, and all these many words.

Let me just concentrate on one. You may not like this, but ladies and gentlemen, I'm up here as the director of a task force on consumer logistics that was part of the longterm defense program. Consumer logistics. Consumer logistics gets little or no consideration in the popularly held terms of standardization.

I can quote you many documents that talk about standardization, and almost all of them emphasize standardization of <u>future weapons systems</u>. And I tell you, ladies and gentlemen, that if we are to deter war in the next ten to twenty years, it's not going to be only with future weapons systems. It's going to be the bulk of the materiel that the soldier now has; most of that materiel is going to be with him for ten to twenty years.

And as a representative of the troops--I have to tell you that we've got American troops, and we've got other kinds of troops, allies. And to them , even though they may not recognize it, standardization and interoperability is only a cliche. It has little or no meaning pertaining to training and operating in the field. That's a serious challenge.

Because we have a potential enemy that knows what we're doing. We're an open society, we know where our concentration is, and they know that there is an incapability in the field today, in NATO, of carrying out standardization and interoperability, of the bulk of the operations and equipment in the hands of troops, and these troops include Air Force, Marines and Navy as well as Army.

Now we're talking unclassified here, and this is as close as I'm going to get to classified information. But ladies and gentlemen, we're in serious trouble.

I must tell you that with the privilege and the unique opportunity of looking at NATO in the last two and a half years, I've learned much more relating to NATO than I learned in the previous 30 some years--including even the time when I was Commanding General of the U.S. Army Communications Zone in Europe. The very geographical areas we are discussing.

Ladies and gentlemen, there may have been a time when we in U.S. Zones were self sufficient in Europe. We even had our own military ports. We supported ourselves all the way up to the front line in Germany—"teeth to tail." Economies, etc., have prevented

the self sufficient posture from continuing. There is no self sufficiency in the United States armed forces today, nor is there in any other armed force in NATO. "Host Nation Support" is the by-word used to replace military logistics.

Standardization at one time was almost a fact. Why? At the beginnings of the alliance almost everything the free world had was American produced. And so it was somewhat standard. It was standard to equate to what, today, the Warsaw Pact has.

Oh, sure, the Warsaw Pact has different kinds of equipment, but where it's necessary that they have standardization because it's efficient and effective--they have standardization. There is no committee; rather there is a dictate that says it will be standard.

But then let me get away from materiel for a minute. Let's recognize that the materiel itself has to have a body of logistics that will support it. And this can be standardized. And what does standardization of logistic support cost? It's not the billions that's involved in future weapons systems. It's not the kinds of things which get into the question, "Is a two way street good for America"? "Is it good for Europe"?' It's involved in standardizing procedures, forms,etc., that will be known across the troop level of NATO.

General Haig in the last couple of years has started something that wasn't done earlier. And by the way, I'm not a disciple of General Haig. He was a somewhat junior guy when I was somewhat senior.

But I will tell you very sincerely, it's the best thing in my opinion that's happened to NATO (and that's not talking down General Goodpaster or General Lemnitzer or anybody. I revere those gentlemen from personal knowledge).

But General Haig has done great things, in an unbiased opinion, I tell you. And one of the things he's done is to strengthen the northern flank on the continent of Europe. And among the things he's caused is, as you know, to put American troops up there. American troops that will even be far less self-sufficient than the central Europe American Army or Air Force can be.

On top of that, in exercises he's done what is considered to be now an absolute necessity. To mix up the troops. You know, way back to World War I, there was always the question of should the United States forces fight as an entity. And General Pershing and company were after this all the time.

Well, ladies and gentlemen, up until the last two or three years, it looked like the U.S. Army in Europe, U.S. Air Forces, might fight as an entity. The truth of the matter is, those days are gone. There are going to be brigades that are going to have to fight outside the American area, if there is such a thing as an American operating area. Mobility, flexible defense, all of these things are required; and our logistic posture has got to meet it.

One of the most essential things is that our allied troops--airmen, soldiers, marines, navy--they have to know something about one another's equipment. Something about one another's procedures. Even something about how to fill out a form so they can get ammunition if they run out.

And ladies and gentlemen, in this batch of materiel I've got here a document that says we have a great ability to interchange ammunition. The scientists indicate in artillery ammunition, mortar ammunition and anti-tank ammunition there is a great capability of interchangeability; yet the troops know nothing about it.

This is part of standardization. If the scientific community or an operations research system analyst come up with knowledgeable things, and if they're not distributed to the people who have got to use them, they're worthless to the U.S. and NATO effort of readiness.

What is the definition of standardization? It's the process by which member nations achieve the closest practicable cooperation among the forces; the most efficient use of research, development, and production resources; and agree adoption, on the broadest possible basis, of the use of common or compatible operational, administrative, and logistic procedures. This is the only way in which "Host Nation Support" can work effectively in time of crisis.

Who's working on it? If they're working on it who's doing anything about disseminating the values that we find? Who is laying down the alternatives of the actions necessary in order to effect this? I'm speaking strongly because, ladies and gentlemen, we're at base zero on standardization of logistics support.

Common or compatible technical procedures and criteria. We don't even know what the military characteristics of equipment are at the troop level--equipment that's in the hands of troops and has been there for a long time.

I was in the Northern Army Group headquarters a month or so ago, explaining what was in the task force report. And they had a great thing happen that afternoon. (There were no Americans in that command at the time. There will be because of the composition changing up there). There was a British major who had a brilliant idea.

He went to the countries of NATO and he said, "loan me a couple of vehicles. Vehicles with four wheels on them and trailers with two or four wheels on them; I would like to give a demontration to these top level people of the Northern Army Group, who are responsible for defending northern Europe, the continent of Northern Europe."

He assembled these out on a motor pool hard-stand. Ladies and gentlemen, it was amazing to find that this was the first time the forces of that allied command of the Northern Army Group had seen the fact that the allied components of the northern armies all have got tactical vehicles; they've all got round wheels, they've all got trailers. By the way, a British sergeant couldn't haul one of the trailers

over because he didn't have the prime mover from the country that he had the trailer.

He discovered that the prime mover from one country wouldn't latch on to the trailer of another country, and so he became an inventor and he figured out how to hook them up. Yet we all used four wheel trucks with round wheels, with the steering mechanism, with brakes, with some kind of an engine, with trailers, etc.

Ladies and gentlemen, that was a step forward. But look how basic, and yet that guy ought to get a medal because who else started doing it. Ladies and gentlemen, this is the thing we're in business for. There may be some doubting Thomases in this community, I hope not, in this audience today.

But may I commend to you a report of Congress, one of the best I've ever read, pertaining to a subject I happen to know a little bit about. It's a report by Senator Nunn, and this same Senator Bartlett, to the Committee on Armed Services, United States Senate, January 24, 1977.

In here--and it just has a couple of things I would like to cover with you--it says the importance of U.S. security interests in Europe cannot be exaggerated. We read in the press this morning, almost every morning, some question about the importance of all this. Which is perhaps the kind of thinking that leads us into isolationism.

"Together, NATO's European members possess the world's largest industrial plant, a population greater than that of the United States, or the Soviet Union, and an aggregate gross national product larger than the American GNP. And over double that of the U.S.S.R.

Western Europe's loss to any power or group of powers hostile to the United States is unacceptable."

Another extra. Unfortunately, NATO defenses today are not what they should be. And I tell you, as a logistician involved--not boastfully, but thank God I managed to live through it and had the privilege of trying to serve--in seven years of combat support in combat zones. I tell you as a logistician, this is a mild statement as far as logistic support is concerned.

I tell you that in 1968 the NATO strategy of a nuclear response was changed to a NATO strategy of a triad of flexible response meaning nuclear strategic, nuclear tactical and conventional. And ladies and gentlemen, we as a part of the alliance, the United States, we and all the rest of the alliance, failed in ten years to determine what was a change in military logistic requirements between the two strategies.

Think about it. And then think about our own personal contribution. Maybe we were part of what failed; and I was. But we can't stand it in the future. Here's another excerpt.

"For NATO, the issue is not one of simply increasing numbers of men, tanks, ships and aircraft. The principal task before the alliance is improving the firepower and making better use of the forces it already has." And ladies and gentlemen, that's the importance of this meeting.

You have the scientific and technical and professional capability of assisting in determining what is the real meaning of the alternatives that are being considered. They should have thrown me out for senility

in 1972-'73. I was of the school that was still operating by the seat of the pants. Operations research, system analysis--these are tools that we have got to use to come up with the right answer.

What is improving firepower? How much is it? Do we need this and do we need that? And then one even tougher. What is the real value of alternatives to gain a better use of the forces it already has? Just those two things that were inferred to you but not pointed to this community directly, just those two things make it imperative that a symposium such as this, sponsored by the GAO, is so absolutely essential and timely.

And may I say this. Some of you may have thought, as some of my friends have, why is a general working with Mr. Staats, Jerry Stolarow, et cetera; especially when they used to throw stones at me, and at times I'm sure they were mad enough to have me chastised if they had had the authority.

I will tell you this, I think we ought to think about this in our dealings with the General Accounting Office. The truth of the matter is, we're (GAO) as much or more readiness oriented than anybody I've met in the free world, as an organization. And the GAO have a tremendous advantage because they can objectively look at the facts, and they need operations research systems analysts to assist in gaining the true answers.

And then as such they can call a spade a spade. And they call it to the Congress. And they call it to the Government--that is the executive side of the Government. And I must say to you, if we work

with them right, there is a tremendous advantage. Jerry mentioned about Viet Nam, and the GAO had many auditors "looking over my shoulder" as a logistics commander in Viet Nam. And we had plenty of things wrong.

But the Congressional Record of 1970, '71, '72 when they were investigating me--I won't say investigating me, reviewing my operations--will bear witness to the fact that I said then, and I say it again, the best answer we can get in terms of effectiveness and efficiency in defense and anything else in our country, is the combination of the executive department, and others required in operating together with the GAO and Congress. In the case of supply and logistics in Viet Nam, that was accomplished.

I just quickly bring out a couple of more things. Finally, this report says interoperability of arms and equipment within the alliance must be relentlessly pursued. This is fundamental to a credible logistics deterrence based upon host nation support. Ladies and gentlemen, time is getting short. We now have as a result of some of the work of you all, and of the GAO in particular--we have a special committee on standardization, interoperability. This will be more fully discussed later today.

There are still, and some, who do not think we can standardize successfully, of these people are friends of mine--this gentleman is a friend of mine--because he is a knowledgeable professional, we have to look into what he says. There is General Polk who commanded the American forces in Europe for a long time, American Army.

Military standarization with NATO. How far should we go? And he throws a little bit of cold water on the fact that we're not going

to get very far, and we shouldn't. Well, I ask you, the operations research community--is he right or is he wrong? And to what degree? And here is where we have to come up with specific, definitive answers. If we want to say Carter is doing good or bad, if we want to say Jerry Brown is doing good or bad, or Mr. Vance.

They don't know. They depend upon knowledge that must be furnished by people in your profession. Why do Europeans oppose standardization? Why? Because, over time they think standardization means going back to what it was at the end of World War II. Everything American.

And ladies and gentlemen, there are people, including this article by an association I belong to, that says a two way street--that it's a "lot of baloney." That it's going to hurt America. This is an--it's an editorial from a national defense magazine, American Defense Preparedness Association (ADPA). Are they wrong? Lord, help us if they're right. There are other people who know far more about this, like Mr. Tom Callaghan who will discuss the absolute necessity of the "two-way street" approach.

Ladies and gentlemen, we have to have a solution to standardiation. And I have to say, I'm talking as an individual member of the ADPA. I was a member of that organization before it became the American Defense Preparedness Association. It was called the American Ordinance Association, and before that it was just plain U.S. Army Ordnance Association.

I'm telling you that I doubt the correctness of their editorial. I think there is a short range vision involved in this, and there needs to be a long-range vision. And I might tell you as the director of the NATO Long Term Defense Program task force on logistics, I had to argue this with our allies at their national capital. Our report said, standardization and interoperability of logistics support is not going to cost as much as these costly weapons systems. It's going to cost parochialism more than money.

And immediately they say, oh, why are you delving into their sovereign rights? And my answer is short range, yes. I may be getting into some sovereign rights, or an extension of what you call sovereign rights. But long-range-wise, I'm telling you that unless we do something about it, we won't have any sovereign rights at all.

We've got problems in the United States, ladies and gentlemen, between our three armed services, on parochialism. It's better, but it's not what it ought to be. Here, in NATO, we're talking about 15 nations, and some of those nations lost their sovereign rights, and so they're very jealous of them. And we can't blame them. And we helped put them where they are.

Thank God for the Marshall Plan and other such things, which indicates that our country, perhaps more than any other country in civilization, has the ability to think beyond the individual, and as a nation we can have a long-range vision such as the Marshall Plan.

(I don't know how this got in here (a small paper)). This says the world is changing so fast these days you couldn't stay wrong all the time even if you tried."

(laughter)

There's another one here that you might think is applicable. "In nature, wind and fog do not normally co-exist, in language, however, they sometimes do. (Don't laugh.) They sometimes do, and the greater the wind, the more impenetrable the fog." (I know you're not laughing at me.)

I have here another significant reference. It's a communique issued in Washington by NATO, dated the 31st of May, 1978, and it says among other things that the Heads of Government (by the way, I consider this a major achievement -- our President got a logistic program set before him, not as the President of the United States as such, as a member of the Heads of Government of NATO.

I think it's not challengeable that that's probably the first time a logistics plan ever got before the head of our Government. One of our problems is getting the doggone problems to the level it can do something about it.)

Well, we had, I think, a major success in Washington on the 31st of May and it says so in this document. Among the things it says, "the allies are convinced that the effectiveness of their forces can be increased through enhancing the interoperability and standardization of equipment and defense equipment planning proceeding."

Ladies and gentlemen, you, as a professional community, need to help determine how much and where and when and what are the costs involved. And every one of these things have to be spelled out. What's the long-term defense program? Well, it began in May 1977.

It began in May 1977 in London. There the heads of NATO governments agreed that we had to do something about getting ready, that we were too weak! So they told the Secretary General "a year from now, in May of 1978, in Washington, you give us a plan that we can approve, disapprove, et cetera." As a result they formed task forces to cover (not necessarily compatible, and I will say even more directly) areas that actually overlapped one another. These areas included such things as readiness, reinforcement going to Europe, air defense, (the fact that we had to have a network because you can't defend the air by geographic boundaries). It is the same with communications, same with nuclear strategy, same with command and control, same with electronic warfare; and then too, pertaining to logistics and rationalization. As a result of this, there have been approvals that have come out in the last three months, that include 15 (Ambassador Komer's Congressional Statement) major programs which will be cooperatively developed and executed.

Ladies and gentlemen, these programs are contained in a statement of Ambassador Komer, Advisor to the Secretary of Defense on NATO affairs before the Committee on Armed Services, a Special Subcommittee on NATO Standardization, Interoperability and Readiness, United States House of Representatives.

Here it is. Get a copy, read it, it's worth reading no matter where you are in this professional community. And it's there on this page 37, and it includes a list of major programs.

This (holding up a document) is the paper that says ammunition in many cases is interchangeable and interoperable if we just knew it.

This (another document) is a very fine paper by one of the speakers that follow, Mr. Callaghan. And this is a statement before the same Congressional committee, and it's a great piece of paper. Please, I ask you, make this worthwhile by reading the many important references!

Take a look at some of these things. I'm not going to go over all of this (another document) this is all worthwhile. This last one. It's a summary of the long term defense program issued in Brussels, undated by headquarters NATO, and it gives you more specifics in an unclassified way, recognizing all these reports are classified, and therefore you have to use whatever channels you can go through to get hold of a classified document.

Many of these are NATO documents, which means that you have to get a special clearance to get the documents. But there is a considerable amount of an unclassified version, beginning with the documents that I talked about here. Ladies and gentlemen, I'm through, except for one thing.

I've got a little document here that I cherish. It was written by - a talk given by a Mr. Phillips, of Raytheon Corporation. I

don't know if you think it appropriate for this kind of a meeting, but I have to tell you that I do, and please bear with me.

I am most sincere. The truth of the matter is, we are in a serious predicament relative to a credible deterrent in NATO as far as logistics is concerned. We have got some recognition of problems, and we've got some approval of a program to correct deficiences, so there is progress.

I am not a pessimist. The fact of the matter is, there has been great progress in the last few years, and particularly now we've actually gotten rid of the greatest wall that stopped logistic progress in the alliance. It used to be said the only principle of logistics in the alliance is that "logistics is a national responsibility," and that meaning--stay the hell out of my (national) business.

That's gone. I hope gone forever. There is an article in the March Defense Management Journal which I had the honor of writing, which ties together sixteen principles of logistics that already existed in approved NATO documents. And it attempts quickly to point out that unless they're implemented, U.S. cannot attain true and reliable readiness. All the NATO principles of logistics must be implemented if the U.S. is to attain a true readiness posture in Europe.

Which include, of the 16 that I mentioned, with exact references to what document they came out of, of those 16, one states standardization ought to be achieved to the extent practicable; and right behind it states, "interoperability has got to back up standardization."

And ladies and gentlemen, we must implement corrective action. Now, let me read this. "From bondage to spiritual faith' (Mr. Phillips has found that this that I am going to read is more or less the cycle of civilization). "From bondage to spiritual faith, from spiritual faith to courage, from courage to freedom, from freedom to abundance, from abundance to selfishness, from selfishness to complacency, from complacency to apathy, from apathy to fear, from fear to dependency, and from dependency back again to bondage."

Where are we in America? As we go through this program, let's think in terms of the more serious aspects of our freedom. Where are we? And then let's remember the American role. De Toqueville has stated "America is great because America is good, and America will remain great as long as America is good." I'm now talking morality and professional ethics--it's a part of our profession. It's not just a part of the profession of ministers and priests.

This is why America is great. Ladies and gentlemen, the community that we represent here this morning has an important part in determining how we rate in the future. And to get down to specifics, how do we improve, at what cost, how do we make appropriate allocation and distribution of our resources between civilian and military needs, so that we can achieve optimum effectiveness and efficiency in having readiness to support the soldier, sailor, and marine, and airman, so that either we will have a credible deterrence and Russia won't challenge us, or if they make the mistake of challenging us, they can regret it.

And if we can do that, they'll know it. And they're not going to start a war that they know they're going to lose. And maybe this will help us maintain the peace that every one of us want, and maintain, I might tell,--I might emphasize and remind ourselves,--maintain the primary mission of the Defense Department, which is to maintain peace. God speed.

Mr. Hahn's remarks were not available for inclusion in these proceedings.

INTRODUCTION OF DR. DAVID CHU BY MR. HYMAN S. "ZEKE" BARAS 1/

Thank you very much, General Heiser. Jerry Stolarow was looking for a thought provoking discussion today, and General, you certainly provided it, to set the stage with your very stimulating talk.

This brings us to the first topic of today's meeting, the morning session, which is entitled Law and Policy. When we speak of the law, of course, we're thinking about Public Law 94-361, which requires consideration of the standardization or interoperability of systems proposed for acquisition that is to say, standardization or interoperability with the systems which are either fielded today or to be fielded by our NATO allies.

We're also talking about Public Law 93-344, which requires programs for which funds are being requested to be related to agency missions, and those missions to be related to national needs. And we're talking about the policy enunciated in OMB Circular A-109, particularly those sections dealing with the front end of the acquisition process.

1/ Mr. Baras is the moderator for the morning session. He is Assistant Director, Land and Warfare Mission Areas and NATO Matters, Procurement and Systems Acquisition Division, Major Acquisitions Subdivision, U.S. General Accounting Office.

All three, the Public Law and the OMB Circular, are more or less contemporary, but I believe I'm correct in saying that they were conceived independent of each other. And the trick is to synthesize the requirements of the three in procuring weapons systems.

Yesterday afternoon we held a panel on industrial collaboration with our NATO allies and it was evident form the discussion that followed the speeches that there are still some lingering doubts and reservations about the degree to which standardization can be practicably achieved. Hopefully, by the end of the day we will have some better insight into this topic.

MISSION BUDGETING AND ANALYSIS OF U.S. FORCE OPTIONS

DR. DAVID CHU, ASSISTANT DIRECTOR,
NATIONAL SECURITY AND INTER-NATIONAL AFFAIRS DIVISION
CONGRESSIONAL BUDGET OFFICE

Mr. Baras: Our next speaker is Dr. David Chu, who is an economist, has a doctorate in economics from Yale University, and has authored or co-authored several monographs in the years that he was with the Rand Corporation. Dr. Chu is now director of the National Security and International Affairs Division of the CBO, and his topic today will be on mission budgeting and analysis of U.S. options. Dr. David Chu.

Dr. Chu: Thank you. It is a pleasure to be here this morning. I feel I must begin my talk with a small apology. I have just recently come to the Congressional Budget Office, and so cannot claim to be an expert on mission budgeting. However, let me try to bring to your discussion the viewpoint of someone who is just beginning to learn about the process and understand the concept.

Let me start, as I tried to do in studying the subject, with a list of the pro's and con's of mission budgeting in assisting defense analysis, particularly in the congressional context.

On the positive side, it does provide a broad, analytic view of where funds are expended. It takes the focus off inputs

---

Dr. Chu's comments are based on his own views of the subject discussed at the conference and do not necessarily reflect any position of the Congressional Budget Office.

and tries to concentrate the discussion on outputs, on readiness, on performance -- on what we're buying forces for. This provides a contrast with the input-oriented budget process that governs the formal decision on appropriations.

Second, mission budgeting is helpful, I think, in raising questions about priorities and military effectiveness. Although it has not been used extensively in this manner so far, the potential is there.

Finally, it provides a new and different view of the defense budget. It is true that there are many similarities with the FYDP and program presentations that DOD has offered for over a decade now. Nonetheless, a fresh view is always helpful: It teaches us some new lessons about why and how we're spending funds.

On the negative side, the problem is that many of the decisions in Congress are not really made in terms of the broad categories used in mission budgeting. Congress makes the decisions in much finer detail -- and it must take into account issues besides pure military effectiveness. I think it's unrealistic to believe that mission budgeting will replace the present authorization and appropriation process. However, mission budgeting can become one of several vehicles that the committees of the Congress use to debate the defense budget.

In my own view, a key conceptual failing of the mission budgeting structure, as it now stands, is the tendency to lump together capital and current expenditures. While it is true that some presentations offer separate procurement figures, none offer an estimate of what we already have in terms of a "capital stock." Without a notion of what we're adding on to, I doubt that we can make complete and realistic assessments of the importance of particular expenditures. For example, it is not terribly helpful to have a single number for naval forces that does not discriminate between what we're spending to operate today's forces and what we're investing in future forces. Moreover, it would be useful to know how much of that investment is merely to offset obsolescence and depreciation. The present system really does not allow us to address these issues very well.

It's very difficult to develop capital stock accounts for something as complex as the Defense Department, and I recognize that no other agency of the government has them, either. But I would urge analysts in this audience to consider an early effort on the subject.

The third problem that I see with the mission budgeting concept is that many systems have more than one purpose, and it becomes somewhat arbitrary which category you put them in. That difficulty is particularly felt when one starts to talk about overhead expenditures and support costs. No one, to my

knowledge, has a very good idea of how to relate these costs to the forces in the field. (As General Heiser indicated in his opening remarks, people aren't always sure what a support cost is!) In budget presentations, these costs are often lumped at the bottom, a big aggregate that cannot easily be understood in terms of how it contributes to mission effectiveness and force readiness. As a result, we have widely varying views regarding whether support and overhead costs are too high or too low in relation to operational forces.

Let me turn for a moment to your immediate concern: that is, the relationship between these concepts and the issues of standardization and interoperability. My brief experience with the concepts suggests they are unlikely to be of great help in this debate.

The mission budgeting presentation can help shape the debate. It can help point out what the priorities are, it can help sharpen the alternatives. But in the end, the decisions relating to standardization and interoperability really depend on whether the participants in the coalition have a strong enough incentive to overcome their individual differences. They involve political choices that no amount of analysis can really make for the decision-makers.

I am, in other words, skeptical about how much analysis can do, beyond laying out the alternatives. Not to say that that is an unimportant task. It is a very important task but I think it is crucial to begin with some sense of humility about how far analysis alone will carry the debate.

What are some of the key elements in making progress on the standardization and interoperability question? As I see it, one of the most important is to find a set of tradeoffs that will allow all members of the coalition to feel that they have benefitted from the decision to pick a common item, or items that have common elements.

In that regard, it may be useful to think about how these tradeoffs could involve items other than defense funds. After all, it may turn out, as the Europeans fear, that one nation in the coalition has an advantage in producing weapons systems -- the United States. If one nation has an advantage in defense production, what additional items are on the agenda to persuade the other nations that, overall, agreement is in their interest?

Some have proposed linking decisions on standardization and interoperability to trade issues. That's an ambitious linkup. We have difficulty getting agreement on trade issues by themselves without injecting defense budget questions at the same time. But I think it's a useful notion to think in these broad terms.

Let me turn for a moment to a research issue that relates to approaching this question in a broad fashion. The debate on NATO expenditures would be improved if we had a better idea of what our NATO allies are spending on a mission budget basis. One of the most important technical problems is how you price the resources that go into the missions in the different countries.

The price system in each country is quite different. Just to identify one element, many NATO nations still have a draft system, and in those systems the price of a conscript is much lower than the cost of an enlistee in the armed services of the United States.

How is mission budgeting used by the Congressional Budget Office? We do, of course, a certain amount of formal estimating for the House and Senate Budget Committees in this format. It is also really the spirit behind a good deal of the analytic work that we do of alternative programs in defense. That work has concentrated on trying to identify broad options, and the effort is mission-oriented.

I will confess that we are not always precise about following the standard set of mission definitions -- one of the criticisms, I think, raised by one of my colleagues on this panel. We have tended to tailor them to the problem at hand. And I'm not sure that is really bad. I don't think we're at the point that we have a definitional structure that we are all happy with, that we could all conform to, regardless of purpose.

One difficulty with this kind of option work is that Congress rarely makes decisions in terms of complete options. The Congress -- as is appropriate -- makes decisions at the margin, adding to or subtracting from the big packages. And this again is one of the limitations of the mission budgeting approach.

Perhaps I can offer a few quick conclusions as I see the problem we have been asked to address today. I think the mission budgeting concept can provide assistance in shaping the defense debate; in identifying what we spend, for broad purposes; and how much alternative options will cost. It can be particularly helpful in some of the very big, long-run choices confronting the Congress and the Defense Department. The problem with the mission budget numbers, as a basis for making specific year to year decisions, is that Congress must make choices at the margin, taking into account several issues besides those raised by the mission budget presentation.

With regard to standardization and interoperability, I would be skeptical about how much analytic studies are going to help solve the problem. They can be useful in sharpening the alternatives. But as General Heiser's comments suggested, progress towards standardization and interoperability will really depend on the political will to do the job. Analysis can identify for decisionmakers what price they're going to pay, and what they're going to get out of it. But such decisions are ultimately theirs, and analysis cannot make those decisions for them.

Thank you very much.

(Applause)

INTRODUCTION OF MR. FRED DIETRICH

BY MR. HYMAN BARAS

Thank you, Dr. Chu. Our next speaker I believe is known personally to many of you. If you don't know him I'm sure you know his name. Fred Dietrich has been a career Air Force officer, a management consultant with the public accounting firm of Peat, Marwick, Mitchell and is now with the Office of Management and Budget and particularly with the Office of Federal Procurement Policy.

Fred Dietrich has been a consultant to the Commission on Government Procurement, and probably has as much knowledge as anyone in the country about the logic that went into the preparation of A-109, and how it should be implemented. If you don't like A-109 or if you do like it, now is your chance to tell Mr. Dietrich about it.

Fred's topic this morning is titled "Analytical Depth and OMB Circular A-109. Fred Dietrich.

ANALYTICAL DEPTH AND OMB CIRCULAR A-109

MR. FRED DIETRICH, ASSOCIATE ADMINISTRATOR
FOR SYSTEMS AND TECHNOLOGY
OFFICE OF FEDERAL PROCUREMENT POLICY

Thank you, I'm sort of from the same school as General Heiser on my prepared remarks. I would like to talk a little bit about A-109--what it is and some of the things that are behind it. Then how I feel it may relate to interoperability, standardization and rationalization. Notice I put rationalization last because I don't understand it either.

To start with, what is A-109? Someone said they think it's a PT boat, some think it's a Messerschmidt fighter, or an Italian helicopter. All of those are A-109's. But it's none of the above. It's a policy that applies to large acquisitions of goods and services. It's policy that's built on problem solving logic, some management principles, business principles, and some hard learned experience of many people. That's what I would like to address, the foundation of the policy.

Let me first address the problem solving aspects of A-109. A-109 is simplistic in its purpose, and classical in its structure. First it says you should identify and define your problem. That's pretty straightforward. The second thing in that logic process is to identify and define alternatives that may solve that problem. The third is to consider those alternatives, you test them, you evaluate them, and you choose those which are most viable, the most beneficial to the government. Finally, once you've demonstrated and you've tested those alternatives, you implement the alternative or alternatives that are the most beneficial. Now

that's pretty simple, no one can be against that, as my introducer said. That,as you know, is classic problem solving, some say motherhood, but it's straightforward logic.

One of our objectives is to acquire major system capabilities from the private sector, and this introduces a basic business principle. When you have a single buyer, and multiple suppliers, you know an oligopoly, in contrast to the monopoly, you have got to create and maintain competition as early as practical in the acquisition process, and maintain that competition as long as it's economically beneficial to do so. A-109 says that. It just gives that straightforward, business principle.

I'd like to introduce my first management principle. When you want to get something done, give a good, knowledgeable, tough guy the responsibility for the job, and give him the necessary authority, and hold him personally accountable. A-109 says that and calls that guy a program manager.

I'll introduce another management principle, and that's plan ahead. I think most of us understand that one. A-109 requires planning ahead and calls it an acquisition strategy. An acquisition strategy that integrates management, technical and business plans, for the whole acquisition process. Planning ahead requires thinking ahead. A-109 elicits that by requiring each acquisition strategy to be tailored to the individual program at hand. Not following the cookbooks.

Still another management principle is that key decisions involving commitments of significant resources should have the full support of top management. A-109 includes this principle, requires the head of the agencies to make key and only key decisions. These key decisions, of which there are only four in the whole acquisition process. The first one, approval of the need. Again, we've identified it and we've defined it, and now let's get that approved before we start to acquire solutions. With this first key decision the agency head is not only approving the need but the program scope, the total resources necessary to achieve the capability to fill the need. So when the head of the agency approves a need, he is also committing a wedge in his budget. This ties into mission budgeting and zero base budgeting. He's committing himself to a wedge in the budget, that is, if all works well in the acquisition process, he will commit the resources of his agency to fill the need.

This keeps us, as the airlines say, from being overbooked. And of course the Defense Department is classically overbooked in the things that they start and that never can be brought to fruition. Overbooking leads to many other things; it leads to introduction of obsolescent technological capabilities, it raises the cost of what we acquire by delaying, by stretching, because there is not enough money to go around.

A-109 says let's get that commitment up front. Since this is such an important decision, the take off, so to speak, one should check it out all the way. All the way through, up to the Congress. The idea here

is to get them on board for the takeoff, with the feeling that there will be less chance of their causing a crash later.

The second key decision is the authorization to proceed to demonstrate the most viable alternatives. This is an increase in the resources that are being committed to reducing the risks in finding a viable solution. This decision should be a whistle-stop.

The third key decision, and the third one is really a key one because of the authorization to proceed into full scale development, and initial production for testing in an operational environment. Now, this is a large commitment of resources. It's ever increasing with each decision.

The fourth key decision is authorization of full production. This should be another whistle-stop giving recognition that in fact full scale development and initial production has been successful.

A-109 does not address how such decisions ought to be staffed. A lot of people tie the DSARC process and the TSARC process, and other agencies staffing processes with A-109. A-109 does not specify how decisions will be staffed. Decisions may be staffed differently in different organizations--companies have their own style and their own structure, some autocratic, some bureaucratic, and some democratic, so do the agencies within the Federal government. A-109 just says, streamline those channels from the head guy to the program manager.

Experience and the lessons learned by many, from many scores of major system acquisitions introduced the finishing touches to A-109. The finishing touches are the disciplines necessary to make the acquisition process really work smoothly. That's where the muscles are introduced to the skeleton that I've just outlined as a result of the management principles and the basic problem solving logic.

Now, the final principle I'd like to introduce is management principle There should always be someone to pin on if the logic and principles of A-109 are not being adhered to within an agency. Now, A-109 says each agency should have an acquisition executive who has the responsibility for establishing the policy within that agency and monitoring its implementation and application.

Now that I've described A-109, how does it relate to the subject of standardization and interoperability. As with Tom Hahn, I'm not very comfortable, with that rationalization of ours. Let me go back to the first point in the logic process. The identification and defining of the problem. This is where standardization and interoperability must be introduced, right up front at the beginning as needs are identified. The process by which needs are identified is by analyzing missions. There are operational scenarios, mission goals and objectives, existing capabilities and technological opportunities.

We have -- and in the case of DOD -- military threat, and in matching these with the current capabilities of U.S. forces, of combined U.S. forces, of NATO forces and capabilities. What program capabilities do they and we

have, already earmarked, already destined to go into the forces? What deficiencies are there in these forces? The advanced technologically feasible capabilities that can be foresee in the future. The present and future cost of operations and ownership. The political realities. All of these things must be considered at the outset in doing mission analysis. And I don't think this is being done today.

In performing a mission analysis, if S&I are in fact found to be necessary to realize the desired capability, the statement of need should certainly include such functional requirements. And in the Defense Department they call that the mission element need statement (MENS). The mission need is in fact not a solution oriented document. The mission need expresses the need for that mission in functional terms, in end objective terms, in the goals that you're trying to work to, the capability from the standpoint of the end objective, and not in terms of the solutions themselves.

If it's necessary to have fully coordinated, mission needs, go back to one of the management principles and say, hey, get that coordination all the way at the top. You know, get them on board at the take-off so they don't cause the crash. And this is true also for the mission need, and that mission need, as the result of an analysis in a NATO scenario, would certainly be coordinated with our NATO allies.

And if necessary, I think the mission need could be as part of a memo of understanding--the memo of understanding that we have, in fact, a military need. Whether it's a defense minister or whether it's a political

minister, that memo of understanding should be articulated and agreed upon.

And again, it's not in terms of solutions. I think that's much easier to achieve than trying to come up with an agreement on a solution at the outset where the need has not been fully articulated and agreed upon within such a complex situation as NATO.

In discussing mission analysis, I can't help to bring out a little of the war college in me, having attended the Air Force's. There are some things that, you know, occur--and by the way, this is my view, and doesn't represent the Defense Department, the Office of Management and Budget, the OFPP. You know, this is Fred Dietrich.

We need to be imaginative. We need to overcome the old adage that has some modicum of truth in it. We begin each new war with the perfection of the weapons, tactics, strategies suffered in the last war. Only then when we start to apply them in a now war do we find that something is different and they don't work. We know some things that are already different that I'm not so sure we're accommodating in our mission analysis, and in our identification of needs. You know, one thing that is different, clearly obvious, at least in my mind, in the NATO environment, is the compression of time. We will have no time to outproduce anybody. Another is a potential for continued, total force command and control on a real time basis. To me that's essential. I think there is a technological capability to do it, I don't think we have it today. Still another is the spectrum of weapons in our inventory, in our aresenals. We have not really, as I see it, addressed these from an interoperability, standardization, and effectiveness overall, in the conduct of postulated warfare.

Coming back to mission analysis, identifying needs for standardization and interoperability should be an integral activity. A little more on the mission analysis related to S&I. Standardization, certainly in an analysis of systems, ought to be essential when you talk about the high volume consumables and expendibles such as fuel, ammunition, bombs, displays for operators.

Interoperability, I think there are some classic examples where that doesn't exist. You heard somewhere earlier about the trailer that wouldn't hook to the jeep. But we also have missiles that won't hook on airplanes. We don't have interoperability of missiles, air to air missiles, for example, within our own services let alone with our NATO allies.

You know, it doesn't mean that you have to have truly optimized performance of the missile, fire control and everything else, all the systems, but at least you ought to be able to hang them on the airplane and get some degree of capability. I would hate to be caught on the ground as a fighter pilot with a bunch of missiles stacked over there because they won't fit on my airplane. You know, all I'm going to have to throw is rocks.

That's tragic, but I think that situation, to a degree, exists. Now on the other hand, I get lost when we talk about standardizing major systems. Again, this gets back to the business of how long a war and so forth. From a logistic standpoint, over a long period of time, that standardization is very, very attractive. But I don't believe it's as critical as interoperability would be and is, when fighting a war with the weapons that are in the field.

Another term I'd like to see used is operational compatibility. And maybe that's a part of interoperability, but it's not clear,at least in my mind. I don't think we can tolerate the degradation of NATO weapons, support and communication systems effectiveness, by self inflicted interference, and by lack of compatible C^3 to effectively apply the total forces.

These have to do with operational compatability factors that must be considered in the mission analysis; and if necessary, be included in the statement of need; and again come to full cycle of agreement with those who are going to be making the decisions as to eventually the weapons that would be applied.

Now, I haven't talked to you yet about the selection process under A-109 of the alternatives. How would the alternatives be derived? As I see it, once we have that need, we can solicit from industry, and A-109 says that we should consider foreign technologies and foreign weapons. In fact, that part of A-109 came from a comment on the draft, and the comment came from the Industrial War College, back about two years ago, before A-109 was published. So there was some foresightedness by this school about NATO interoperability and interchangeability. When we solicit and the need says we must have interoperability and standardizations to whatever degree, that is basic and that becomes a part of the functional specifications that's in the solicitation. Foreign participation becomes a part of the acquisition strategy.

The acquisition strategy and the solicitation are given to the free enterprise system, to all the industrial contractors of NATO, so they know

that's part of their game. As a part of that solicitation, if in fact the need is such, or so articulated that there is to be co-production, if there is to be standardization, et cetera, et cetera, et cetera, that should be known at the outset. Tradeoffs can then be made by the contractors as they team up with licensing agreements and so forth, across the spectrum of the industrial capability that we have within the NATO countries.

In other words, let the free enterprise system work it. Let's not try to work it through the government, predetermining what the concepts and solutions are, and then dictating from a political standpoint, breaking a weapon system all up and saying, now here is who is going to do what. I think that that's fraught with peril.

I think that our industrial capabilities and those of these combined countries can sort this out and when they do it in competition, I think we will be amazed at what they come up with--from the standpoint of the overall effectiveness, from the application of technologies, their ability to co-produce, and so on.

The message I have, is that A-109 is compatible with doing these things. I think you have to read it into A-109, and A-109 provides that flexibility, which permits and enables an interoperable and operationally compatable type of capability to be acquired.

INTRODUCTION OF MR. THOMAS A. CALLAGHAN, JR. BY MR. BARAS

Thank you very much, Fred. Our last speaker this morning, Tom Callaghan, has written extensively and testified on numerous occasions before Congressional committees, and various forums on both sides of the Atlantic, on the contribution that standardization could make to strengthen our forces in western Europe.

His is the original voice pointing up the need for greater standardization, and it continues to be a strong force in influencing more and more people to think along those lines. Mr. Callaghan's topic this morning is "Allied Armaments Cooperation and Cost Benefit Consideration." Tom Callaghan.

MR. THOMAS CALLAGHAN, JR.
DIRECTOR, ALLIED INTERDEPENDENCE PROJECT,
GEORGETOWN UNIVERSITY

Ladies and gentlemen, I've been on this platform before, and it's quite a joy to see as many people here interested in this subject; to hear as inspiring an opening statement as General Joe Heiser gave. You know, six years ago when the State Department, with Defense Department funds, put out the contract that led to my report, one of the companies that was solicited declined to bid. They said they considered the procurement a waste of government money because anybody that knew anything about the subject would know that allied armament cooperation was impossible.

So I think we've made a lot of progress. One small thing. Our statement to the House Armed Services Committee in your program has gotten shuffled a bit. Can I just give you the correct order of the pages, beginning with the page where problem begins through to where it ends?

Page 53, then 59, then 58, then 54, 55, 56, 57, and then 60, and over and out. Since Mr. Hahn discussed the legislation which passed the Congress, and Mr. Dietrich discussed the relevance of A-109, I'm going to focus on three subjects.

Number one, the need for structures in order to achieve allied armaments cooperation. Two, the need for one specific structure, namely a NATO Industrial College. And three, some challenges to the systems and operations analysis community. The legislation which passed the Congress; the appointment of the House Armed Services Subcommittee, to look at NATO standardization interoperability and readiness; and the beginnings in Europe at a structure that we hope will become a European defense procurement agency reflect

changed attitudes and changed concepts toward allied cooperation. These changes will go some good distance towards correcting some of NATO's conventional force deficiencies. But without new structures within the alliance, within Europe, and between Europe and North America, the conventional force balance between NATO and the Pact, will not improve. It will get worse.

For nearly 30 years the heads of government, allied foreign and defense ministers, and the national parliaments of alliance countries, have approached allied cooperative efforts in terms of cooperative projects, rather than cooperative structures.

Not one of them would seriously argue that a domestic procurement program could be managed on an ad hoc, unstructured, project-by-project basis. But seemingly they expect an allied procurement effort totalling over $40 billion per year, to be coordinated by 14 sovereign nations, without structure, without rules, without predictability, and without public and political comprehension and support.

Without a cooperative structure, Europe and North America--the two richest, most technologically advanced industrial economies in the world--will continue to be out-produced and out deployed by the more backward economies of the Warsaw Pact.

Now, let me address one structure which I think we need, and need very soon. It is a two-tier, two-campus, NATO Industrial College. Two tier--junior and senior. Two campus--European and North American. The attendance at each campus--half North American, half European. Purpose--twofold.

Number one, to get people accustomed to working together. To look upon one another as allies instead of as foreigners. The great genius of General Eisenhower during World War II, I think, was best examplified by the story of a man that he sent home; the man protested saying "What am I being sent home for, I only called him a son-of-a-bitch". And the answer was "No you called him a British son-of-a-bitch". We need to build that same kind of thinking within this alliance.

Secondly, we need to overcome the view which is widely held in every national defense ministry and the defense industries--that standardization is an impossible task; or that standardization runs contrary to concepts of diversity; or that standardization in the long term (and it's long only because of weapons development and production lead time) is somehow incompatible with achieving interoperability in the short term; or failing to see that interoperability means making something better our of the mess we now have, because we didn't have standardization to begin with.

Many of these misconceptions arise in our national defense industries because they have operated in protected national markets. They do not know how to market, develop and produce across material borders. Why? Because they serve first their domestic market, and then go out and peddle what they've made into third country markets. But the multi-national companies operating in the commercial markets of the world, do know how to design, develop, produce, and market across national borders. We need a NATO Industrial College in order to transfer know-how from the multinational companies to the defense companies to let people realize it can be done; and to let them see how it can be done.

Let me give you one example. The Fiesta automobile. First of all, the Fiesta is an example of both standardization and diversity. The automotive industries of the United States, of Europe,and of Japan, have mastered the techniques of producing greatly diverse automobiles on a standardized basis. So don't let anybody tell you that standardization means you will have one bow and arrow and no more. You can have as many as you want, in any color you want, and it doesn't even have to be black any more.

The Fiesta automobile is developed and produced all over Europe. The engine in Dagenhein, England; the transmission in Bordeaux, France; the wheels in Antwerp, Belgium; the carburetor, distributor, spark plugs in Northern Ireland. In other words, this car is produced within countries with different industrial methods, different measurement systems, and different trade and industrial policies and practices.

The most significant thing of all is this: it is final assembled in Spain, Great Britain and Germany, and sold throughout the world <u>at a competitive price</u>. So don't let anybody tell you it can't be done. Don't let them tell you it's easy either. It isn't. It's damned hard. But there is the know-how to do it, in Ford, in Caterpiller, in IBM, in GEC, in many of these multinational companies of the western world. We've got to get that know-how into our military officers--junior and senior--into our civilian officials--junior and senior--and <u>very importantly</u>, into the junior and senior industrial and labor executives of the defense industries of this alliance.

Next, some challenges I'd like to put forward for the systems and operations analysis community. This community(and I may be doing you a disfavor) but in mind you tend to be project rather than resource--oriented. And I mean resources in a macroeconomic sence, not micro. You've done a fine job of project analysis, but I don't think you yet waded as fully into the analysis of fundamental American and allied resource issues.

Let me suggest just a few such issues for future analytical effort. The Senate Armed Services Committee last year said, "There are strong indications that the Department of Defense tries to keep twice as many projects alive as can be reasonably funded at a full level-of-effort."

Much the same point was made by the House Armed Services Committee this year, in condemning project stretchouts, long lead time and research and development ad infinitum, with very little hardware being produced and deployed. So why don't you look into this question: How can the Pentagon ask contractors to design-to-cost, when the Pentagon itself schedule-to-budget? Instead of budgeting to schedule?

Secondly, what are the long term effects on American and allied readiness of undertaking more development projects than can be funded at an optimum level? Of stretching production, ostensibly to save money? Of increasing unit costs in order to reduce annual project costs?

Thirdly, should not some of these underfunded projects be undertaken in Europe, so that all remaining projects could be funded at an optimum funding level? Wouldn't this be a constructive step towards getting two way traffic in allied armament development, production, trade and support?

Weapon systems being acquired at less than optimum funding rates? Why are repair parts, training equipment and manuals. Support equipment and manuals also being acquired at less than optimum rates?

And with what impact on allied and American force readiness? How can NATO be expected to fight a war when defense departments, including our own, buy weapons without adequate ammunition? Aircraft without adequate repair parts? Missile launchers without adequate numbers of missiles? What is the impact of fuel and ammunition shortages and operational training and allied readiness?

Is not the short-war long-war argument effectively foreclosed by the long lead-times and even gaps, between war reserve replenishment orders, the first production deliveries? How can NATO prepare for either a long or short war when the United States, with less than 25 percent of allied conventional forces, is spending $26.7 billion on conventional weapons acquisition, whereas our 12 European allies with nearly 80 percent of NATO's forces are spending only $13.4 billion for the same purpose?

Has sufficient attention been given, as Mr. Hahn suggested, to the impact of our arms' restraint policies on our armaments cooperation policy? Every country in Europe needs larger markets in order to sustain reasonably healthy defense industries.

What is the impact on their willingness to find those larger markets within a North Atlantic defense market if we willingly forego third country markets which they can enter? France in 1976, for example, received orders aboard for twice as much as normally it delivered within its own defense market. In 1977, two and a half times as much.

Are we moving towards arms restraint prematurely before we offer our allies other economic alternatives? Much is said about the progress we are now making in standardization, interoperability and rationalization.

Let me offer (since some people are puzzle by the term) Bob Komer's definition of rationalization. I think it is the best and I think it does have a real meaning. Rationalization is doing anything (he says) in NATO more rationally than it's being done now.

But if we are to measure whether or not we're making progress, I think your community ought to ask yourself how do we measure standardization (or de-standardization) progress in an annual $40 billion a year procurement effort? Are one or two projects per year to be considered progress? When we are de-standardization at a $40 billion per year pace?

Why are the 560 million people of the North Atlantic Alliance, with a combined gross national product 289 percent greater than that of the Warsaw Pact, and spending as much on conventional weapons as is the Warsaw Pact--why are we unable to defend Europe against conventional attack from the 365 million people of the Warsaw Pact without early recourse to nuclear weapons?

Which brings to mind an other political absurdity; a position that we in this alliance have put ourselves in, namely, how can there be mutual and balanced force reductions between Warsaw Pact forces which can rearm, refuel, repair, support, supply and communicate with one another? and NATO forces which have only a limited ability to do so? In other words, how can there be balanced reductions between the Warsaw Pact's collective force? and NATO's collection of forces?

These are not new questions; but they are questions that demand answers and corrective action because the Pact's relentless, conventional force build up is bringing this alliance face to face with the grim choice of surrender, or nuclear war.

American policies as enacted by the Congress and American policy implementation by itself and with its allies, have not yet adequately addressed these macro-economic issues. Will the systems and operations analysis community rise to this challenge? Thank you.

INTRODUCTION OF MR. MICHAEL LEONARD BY DR. JOHN G. BARBMY [1/]

This afternoon we're going to have four good men and true. Some from their present jobs, but most of the gentlemen from their prior experience have been in this NATO coordination business before. So it's not just the present hats they're wearing, some of them are wearing multiple hats, but some of their previous ones.

If you had occasion recently to look at an organization chart of the Department of Defense, you will notice over on the lefthand side this little box which is called NATO advisor, and that's where Ambassador Komer is. We're going to have a speaker from his office, Colonel McInerney. And we're going to have a gentleman from the Office of the Joint Chiefs of Staff, Dr. Kapper.

As you know, nowadays there are two Under Secretaries, one Under Secretary for R&E, Mr. Perry, and from his office, we're going to have Mr. Calaway. Finally and the Assistant Secretary of Defense level, for Programs Analysis, we're going to have Mike Leonard.

These are folks right near the top in the Office of the Secretary of Defense, and we're pleased to have them. Now, I'm going to start off with Mike Leonard, and in effect I throw a little bit of a challenge to him. This morning Dr. Chu of the CBO pointed out that analysis can be limited because of the political overtones.

1/ Dr. Barmby is the moderator for the afternoon session. He is Assistant Director, Systems Analyses Staff, Procurement and Systems Acquisition Division, U.S. General Accounting Office

And Callaway indicated that, maybe the community may be a little bit inhibited. It's true, if you look at analysis in the more conventional sense as the MORS people might look at.

But if you think of analysis in a more broad sense, I think the analytical community does have something to offer. You heard Dr. Peterson's talk yesterday. He alluded to this, that in the business community, the analytical groups working closely with corporate presidents have done a fine job helping them in company positions.

Furthermore, he talked about how nowadays the analysts are in a position to help in negotiations--labor-management negotiations, international negotiations. Now, this is a different kind of analysis than the conventional computer work.

So I think there is a role for the analysis community, and hopefully this afternoon some of the speakers will indicate a little but more of what we might be able to do.

Our first speaker, is Mike Leonard, from the Program Analysis and Evaluation group. His career has always been in defense, first as an officer and then as a civilian. He's a graduate of the Military Academy; he was an officer in industry for a while. When he came to Washington the first thing they did was to put an Army officer in a group that worries about Navy programs. He's been here since '71 over at PA&E, first as a staff member on the naval side, then he moved over into the mobility group, next as head of the mobility group, and most recently, last year, he took over the European part of PA&E.

So we're pleased to have Mike Leonard. He's going to talk on PA&E's Role and Rationalization, Standardization, Interoperability Analysis, Opportunities. Mike.

PROGRAM ANALYSIS AND EVALUATION ROLE AND R/S/I ANALYSIS OPPORTUNITIES

MR. MICHAEL LEONARD, DIRECTOR
EUROPE DIVISION, OASD/PROGRAM
ANALYSIS AND EVALUATION

I guess the first thing I ought to do is to indicate that the choice of sending me to work on Naval forces when I came to Washington, after being in the Army, was not made by PA&E. It was made by the Office of Management and Budget, which is where I showed up first.

They decided that I ought to work on anti-submarine warfare after my background in Army intelligence, and then I moved over to PA&E and did the same sort of thing there.

As indicated on my title slide, my talk this afternoon will be broken into two main parts. First I will describe what PA&E does, as this was billed as sort of a get acquainted session. I will try to emphasize what we do in regard to rationalization, standardization and interoperability.

In the second part of my talk I will try to give a brief overview from PA&E's perspective of the state of play in R/S/I analysis at this point some of the opportunities and challenges that is poses, and some of the difficulties that have been encountered in R/S/I analysis in the past, and undoubtedly will persist in the future. And I will give you an example of the R/S/I analysis that has been done very recently.

Time being very short, this talk will be necessarily superficial. I will try to answer any questions you have later on this afternoon.

The primary functional responsibilities of the Assistant Secretary of Defense for Program Analysis and Evaluation are indicated on this slide. The ASD (PA&E) Russ Murray reports directly to the Secretary of Defense in these areas. I will be giving quite a bit more detail on the first three items.

The next two down sort of summarize PA&E's leadership roles within the defense analysis community, where we do a lot of work on coordinating assessments for the Secretary of Defense. We also provide guidance to the services, and review the proposals that the services make on forces and acquisition programs. The last entry refers to a new function of PA&E which recently was absorbed from the R&D community: responsibility for test and evaluation. Here our role is largely that of a consumer protection agency to make sure that the forces in the field and fleet receive hardware that has been adequately tested and doesn't require a Ph.D. to operate and maintain.

This is a fairly large charter, and Russ Murray doesn't have a very big staff to carry it out. He has a staff of about 95 professionals. There have been some incorrect statements made about the composition of that staff, and I would like to set some of that right today. We're not all a bunch of recent products of grad schools and MBA's who have no military experience whatsoever. A solid third of the staff is mid-level officers who have made an outstanding contribution. Without them our operation would be virtually impossible. Certainly it would be a lot more

difficult. Most of the civilians involved have had substantial military background, at least in military analysis, and frequently quite a bit of time in service themselves.

This next slide is the inevitable line and block chart that always shows up in presentations. At the top part I've broken out the PA&E staff, under our five Deputy Assistant Secretaries, or the equivalent. In the blocks underneath, I've indicated primary roles and areas of emphasis within the DOD planning, programming and budgeting system. And then finally their principle staff interfaces within OSD and with other elements of the Department.

On the top chart, reading from left to right, starting with the lefthand portion first, one finds what we call our force teams. Two of these deal with strategic forces and tactical nuclear forces, chemical warfare and things of this type. There really isn't much R/S/I interface in the work that they do.

The four who work for the General Purpose Programs Deputy have quite a bit more to do in the R/S/I area in connection with the acquisition process. And they get a lot of leadership and guidance on R/S/I from the deputy, Gene Porter, who used to run the Europe Division before me. He has a large interest in R/S/I.

In the middle of the chart one finds the regional programs under Dr. Paul Wolfowitz, for whom I'm actually substituting today. I run the Europe division. I have six people, and we do our best to augment the force teams in the R/S/I area.

We also provide a service in that respect for the entire DOD analysis community by maintaining a data base of equipment holdings of U.S. and allied forces--ground, air, and naval forces out into the middle Eighties. That will be a powerful tool when completed and available to the R/S/I analysis field. Last winter, when I came to my present position I challenged the need for a lot of information on our data base. I coundn't see how we were using some of the data in our analytical work and force assessments. I asked why we needed information on generators and things like that. The answer I got was that these data would be needed to do R/S/I analysis. There is quite a bit of effort in managing the data base. I have one man doing it full time, and it's more than a full time job for that person.

Our cost and resource analysis people provide quite a bit of support in the R/S/I and system acquisition fields, and the final group on the right is the T&E community that I mentioned previously. It came from DDR&E.

This next chart outlines the major phases in the DOD planning, programming and budgeting system, which spans a period of about 18 months or so to generate a single annual budget and corresponding five-year program. We have a much more complicated chart than this, but I decided to use this one.

PA&E is the primary actor in phases one and three of this process, and I'll be giving more detail on those. In the second phase, the services are the primary actors. That's where they take the guidance given to them by the Secretary, and the fiscal constraints that he has provided, and

try to come up with program proposals as to how they will meet the strategy and expend their resources over the next five-year period.

That culminates in the formulation of the so called Program Objective Memoranda (POMs) that are submitted to OSD for review at the beginning of every summer. The last phase, the detailed budget scrub, is done by our Comptroller, with augmentation from the Office of Management and Budget. That happens in the fall, prior to submission of the DOD budget.

Turning now to the Consolidated Guidance, a somewhat controversial topic, due to leaks in the press, I would first like to indicate that although PA&E is primarily responsible for it to the Secretary of Defense, other parts of the document are actually written by other members of the OSD staff. The parts on manpower, logistics, command and control, communications, intelligence, R&D are written elsewhere.

Also I'd like to indicate that the document is part of a process that involves considerable dialogue, interface with the services and the JCS. In fact, the JCS initiates the whole process by preparing a document giving their views on strategy and forces. An official for comment version of the CG was circulated to the JCS and services for their comments, and in many cases they reviewed different pieces of it as we were in the process of putting it together. Their views were either reflected in the document, or large disagreements were noted for the Secretary's attention. So it's not as though other people didn't have a role.

Under the second point I've outlined the primary objectives of the Consolidated Guidance. The first is where the document differs most radically from its predecessors, the Planning, Programming and Guidance Memorandum and Defense Guidance of times past. The CG includes a statement of the fundamental rationale for the defense program; the other documents did not.

In this context, in support of that fundamental rationale, we did a number of long-range force assessments of various aspects of the DOD program, with emphasis on future capabilities running out to the middle of the 1980's or early 1990's in many cases. Where appropriate, these analysis looked at U.S. forces in conjunction with those of our allies. And it was appropriate in all instances, in the work that we did in Europe Division. In that work, we got into a very fine-gained examination of future capabilities based on equipment inventories, by country and unit for ground and air forces well out into the middle 1980's. This was a very detailed process.

The guidance that we gave the services in the Consolidated Guidance was based primarily on correcting the more glaring deficiencies that we found in the evaluations that we conducted. We're not apologizing for the content of the Consolidated Guidance. But we do hope to do quite a bit better next year. In the Europe area we're going to try to supplement the largely static analysis that we did last year with some dynamic analysis. We also hope to cover areas like command and control, intelligence and electronic warfare a little bit better than we did previously.

In regard to relating strategy, forces and fiscal guidance, there are mixed views of the adequacy, of what's been done. A number of people think that the strategy we have today is underfunded, and there are some solid arguments that have been made in that regard.

With regard to the last two ticks there, I think we succeeded in raising the major issues to the principal decision makers. There has been Presidential involvement already. We look for more this August. Secretary Brown has been intimately involved at all stages where he should have been in the process of generating the guidance. He's already adjudicated a number of issues and formulated additional guidance.

Finally, I think the Consolidated Guidance definitely provides a much better baseline than we had previously for evaluating service program proposals. It will undoubtedly do the same in the budget review this fall.

In conclusion, I think the Consolidated Guidance does pro.ide better Secretary of Defense direction to the serivces, stating what he wants them to do, but at the same time preserves a substantial role for them.

I would also like to discuss the program review phase which we're engaged in this summer. The primary objective here again is to get the larger issues and resource trade-offs out of the way ahead of time, so that we can leave the Comptroller and OMB folks with the reasonably sized budget scrub requirement in the fall. We failed in that frequently in the past, and ended up trying to leave them with a requirement to get five, six, or seven percent out of the DOD program in the last couple months. That gets to be a pretty tumultuous process. This year we're trying to hold

the size of the budget scrub down to the two percent level, which would be two or three billion dollars. That means moving more of the tumult and controversy we used to have in the fall, into the summer.

The process through which all of this gets done is that we write issue papers on various topics for the Secretary of Defense and he decides the issue on the basic of arguments in--or about--those programs. Examples of the issues raised: regarding force levels, we're talking about things like number of navy carriers, total number of Army divisions, total number of tactical fighter wings, things like that.

A force mix or structure issue is one where we're looking at the subdivisionswithin our forces. The mix of heavy and light divisions within the Army, large or small carriers or VSTOL carriers for the Navy, active-reserve mix, mix of combat and support forces.

With regard to reinforcement rates, it's very important for the European evaluations that we look at the mix of airlift and sealift and prepositioning for our rapid reinforcement of NATO. For modernization issues, a typical example would be do we buy the ATCA to modernize the air-tanker fleet, or do we buy reengineing for the existing force of KC-135's.

Substainability and readiness issues are written by the manpower and logistics people. Examples for substainability are things like changing rates of consumption, or numbers of days of supply. In readiness they look at things like operational readiness status of aircraft, elimination of major maintenance backlogs, training and exercise programs. There are,

in addition, issue papers written on R&D, C^3, intelligence, as well as the ones I've indicated. I wish to emphasize that the services are allowed opportunities to comment on the issue papers before they go to the Secretary of Defense.

Those comments are incorporated, or where we don't agree, again, the disagreements are made known to the Secretary of Defense and he's aware of the service's point of view. Thereafter we have two rounds of decisions--first a tentative round, which is later remanded to the services and they have an opportunity to arque over decisions about which they disagree; and then a final round of program adjustments before we turn the whole thing back over to the services for detailed budget preparation before the final budget scrub in the fall.

This next line deals with another form of PA&E activity, and that is in regard to the weapon system acquisition process. The ASD, PA&E is a DSARC principal, and most of our R/S/I work comes in this context. That's done largely by the force teams, with augmentation from our cost people, and some pressure from those of us in the Europe Division--with that collective group always nibbled upon by Bob Komer to make sure that we do what we're supposed to do in this area. He is a very strong, and I think a very valuable influence in that regard. If it weren't for him we would do a lot less, and he really contributes a great deal just by force of personality. Those of you who know him know what I mean.

The second point refers to the actual application of OMB Circular A-109 and the DOD R/S/I directives. And with the third bullet, we captured

one of the primary, independent contributions of our resource analysis people, who run directly for the chairman of the DSARC, the Cost Analysis Improvement Group. The CAIG, as we call it,is charged with generating independent cost estimates for weapons systems at various stages in the acquisition process. This doesn't make things cost any less, but it certainly gives us a better idea as to what the actual costs are going to be early in the process, and it does eliminate some of the problems we used to have with major cost overruns. We also help plan and review the operational testing, and we try to insure that all viable system alternatives are included and evaluated in the acquisition process.

That concludes the portion of my talk on what PA&E does. What I would like to do now is talk about R/S/I a little bit. I'm a relative newcomer to this field, and most of what you're going to here is my own observations. First of all I'd like to talk about what we see as the R/S/I opportunities. These begin with the elimination of redundancy. It obviously makes no sense to have several countries developing the same type of equipment and thus squandering the large, front-end R&D money that gets involved there.

In logistics, an example would be having common fuels, and thereby being able to eliminate redundant pipelines. On economies of scale, production economy is just a matter of applying micro-economics, although there are some complications there that I'll talk about a little bit more subsequently.

Another economy of scale is the reduction of spares per unit that one gets if one add units of the same type to a force. There are obviously major savings that can be made in that respect. They can be quantified fairly readily.

In training, we're trying to make sure we get full use of training equipment, particularly expensive equipment like simulators and the facilities in our training areas.

Concerning flexibilities, I've indicated some of the expected benefits from R/S/I, and what all of them have in common is that they are obviously "nice to have" but are extremely hard to model quantitatively.

Finally, concerning the last bullet, there are people in the Army, and perhaps in the GAO, who disagree with us on this, but we think that there's a lot more gold to be mined in the hills of host nation support. From our point of view, a much harder look has to be taken at that area to see what can be achieve.

I would next like to talk briefly about the primary difficulties we see in our R/S/I analysis. First of all on the cost side, we don't know much about allied production systems and processes. Things like plant loading and overhead rates must be known about our own production processes in order to make accurate cost estimates. It's very hard to generate that kind of information on allied facilities.

Obviously, fluctuations in currency and exchange rates, especially at times like these, can make a major difference in costs. Predicting such effects in advance, with any accuracy, is difficult. Engineering, tooling and one-time changeover costs can also be pretty large, and they're also difficult to quantify.

And last, achieving economies of scale is not a smooth, continuous process in all instances. There can be major discontinuities in that process as a result of plant and labor considerations. Those have to be taken into account also.

Troubled as we are on the cost side, we're a little bit worse off on the military effectiveness side. First of all, the current effectiveness models concentrate primarily on combat effectiveness, which they tend to measure pretty directly. To some extent they do reasonably well with logistics, maintenance, substanability, and things of that nature. Where they really fall down, however, is in measuring things like maneuver, mass, flexibility, better command and control, better intelligence, and all those nice-to-have R/S/I things. We just don't have adequate models to take into effect those things with the synergism that is entailed.

Second, with regard to the uncertainty of results; in general, war gaming and simulations done in the defense world do not produce point outcomes. Even if you have an expected value model for a single case, good analysis would show you quite a spread depending on data and assumptions and things like that. This is true for all the modeling work that we do in PA&E. The program here comes from interpreting the results. There can be major disagreements, both as to the assumptions and data which we're using for inputs--not to mention the accuracy with which the model being used reflects reality.

The bottom line of all of this is that it's very difficult to generate convincing, analytical cases for rationalization and standardization in particular. It's a little bit easier on interoperability, but not much.

Next, I've indicated some of the impediments that we see to R/S/I. Most of them are self explanatory, except for the first one, which I will get to in a second. But basically these are well known and will be covered by others today, or they've been discussed extensively in open literature elsewhere.

With regard to the first point, actual versus perceived utility, what I'm getting at there is the difficulty of convincing the operators of standardized hardware that the alliance-wide benefits, which they really can't see, outweigh the disadvantages they see with regard to their operating a particular hardware item. It can be a very difficult process getting that case across.

Again, these impediments are pretty well self explanatory and have been noted before. They are not very amenable to analysis, and particularly quantitative analysis of the type that we like to see in PA&E. However, to the extent that one can pick up on these types of things, as one does a study of R/S/I, or an analysis in that area and give us some reasonable observations on which we can act later on, that is a very useful thing to do.

I would now like to give you a single example of a recent analysis that we think is of reasonable quality in the R/S/I area, specifically the interoperability area. The study was done by the Air Force Studies and Analysis organization, General Welch's people, who do high quality work in all cases I'm familiar with. Stage B Cross-Servicing for aircraft refers to having the ability when one lands at a foreign air base to rearm and to get some minor maintenance done; State A is for refueling; and Stage C, is where we're looking for more sophisticated forms of maintenance.

The study scenario, as indicated on the slide, relates to NATO's Center Region. The model used was a large-scale, computerized simulation that the Air Force uses for many air-to-air and air-to-ground interactions. Concerning measures of merit, they used three which we think are reasonably instructive. And the results were quite promising: increases of up to 40 percent in NATO sorties generated, increases of up to 50 percent in armored vehicles destroyed, and at least a marginal benefit in the area of reducing our own vulnerability to Pact air.

These results, as I indicated, suggest a high pay off for Stage B Cross servicing, which was nice to know because everybody was planning and charging in that direction anyway.

I would like to conclude this short presentation with some general observations that apply to the R/S/I analysis field as it exists today.

First of all, I think that the problems and the major issues here are pretty well identified, and we have a surfeit of people, like me today,

who can talk in platitudes and generalities about all this. What we really lack is specifics, and people who can get closer to the problem and can generate real solutions that will be of use to those who have to actually produce the hardware or operate it once it gets out to the field.

Too often we find the analysis that we do ourselves, or that other people do for us, by contract, ends up giving us a long laundry list of high-sounding recommendations that are very hard to implement, and frequently don't have an awful lot to do with solving the real problems. And study money being very short, we don't intend to pay for any more of that sort of work if we can identify it in advance.

The next point is that rationalization and standardization are particularly tough for political and other reasons. Real rationalization implies almost a cultural change. You have to convince the Army commander that he can really rely upon Germans driving his ammunition trucks. That's not an easy problem. Much more difficult than that though, is convincing the British that we don't need a big chunk of the Royal Navy nearly as much as we need a couple armored divisions added to the British Army of the Rhine. That's a problem with force rationalization that we'll probably never get solved. That doesn't mean we shouldn't keep pushing on rationalization, but I don't expect us to succeed overnight.

Real standardization, of the type where everybody is using the same tanks, German tanks, say, and British mortars,and U.S. anti-tank weapons, and we're rigidly applying the two-way street philosophy in procurement, is also a long way off. As I see it, it might be reasonably easy, not easy but relatively easy, to strike an equitable bargain at the international

level on distribution of industrial effort in that kind of exchange. But trying to apply such a solution nationally is really very sticky. There you're talking about some segments of the defense industry doing extremely well while others die off completely.

So there are major barriers in that area that will continue to obstruct progress. The only point that I would make there is that means we've got to get in early on that type of thing, and really work hard on it at the very early R&D stage.

The next point concerns how the U.S. Government is organized for R/S/I. Such effects having sort of grown like topsy in various areas, what we have not is pockets, small pockets of people who know a little bit about the subject, and can talk about it in generalities. But in no single location do we have an organization that's charged with doing this kind of work, and no other work, and is uniquely responsible for it.

I think attainment of that kind of critical mass ought to be a primary objective of the government, so that we can actually have some group of workers who can do this sort of work for us. And I know PA&E is a long way away from getting that kind of staff put together. I have six people total, and I have parts of three of them doing R/S/I work. Maybe a quarter of my staff's effort is going into such tasks.

I'm talking about a much larger effort than that. I'm not sure how OSD or DOD or the rest of the government can organize such a group, but I do know that its lack is a major problem at this time.

Bad as our US machinery is, the NATO international machinery is quite a bit worse. What that does for me is it underlines the requirement for some of the institutional reforms that Bob Komer and others are pushing in the Long Term Defense Program. For example, we need an Assistant Secretary General for Logistics in the NATO organization, and we need a Consumer Logistics Agency. We should also implement the PAPS system for weapon system acquisition. We should improve as much as we can, at all levels of the NATO staff mechinery, the analytical and programming capabilities. These are very poor right now.

Finally, in response to the general R/S/I challenge, I'm sure that I sound pretty negative about a lot of this, and I'm really not. I'm just trying to be as realistic as I can. I'm a relative newcomer to the field. Things may be better than I presented them here. And I think there's a great deal of interesting, analytical work to be done in the R/S/I area, and there's a great deal of payoff for U.S. and for our NATO allies generally to getting it done better. I'm just trying to point out, so that we don't delude ourselves about all this, that a lot of the easy part of the task has already been done. We now talking about much harder problems and much harder analysis than had been done in the past, and <u>that's</u> the <u>real</u> challenge. And that concludes my presentation.

INTRODUCTION OF DR. FRANK KAPPER BY

DR. JOHN BARMBY

Thank you, Mike. Now, as you're aware, we have a question period at the end, so if you have questions of Mr. Leonard, there's a little time at the end to take care of that.

Our next speaker is Dr. Frank Kapper, and at lunch time I knew we'd have a hard time getting him here. I should have known that anybody who joined the Marines at age 15 would not be able to handle a beer. When he came back from the Marines he went with St. Louis University, and like many analysts he got another graduate degree in the hard sciences, in chemistry, and went on and got a master's in psychology, and a doctorate in quantitative methods.

Initially he started out outside of the Defense Department--school teacher, management consultant, then in '63 he saw the light and joined MITRE to start working on defense problems. For a while he was at Strike Command as the Chief Scientific Officer down in Florida. After a tour over at Shape Technical Center, he came back to Air Force Headquarters.

Five years ago he went to the Joint Chiefs of Staff to be a scientific advisor to the Studies Gaming Agency. Now, people have heard about PA&E and the other groups, but SAGA is not that well known. The work they do is held a little more closely. We are fortunate that he's going to be able to tell us a little bit of some of the things they're going in particular.

Now, Dr. Kapper's talk is about "Defense Resources of our NATO Partners."

DEFENSE RESOURCES OF OUR NATO PARTNERS

DR. FRANK KAPPER
SCIENTIFIC AND TECHNICAL ADVISOR
OJCS, SYSTEMS ANALYSIS AND GAMING AGENCY

Thank you very much. I had anticipated we'd have a front projector where I could throw slides on and off and point to them, if you will and had originally started out with about 75 slides of which I'd intended to use about ten, to twenty depending upon the conversations and the presentations made earlier this morning, in addition to Mike Leonard, my predecessor here.

But any way, what I'm going to do is try to use as many slides as possible to discuss my subject. I went through them very quickly, and pulled as many out as I possibly could, where they duplicated information presented earlier, so please bear with me and I will try to go through as many of the ones that are, you know, just there for visual effects as possible and hit the other ones now. Okay.

I need some operating instructions. How do you get the first one on?

Projectionist: I don't have them yet, sir.

Dr Kapper: Okay, in that case, let me give you a quick overview of my presentation while we are waiting. What I'd like to do is talk a little bit about the basic differences in the forces, force structures, weapons, et cetera, within NATO. I would like to identify some of the sources that we have available to us as analysts, and I would like to encourage all of you to take advantage of some of those data sources if you will.

Now, the speakers this morning, as well as Mike Leonard just preceeding me, talked about many, many things in terms of, where we should be going, what our problems are going to be, and so. Now, the basic thrust of what I'm going to talk about here is the critical importance of the data upon which NATO-oriented decisions are made, and like it or not, it's not as good as what it should be, but thanks to several dedicated people, we are beginning to have some standardization in this important area.

I would like to encourage all of you to participate, use, and be a critic of the existing data bases, sources and related"things". Now, decisions are based upon many inputs usually from a variety of sources. Included in these, obviously, are perceptions of the relative threat, estimates of military and related capabilities between potential combatants, et cetera. Now, do I have slides up here now? Okay.

What I thought I'd do initially here is just start off and give you a quick idea of where I'm coming from. First off, I'm from the Studies, Analysis and Gaming Agency. Within the Joint Chiefs of Staff you have the typical Joint or General Staff organizational structure. For example, J2 which is the intelligence, or Defense Intelligence Agency in this case. You have the operations, logistics, policy and plans, Directorates and the Studies Analysis and Gaming Agency. The dash lines are, to the Defense Communications Agency, whose field element, and Command Control Technical Center, provides all of our data processing and other types of support, in addition, of course, we have the DNA or Defense Nuclear Agency.

Next slide, please.

Now our charter, and I'm doing this quickly to give you an idea of what we do, is to prepare studies and analyses of forces, plans and strategies, for the Chairman and for the Secretary of Defense, the NSC, and the President.

We conduct war games and political military simulations, it's usually a at the senior level, and we're involved in improvements of models, techniques, and procedures.

Next slide, please.

Now, what are some of the major problems that we as analysts face in this rationalization, standardization and integration business. Well, number one, and I think the most important, is the lack of communication between the key parties involved. And we're not really in those cases communicating to the extent that we have a common understanding from analysts to decision maker, what the objectives, strategy, needs really are. This issue has got to have more attention paid to it if we're going to do anything constructive in the present of future.

Obviously we've got many data problems. You can't make decisions unless you have some kind of data and information upon which to base them. As you know, such information may be strictly seat of the pants experience, but that is one type of data and that may be all you have. And if you don't have anything else, that's what you're going to rely on.

In addition we have, you all know, some problems in the models that are being used, we have other uncertainties as well.

Next slide, please.

One of the last problems, I'll just zing in on these, is where we still lack a comprehensive theory of combat or war. It's also very easy to do a lot of strategic war games because we've never really fought a nuclear exchange from heartland to heartland. We have a lot of experience in terms of theatre combat, though.

Next slide.

Okay, now what are the factors that influence decision makers? Whoops, we,ve got to slides on there. Okay, this is fine. The first one is, the policy/decision-maker's dilemma. Namely, which constraints are most important to me, as a policy formulator or a decision maker. And you can see them all, and you're familiar with them all. We've already talked about a great many of them in a political and legalistic, and to a certain extent in a budgetary, fashion this morning. But there are others as well.

Next slide, please.

Now, I tried to show on this slide the same kinds of points made on the preceding, except what I'd like to do here is show the relationship of studies and analysis -- and analyses, if you will, to the decisions that have to be made and to the policies which must be formulated. Here is just one of the many inputs that have to be considered. And when you consider that, that point, there are all these other considerations that which must be weighted. But you have data that is not only used for special studies and analyses, but it's used for a lot of other things as well.

Next slide, please.

Now, in talking about what our resources are, and the data base that I will be discussing shortly, you're really talking about these four categories of information. Now, in terms of the basic sources of information, -- next slide please -- you have the following publications. Now, this list is not meant to be exhaustive; but it does not have the principal sources of data .

For example, just in the one document that we identified earlier by General Heiser--he was talking about the fourth report that was put out by Secretary Brown back in January--there are 50 separate, tactical doctrine manuals in naval warfare alone. So what I am saying is that if you look carefully, there is a lot of information around. A lot of it is excellent, some of it is not so good either.

Next slide, please.

Within TOE and inventory, you have the following sources. Incidently, you have available and just published, volumes one and two of the NATO Force Planning Data Base; Volume One is a description on use, and Volume Two is the data, the index and Volume Three, which I didn't bring, is classified which I would suggest that you take a close look at however.

Now, in addition to the other items mentioned/noted, such as the Janes series of publications, you have in addition, for example, the Military Balance Report. This particular one is put out by the Air Force Magazine, and what it really is, is a take-off from the International Institute of Strategic Studies (IISS) reports on the world military balance. Those are excellent sources for analysts to be familiar with.

And finally one other item, again these are strictly examples, this is on the Warsaw Pact armies. It's a publication put out in Vienna, Austria by Carl Ueberreuter Publishers. It's well worth looking at.

Next slide, please

Okay. These are just a quick potpourri, if you will, and again I'll have copies of these made available for the proceedings so you don't need to worry about specifics.

Next slide, please.

Okay, the sources, obviously, you could have named them off just like that yourself. There are many others, in addition.

Next slide, please

Okay, now I'll get into one of the subjects I'd like to discuss in greater detail and that is the DOD Force Planning Data Base.

Next slide,please.

Okay, the background is this: the DODFPDB, as the DOD Force Planning Data Base, arose from the"NTFAM-III" memo, signed off by Secretary Schlesinger some time ago, and responsibility for its development was passed to PA&E, then called DP&E, to develop the necessary data base for NATO and Warsaw Pact Forces. And its characteristics are shown here.

Next slide, please.

Incidently, what I should mention before I press on to these other things, is that there are other official data bases as well on the NATO and Warsaw Pact forces. One is the one that is held by the International Military Staff at NATO headquarters, another one, an unofficial one, is that which is held by the Intelligence Directorate for SHAPE Headquarters.

Anyway, the coverage of the NATO Force Planning Data Base is as shown. It covers all the various kinds of forces, for PACT, NATO, and the Middle East, and it covers from 1977 to 1982, and it's essentially going to be a rolling type data base.

Next slide.

Trying to keep several years in advance.

Now, this is the content. If you look at the inner circle, we're talking about the units, military units, combat units. And again special capabilities that they may have, the status in terms of readiness, et cetera, types of ammo, equipment, personnel, their peace and war time locations, and also their origins, such as by nationality, service, et cetera.

Next slide.

This is an example of an order of battle information that is contained in the NFPDB. And I think if you'd just take a quick look across the top, you will find at what level of command, the units' name, its ID, you know all the way across in terms of its personnel.

Next slide.

All right, this is again sample data, but it goes into the equipment characteristics contained in this data base.

The point that should also be made is that the weapons scores, by weapons effectiveness index category described in that areas noted below, are really extensions to the NFPDB data base. The data base really is the numbers, locations, et cetera. These other things are an extension of the data base, and are not really in the same category as the above lines, if you will.

Next slide, please.

This again just gives you a quickie sample of the types of data available in the NFPDB. The next example of this perhaps is good.

Next slide, please.

Now, there are a variety of sources for all of the data that are used, and as you can see, at the Command and Control Technical Center, which provides the input from the DIA on the order of battle system that they have, we in the Joint Chiefs of Staff input force information. This is a Status of Forces Report which is current, and is updated daily, for example. And each of the services have their own "inputs," if you will. If you will notice, then who puts it in is as shown.

Next slide, please.

Now, we obviously have a number of problems in the data base field, but it's very important that we begin to address them. These are the key ones, and it's not really a data explosion or information explosion. It's a flood that can choke you because it just rises so fast, you've got to paddle quick just to keep from drowning in data.

Okay, next slide.

Some of the key decisions relative to this that were made early on is to advertise it, institutionalize it, and organize it, and those are some of the subsets therein.

Next slide, please.

Okay, the data is available to all DOD agencies, that's the type of form, and if you have any info, contact Jim.

One thing he did say, he said, " Frank, I'm going to give you these two copies of this volume one and two, and let the people know all they need to do is call me and I will give them these two volumes. Because these are unclassified." So you might make a note of that. And I think Jim works for you, doesn't he, Mike? Okay, next slide, please.

What I have next -- I hope this is right, as I say I was planning manipulating the slides from up here, are a series of typical examples taken from the NFPDB proper. What this basically shows is just some of the attributes that are available on the Forces on Weapons of particular services, and I think there are 27, or thereabouts, probably more.

Next slide, please.

One of the key topics that is important in R/S/I and one which was discussed earlier this morning, was the subject of logistics. One of the things that this data base does contain is information on the lines of communication (LOC) in Europe, and I don't need to mention the importance of France, it's already been done several times.

But as analysts, you might, when you're looking at R/S/I and its impact, you ought to consider doing your analysis with and without France, and see what it buys you. It's rather interesting. That has ramifications, politically, militarily, and economically.

Next slide, please.

Now, a little more detail on what is contained in a specific transportation network is as shown. And if you do an analysis in this area, and you want to figure out what the dickens a uniform flat car and non-uniform flat car buys you or doesn't buy you, take a look at some of the information that's available already.

Next slide, please.

Again, this is just an illustrative table, it's not the classified data, but it just, if you will, shows the unit -- it's the type of help that you can get, for example, on a country basis, of people by service and location by country. Now what that really says in that case is how many military and civilian people you have in for example, Costa Rica or in Belgium or whatever else it is.

Nest slide, please.

Again, this is non NATO, non-U.S. - NATO military and para military unit manpower by service and location by country. That means, you know, by sovereign state, so it's all the Belgians in Belgium, if you will. The Belgians in Germany.

Next slide.

Again, this is a count. It goes into all kind of specific "beans", if you will, and I want to emphasize the importance here. We're talking about data that can be used immediately for static types of analyses, which we do many of, but which also serve as an input to your dynamic analyses where you run your models, simulations, and so on.

Next slide, please.

Okay, these are the sources, the users, and the uses of this data base. About two years ago we had a DOD Data Base meeting, and we were all finally talking to one another and the way in which it started off was that the Deputy Secretary of Defense was irritated as he can be with models, studies and analysis and their results. He was irriated because what he

got was ten different answers, all different, in terms of recommendations, for any particular problem he's got to solve.

And somebody said, well, you know, if you've got ten models, and you've got ten different data bases, you've got 100 potentially different answers or solutions. The same person suggested, that perhaps if we cut down on the data bases and have one standard force planning data base, we could reduce the problem by 90 percent. And that's true. I know, I was that person.

Next slide, please.

Okay, well where are we and where do we think we'll be going. All right, this is where we are right now on the PA&E (NFPDB.) Its as shown on this slide, and covers these forces. That's basically where the information is, in terms of 1982 Forces. However, projection-wise, we're not as far. There is some logistics information, but again it's limited. And in terms of establishing some standards, regarding scenarios, assumptions, whether, terrain, et cetera, these are in process of being developed.

Next slide, please.

We've already covered this in terms of present, the future expansions are as noted.

Next slide.

Okay, now what I'd like to do is talk about is another specific extension to this DOD data base, and it's a sub-set, and it will be incorporated. It's the Weapons Characteristics Performance Data Base on File.

Next slide, please.

The basic goals of this additional data base are to look at compatibility, sharpen up our data accuracy, make them more consistent and minimize duplication.

Next slide, please.

I'm going to go through this quick because I know some of you wonder, well, what's the relationship of the theatre combat models I have, and the data bases you have. Well, this covers that question very quickly.

Next slide, please.

Basically, we're going to talk about including this type of data in terms of the intelligence, working from the left to the weapons performance characteristics, trainings, order of battle, et cetera, and then we're going to include, if you will, other special information. Next slide.

The data that is used by theatre combat models, for example, falls into two categories. Now, this is really taken from one of these models and that's really the VECTOR Two model, and if you take a look at what is required in terms of low level data, you'll see that almost 90 percent of it has to do with weapons characteristics.

Due to some technical difficulty the remainder of Dr. Kapper's talk was erased. We extend our apologies to Dr. Kapper and to those who are now unable to read the balance of this discussion.

NATO ORGANIZATION FOR IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

MR. ROBERT CALAWAY, ASSISTANT
FOR PROGRAM PLANNING
OUSD/RESEARCH AND ENGINEERING

Good Afternoon -

I'm pleased to have this opportunity to review some of DOD's recent activities related to the development of a weapons acquisition planning system for NATO. Since last fall I've had more than a casual interest in the subject as I have served as the Chairman of a CNAD Ad Hoc Study Group attempting to develop a Periodic Armaments Planning System. I have also served as the DOD Program Manager supporting Task Force 8 -- the rationalization task force which was one of this past years set of initiatives discussed at the recent summit meeting in Washington.

One of the consistent themes that we have followed in both the CNAD Study Group and Task Force 8 was that to be effective joint planning must start early. In short, Alliance members must "harmonize on problems, not solutions".

The following statement is, I believe, a good summary of our objective;

"Due to the increasing sophistication of modern weapon systems, it is becomming imperative that every opportunity be taken to make the most of the Free World's technical resources, through cooperative research and development between the United States and its Allies in order to reduce wasteful duplication of effort. For such cooperation to realize its potential benefits, a fully cooperative effort must be undertaken to harmonize national requirements in order to control, direct and conserve

those resources expanded for research and development. Only in this way can a suitable foundation be established to allow cooperative research and development programs with our Allies to develop."

Now this may appear to be an excerpt from a recent speech by Secretary Brown or Dr. Perry but it isn't -- It's a paragraph from DOD Directive 3100.4, dated 27 September 1963, titled "Harmonization of Qualitative Requirements for Defense Equipment of the United States and its Allies". It goes on to say ...

"While the end result of this policy is to obtain U.S. qualitative requirements which have been harmonized with those of selected Allies, it necessitates early cooperation with the Allies, continuing through all steps of requirements formulation, including rationale for the establishment of tactical concepts, roles and missions, supporting studies, and analyses."

Since that directive was published (indeed before as well) the success of long-range planning within the alliance has been uneven at best -- numerous processes and procedures have been instituted with the best of intentions but far too little has been accomplished in terms of an enhanced military posture vis-a-vis the Warsaw Pact as a result of these efforts. Indeed, the opposite has occurred -- In Europe we and our NATO Allies are faced with the growing military and industrial strength of the Warsaw Pact and we see many of our traditional advantages disappearing.

However, I believe this situation is being widely recognized on both sides of the Atlantic and is viewed as unacceptable. Recognition of this "threat imperative" resulted in the set of major initiatives for long-term NATO defense planning and cooperation proposed by the President at the May 1977 Summit. As you know, these initiative were further developed during the past year and many of the resulting recommendations were endorsed at the Summit at the end of May 1978. The growing threat also resulted in renewed interest throughout NATO in developing a better, more effective means to couple national military needs to Alliance military needs before national programs progress to the point that harmonization is difficult or impossible.

An example of the increased awareness that we must make better use of our collective resources was the CNAD action in 1976 which established the Ad Hoc Study Group which I now Chair. Some constraints were placed on the Study Group in its Terms of Reference -- noteably to continue to recognize the sovereignty of nations in equipment decisions; to avoid a major reorganization of the CNAD and its associated structure; and provide justification for any increase in the International Staff. With these three exceptions the Study Group was given a pretty free reign to examine the problem of joint planning and propose solutions.

Last fall the Study Group proposed that a procedure should be established within the CNAD structure to periodically "audit" Alliance progress toward cooperative weapons acquisition.

If successful this procedure could represent a major step toward harmonizing weapon system acquisition within the NATO community. The NATO Armaments Planning Review, generally referred to as NAPR, is a

reporting and analysis procedure intended to identify opportunities for cooperation which exist within national weapons planning systems and also point out divergent plans for systems that are to be acquired.

The core of NAPR consists of two inputs: one is a compilation of national armaments re-equipment schedules; the other is the identification, by the NATO military authorities, of equipment categories or mission areas where harmonization of equipment is considered either essential or desirable. The re-equipment schedules, which principally cover the coming five years, provide an overview of what equipment is to be replaced by which nations during the medium term. Attention can then focus on the categories of weapons to be replaced which the NATO military authorities have identified as critical for harmonization. This analysis will then highlight the best opportunities for achieving a desired degree of standardization or interoperability -- It also provides a tool which points up where problems may lie in future. These results, whether good news or bad news are supplied to the CNAD, or individual Armaments Directors as appropriate.

The essence of the NAPR procedure, therefore, is that member nations and NATO will have laid out before them well in advance of the time when action is needed, a broad overview of opportunities for achieving harmonization of equipment.

We are not in the middle of a CNAD-directed trial of NAPR procedures. As you might expect the challenge of superimposing a common concept such as this on cultures which have developed over the years within the groups and subgroups, committees and subcommittees and panels and subpanels of the NATO organization is not easy. We are, however, making good progress and

expect to complete the trial next spring -- with every expectation that NAPR will become a permanent source of feedback with which to monitor the progress of harmonization.

The second phase of the Study Group began last fall when I became the new Chairman. The NAPR trial was initiated to provide a measure of the value of an "audit" procedure to improve weapons cooperation - the Study Group then began to focus on the potential gain realized from a structured approach to the early phases of a weapon system life-cycle. We all agreed that a major cause of past failures in joint weapons programs was the inability of nations to start cooperation early enough in the acquisition life-cycle. The problem was where and how to start within the constraints of our Terms of Reference such that some new ideas could evolve.

We now have a draft planning framework which I hope to present to the CNAD for approval and test this fall. It is currently being reviewed by the participating nations so I am unable to provide you with details - however, broadly speaking the approach we have taken closely parallels the philosophy of A-109 -- First the NATO military authorities and national military staffs will be encouraged to develop a mission need statement based on a perceived operational deficiency. This statement is then refined by national experts meeting on an Ad Hoc basis under one of the major groups within NATO. Their first task is to place some technical, financial and schedule constraints around the military input -- thus generating a document closely resembling our Mission Element Need Statement. We are tentatively calling this document and "Outline Staff Target".

Those nations which wish to pursue a solution to this need then remain within the subgroup and begin to explore alternative solutions - the NATO equivalent of our Phase 0 as defined in DOD Directive 5000.1.

The next milestone is the national approval of a Staff Target and initiation of a joint program to develop a system. This is roughly equivalent to our Milestone I and represents the first significant commitment on the part of the participating nations.

A third milestone occurs with national approval of what we have termed a Staff Requirement. This is basically a detailed design specification and Development plan such as we would develop during our Phase I. The national approval can be equated to our Milesone II and signals the initiation of full-scale development.

The balance of the proposed framework provides a reporting process tailored to the status of the weapon system and the needs of NATO and national planners. It is expected the NAPR will evolve such that it will provide this function.

This process may not sound innovative or dramatic but a significant amount of energy was devoted in several directions to get this far. For example, we had to set up a subgroup on Terminology to try to sort out the mass confusion surrounding the terms used in the planning process by the numerous NATO, national and other multinational groups. This was needed before we could even communicate among ourselves reasonable understanding -- of course, the terms had to mean the same things in English and French.

We found that the generation of deficiencies by the military authorities needed a common mission basis before the system could effectively operate --

we are, therefore, struggling with the development of a NATO mission catalog similar to our own mission area descriptions.

We even had significant debate surrounding the definition of the various phases of the life-cycle of a weapon system and spent the major portion of a two-day meeting on that subject.

Combine these efforts with the normal "dotting of eyes and crossing of tee's" that is required to obtain fifteen-nation agreements and you can see why advances which seem small to you appear significant to me.

I believe, however, that we are making significant progress and efforts such as I've just described shows that we are committed to effective participation in Alliance defense, doing our part as our Allies do theirs. This commitment is being manifested in a number of other ways throughout the DOD, State Department and other agencies. A few recent steps taken within DOD should help you realize how serious we are.

First, in March 1977 DOD Directive 2010.6 was issued covering the Standardization and Interoperability of weapon systems and equipment within NATO. It says that equipment procured for U.S. Forces stationed in Europe will be standardized or at least interoperable with that of other Alliance members. Achieving this will be a DOD priority effort which begins at program initiation and continues throughout the life-cycle.

Second, about a year ago Secretary Brown appointed an Advisor to the Secretary and Deputy Secretary of Defense for NATO Affairs. The incumbent in this office also servies as a Principal of the DSARC to help ensure that NATO R/S/I receives adequate attention throughout the weapon system acquisition process.

Third, DOD Directives 5000.1 and 5000.2 require that NATO R/S/I be considered during MENS preparation -- the earliest stages of a program. Very few programs will get far into Phase 0 without a NATO R/S/I Plan which presents the programs manager's strategy for obtaining the objectives of DOD Directive 2010.6

We can also point to the DOD's substantial involvement in all the NATO initiatives, the activities of the R/S/I Steering Committee, and the development of the Program Package concept.

— Last but not least the DOD support for the development of a NATO periodic Armaments Planning System -- gives me confidence that we will succeed in gaining acceptance of such a system and long term benefits will be realized.

Thank you.

CHRONOLOGY

Attempts at Generating NATO Requirements

Sep 1949: North Atlantic Council, at first meeting, set up Defense Committee, composed of defense ministers, responsible for drawing up coordinated defense plans.

Nov 1949: Military Production and Supply Board: established to promote coordinated production, standardization and technical research in the field of armaments. Reported to Defense Committee.

Dec 1949: Defense Committee meeting: agreed on strategic concept for integrated defense and on methods of working out a program for the production and supply of arms and equipment. Both recommendations approved by NAC in January 1950.

Dec 1950: Military Production and Supply Board replaced by a Defense Production Board with added task of increasing production and facilitating the joint use of industrial installations in the member countries.

1951: First attempt to reconcile NATO's military requirements with the economic and financial resources of member countries, ~~based on Three Wise Men's Report.~~ Main relevant point of report: defense must be built on a sound economic and social basis and no country should be called on to shoulder a defense burden beyond its means. Became basis for Annual Reviews, conducted through 1961; thereafter, Triennial Reviews. Temporary Countil Committee established in 1951. Responsibilities included submitting proposals for the reconciliation of military requirements, including arms and equipment, with the means available to NATO countries for defense.

1952: Production and Logistics Division established in newly-created International Staff. (In 1960 became Production, Logistics and Infrastructure Division; 1967, became Defense Support Division). Principal task is to promote the most efficient use of Alliance resources for equipment and support of its forces.

1954: Defense Production Committee established to supervise programs and other associated activities, in particular work on standardization and the exchanged, technical information.

1957: At heads of governments meeting, U.S. offered to make U.S. technical knowledge and experience available to further joint European weapons production. Resulted in HAWK and SIDEWINDER programs.

1958: Defense Production Committee became Armaments Committee. TOR included questions of applied R&D.

1959: NBMR procedure established. Intended to be flexible, the procedures could be brought into effect at any stage if a project already embarked upon by one country were selected as meeting a basic military requirement.

1960: Ad Hoc Mixed Working Groups, including military and civilian and operational and technical types, formed to seek projects suitable for cooperative efforts. Results included: Starfighter and Mark 44 ASW torpedoes.

1966: NBMR procedure abolished. Replaced by NATO Project System. CNAD established. CNAD a follow-on to Committee of Defense Research Directors, set up in 1964 to provide scientific and technical advice to feed into NBMR procedure. Committee's work helped research side but created some overlap between the armaments and the science activities in NATO. Problem explored by a special group set up by the NAC. As a result of the group's report, NBMRs abolished, replaced by Project System, and CNAD set up. Some of the old Ad Hoc Working Groups retained.

1971: More reorganization, after it became clear that CNAD had started off with a bang but had lost impetus. New approach designed to lay stress on priority items for cooperation, with heavy emphasis on standardization/ interoperability.

Col. McInerney's remarks were not available for inclusion in these preceedings.

CLOSING REMARKS

MR. HUGH STRAIN
MAJOR ACQUISITION SUBDIVISION
PROCUREMENT AND SYSTEMS ACQUISITION DIVISION
U.S. GENERAL ACCOUNTING OFFICE

Mr. Strain: Thank you, John, Mr. Staats and Mr. Stolarow had to return to the GAO headquarters on other business and they've asked me to close the meeting, which might have been a mistake because we're already overtime.

My first statement, I guess, is that I think our activities today are a fitting beginning to the 42nd meeting of the MORS, whose theme is coalition warfare. The program chairman, Al Lieberman, of the Arms Control and Disarmament Agency, has provided some preliminary data which is included in your program on page 91.

Yesterday when GAO had a special topic in the 41st MORS, someone asked rhetorically if we reported to the Congress, and of course we do. But in my own opinion, in a larger sense, we report to the public. So I think everyone who came to the program learned a new piece of information, and more importantly, perhaps, got a new idea. If this results in the analyses being more structured and comprehensive, perhaps even relieving GAO of the responsibility of devoting more of its resources to auditing this very important area, then the next result is more effective, efficient, and economic government. We'll have served the taxpayer well again.

"Thank you" to our speakers, to our moderators, and to you. The meeting is adjourned.

* U.S. GOVERNMENT PRINTING OFFICE : 1979 O - 620-167/44

GAO FORM 458 (REV. 4-77)
REPORT ORDER FORM

HOW TO OBTAIN GAO REPORTS

Copies of GAO reports are provided without charge to Members of Congress; congressional committee staff members; officials of Federal, State, and local governments; members of the press; college lebraries, faculty members, and students; and nonprofit organizations. The price to the general public is $1.00 a copy, except as noted. There is no charge for letter reports or microfiche copies of reports.

Orders for reports without charge should be sent to:

U.S. GENERAL ACCOUNTING OFFICE
DISTRIBUTION SECTION, ROOM 4522
441 G STREET, NW.
WASHINGTON, D.C. 20548

Orders requiring payment should be accompanied by check or money order made payable to:

U.S. GENERAL ACCOUNTING OFFICE
P.O. BOX 1020
WASHINGTON, D.C. 20013

To order a GAO report, please use the report number and date indicated in bold type after the title of each report.

REPORT NUMBER	DATE	REPORT NUMBER	DATE

Check appropriate box:

- ☐ Member or committee of Congress
- ☐ Government official
- ☐ Member of Press
- ☐ College library, faculty, and students
- ☐ Nonprofit organization
- ☐ All other (order must be accompanied by check or money order)

☐ My address is incorrect. Please change to address below.

☐ Please send microfiche copies—no charge

☐ Please add my name to the distribution list for the Monthly List of GSO Reports.

NAME:
ADDRESS:
CITY: STATE: ZIP CODE:

☐ Check this box if you no longer wish to receive the Monthly List of GAO Reports.

AN EQUAL OPPORTUNITY EMPLOYER

UNITED STATES
GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
U. S. GENERAL ACCOUNTING OFFICE

THIRD CLASS