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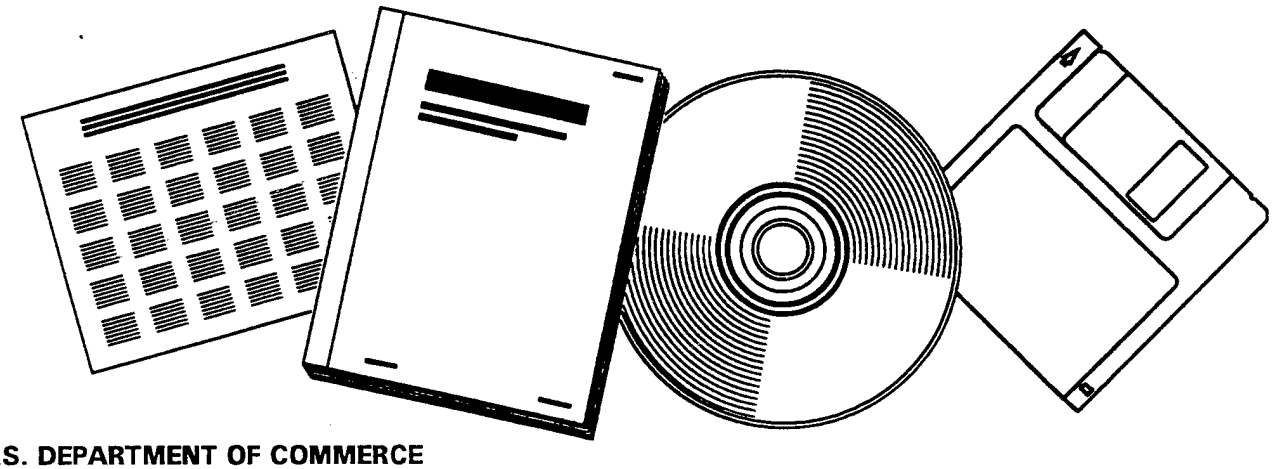
TRANSCRIPTS OF REGIONAL HEARINGS, SEATTLE, WASHINGTON: ANNEX L TO ADJUSTING TO THE DRAWDOWN REPORT OF THE DEFENSE CONVERSION COMMISSION

DEFENSE CONVERSION COMMISSION
WASHINGTON, DC

SEP 92



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DEFENSE CONVERSION COMMISSION

PUBLIC HEARING

September 24, 1992

Seattle, Washington

OFFICIAL RECORD OF HEARING PROCEEDINGS

COMMISSIONERS PRESENT:

David J. Berteau, Chairman

Carl Dahlman, Commissioner

L. Paul Dube, Commissioner

Robin Higgins, Commissioner

Douglas Lavin, Commissioner

Charles A. May, Jr., Commissioner

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TAPE TRANSCRIPTION

MR. HANLEY: I have a couple of administrative announcements before we officially begin the hearing.

First, this is a public hearing, and there will be a record of everything that transpires. We will have a transcript in a week or two, which is available to anyone who wants one. You can get in touch with the Commission either by phone or in writing, or just leave us a note now, or let us know sometime during the day that you want a copy of the transcript. We would be happy to send it to you. The transcript is also available in large print and in Braille for those who so desire.

We have all our commissioners here, with one exception. There are seven commissioners. Dr. Mike Knetter, who works on the President's Council of Economic Advisors, was not able to be here today.

We have, however, our Chairman, Mr. David Berteau, third from the left, as you look at the panel. And then, moving from right to left, Dr. Carl Dahlman from the Department of Defense; Mr. Paul Dube from the Department of Defense; Robin Higgins from the Department of Labor; and then, on Mr. Berteau's right, Doug Lavin from the Department of Commerce; and Charles May from the Department of Defense.

Without further ado, I will turn it back over to the Chairman, David Berteau, who is also from the Defense Department.

CHAIRMAN BERTEAU: Glad you mentioned that, Paul.

I want to thank you all for coming today. We have a list of witnesses that will carry us on through most of the afternoon. We look forward to hearing from each of you.

As you come up, we would ask that your remarks, if you have a written statement that you can give us a copy of so we can follow along, that would be fine. If you would try to summarize them so that we have a little time at the end for us to ask questions or maybe have an exchange a little, if you will, so that we can make sure we get the clear, key points out of that down in our notes and as part of our mental thinking as well as the record. We would appreciate that.

In view of the number of witnesses, we are going to try very much to stick to the timetable that is laid out here. I think we have essentially set aside about 10 minutes per witness. If you could leave us a couple minutes at the end so we can have questions, we would really appreciate that. For those of you who are going to have to wait patiently for your turn, I want to thank you in advance for doing that, and we really find that to be useful.

The Commission has three tasks laid out before it. Our charge is to review the impact on the U.S. economy of the defense drawdown, both in terms of people and in terms of dollars. Our charge is, second, to look at retraining programs for those defense folks, both military and civilian, who are affected by that drawdown. And our third charge is to look at the things the federal government can do to assist companies that are defense-dependent in becoming more commercially viable.

We are here in Seattle. We have been here for the last day and a half, and we have had a number of very useful meetings, both with companies and with people

associated with defense issues and defense conversion in a wide array of meetings, and we look forward to expanding upon that here this afternoon.

This is the sixth of a series of site visits and hearings that we have had around the country. We have been to Southern California, Texas, Missouri, Georgia, and New England, in addition to coming here to Seattle, and this will be our last. We will begin to start wrapping our work up and start to write our report and our findings and recommendations. We owe that to the Secretary by the end of this year.

With that, let me go ahead and offer, Paul, that we can start with the first witness.

MR. HANLEY: The first witness was scheduled to be Paul Knox. As you know, we saw him just a few minutes ago. He's not here yet. So let's start with the next one scheduled, which is Ms. Margaret Shield from Washington SANE/FREEZE.

CHAIRMAN BERTEAU: Ms. Shield, welcome.

MS. SHIELD: Well, thank you. I guess it's an honor to be the first speaker here today.

CHAIRMAN BERTEAU: Some would call it that, yes.

MS. SHIELD: I'm a member of the board of directors of Washington SANE/FREEZE, and we're a grass-roots peace and justice organization with about 22,000 members statewide. For the past six years, we've worked to encourage the State of Washington to recognize the extent of its economic dependence on military contracts and to take actions to reduce this dependence. We led the effort to create the Washington State Defense Diversification Program, of which Paul is a staff person, which was authorized by the state legislature in 1990.

During the years SANE/FREEZE has worked to promote economic conversion, we've seen a tremendous increase in public awareness of the impact of military spending on local economies and the need for advanced planning to prepare for the cancellation of a military contract or the closure of a base. And our work at the state and local level has made us very aware of the need for conversion planning at the national level.

The world has changed. The Cold War is over, yet too many remnants of Cold War thinking remain in our military budget. We need to completely reassess what our real security threats now are, what force size and weapon systems are necessary for an adequate defense, and how much money this will cost. We must also consider the other factors which contribute to national security, such as the strength of our economy and the well-being of our people.

The staggering size of the federal deficit and the tremendous need for greater investment in infrastructure, health care, education, and other domestic concerns demand that we make dramatic changes in national spending priorities. Yet any discussion of such a rational reassessment of our national security needs is derailed by the lack of a mechanism to deal with the necessary shift of resources and people from military to civilian projects.

The greater threat to our economy and our national security comes not from the prospect of big reductions in defense spending but the reluctance of the federal government to deal with the need for conversion. Without national strategies and funding

to assist displaced workers and affected communities, the cancellation of a procurement contract or a base closure results in layoffs that devastate families and pushes community social services past the breaking point. This is a burden our economy can ill afford.

But maintaining high levels of defense spending to build weapons which are not essential for our national security is no solution either. This kind of welfare for the weapons industry may be a short-term fix, but in a few years the same workers will be unemployed, we will have manufactured products which contribute little to our economic strength, and our national debt will be even larger. In addition, the skills of defense workers and military personnel will be wasted on unproductive programs.

Equally disturbing is the trend that, lacking any incentives to diversify or convert, many defense contractors plan to rely more and more on foreign sales of high tech military hardware to maintain their profits. The Bush Administration's recent decisions to overturn existing policy and approve the sale of F-15s to Saudi Arabia and Taiwan are a misguided jobs program. Such weapons sales will fuel regional arms races and set the stage for future military interventions.

The problem of how to scale down American military forces and reduce procurement of strategic weapons will not go away on its own, and it will not be solved by short-term, uncoordinated quick fixes. It is clear that the obstacles which prevent us from devising a national conversion strategy are primarily political. We face a national paralysis on this issue due to the lack of leadership from the federal government.

The United States requires a nationally coordinated, comprehensive defense conversion strategy. This can be an integral part of developing a sustainable economic base for the 21st Century. Many of the ideas in the economic adjustment packages passed by the House and Senate this year do have merit, but they are a piecemeal approach and are no substitute for a more comprehensive program coordinated by a national office dealing solely with the issues surrounding defense conversion.

In addition, funds appropriated for conversion should be overseen by an independent civilian agency. All money earmarked thus far for conversion has been doled out very slowly by the Defense Department. As Secretary of Defense Cheney has said, the Department of Defense was not meant to be a jobs program or social service agency. There are more appropriate departments which can oversee programs such as job retraining, community assistance, and targeted economic development.

Federal coordination of conversion efforts is essential to show the national resolve to redirect our priorities and to serve as a clearinghouse of technical information. But as each city or town knows best its own situation and its own opportunities for new enterprises, grants and economic assistance which emphasize flexibility and local decision-making would be the most effective.

Large corporations already have the resources to react to changing markets; therefore, federal technical support should be directed to small and medium-sized businesses which are trying to convert.

Worker and community assistance should be combined with reinvestment of military savings in new ventures that address the real needs of the country and lead to a sustainable economy, such as environmental cleanup technologies, alternative energy production, health research, and transportation systems. Support for such critical needs

would play an important role in revitalizing our economy overall.

I don't mean to imply that the task of converting our military economy will be simple or entirely painless, but a national conversion strategy will serve to minimize negative impacts and to maximize the new opportunities created by shifts in federal spending priorities. In the final analysis, it's a challenge we must face. Economic conversion is the appropriate response to changes in the world and is essential if the United States is to remain competitive in the global economy.

Finally, I just want to say that our government often appoints commissions to examine controversial issues, but all too often they do little to affect the status quo. And I hope that the members of this commission will use their creativity and their intelligence to make recommendations which break the gridlock on this issue and result in real relief for the American people who are still waiting for the peace dividend they deserve.

Thanks.

CHAIRMAN BERTEAU: Thank you, Ms. Shield. I should say that flattery will get you our attention, certainly. It is our intent, though, in all fairness, to try to focus very much on recommendations that are going to be implemented and that will have a practical benefit.

Let me ask you a couple questions, if I could, on the ideas or sort of the central theme of what you have there. If you put in place a national strategy -- and you used the word, I think, "nationally coordinated" -- I'm not real clear in my mind what "nationally coordinated" means. Do you mean run by a single agency, or do you mean getting acceptance from everybody involved in the nation before you sign up to it?

MS. SHIELD: I think there are probably a number of different ways that it could work, but one way could be to have an office, which is aware of all the efforts that are going on around the country to convert, which is in charge of seeing that funds appropriated to conversion are appropriately distributed.

We have found, with our state diversification program -- I think one of the strengths of the Washington State program is that we have an advisory panel which brings together all of the different interests in this issue, business, labor, government, community organizations, and I think that that, on the national level, would also be very important. So that's what I mean by "nationally coordinated," to bring together all of the different interests and all the different people with expertise on this issue to come up with the best approaches.

And then, as I also mentioned, I think that such an office could provide a lot of technical assistance to local projects. But, ultimately, there are so many differences between the types of dependence on military contracts that I don't think there is any one plan that could be adopted on the national level that could really be applied to each situation. There has to be some local control and local flexibility.

CHAIRMAN BERTEAU: So, in fact, you answered really my second question, because what I was going to ask is how you fit a national strategy with maximum local flexibility. Obviously, the flexibility has to be built into the national strategy. I assume by that you would mean that the strategy itself would not be definitive but would, in fact, be a framework rather than a set of definitive guidances and answers

where Washington would run what should be done.

MS. SHIELD: Right.

CHAIRMAN BERTEAU: With respect to the coordination role here, I think, from your answer, what you're saying is, this group or this central office would point out areas where something needed to be done rather than actually run them all. There are a wide variety of existing programs that are in place for retraining, for economic development assistance, and that sort of thing.

MS. SHIELD: That's right. And perhaps all that would be needed there was that the national office could provide some special emphasis to those already existing programs to focus on the needs of displaced defense workers. CHAIRMAN BERTEAU: All right. Any other questions or comments?

(No response.)

CHAIRMAN BERTEAU: Thank you very much. We appreciate it.

MS. SHIELD: Okay. Thank you.

MR. HANLEY: Thank you, Ms. Shield.

We do have Mr. Knox in evidence and he could be the next witness. Mr. Knox, as you know, is from the Washington State Department of Community Development. He was kind enough to coordinate the meeting of community leaders that we had this morning earlier.

CHAIRMAN BERTEAU: Mr. Knox.

MR. KNOX: I apologize for being late. In my typical way of parallel parking by Braille, I popped a nice sized hole in my tire, which I had never done before, just kind of to get my hands dirty.

I appreciate the opportunity to be here, and I'm really glad that the Commission came out to the great Northwest to find out what is going on in the conversion field out here. I feel that you heard a pretty good facet of perspectives this morning and in your other field visits in the last two days. So I'm going to just touch on a few things and focus mainly on just specific ideas I found in my work where the feds could play an important role.

You did hear about the conversion program in this state this morning. We did spend at least a year finding out what the needs and problems were, both for communities and businesses, as well as for workers. And we did that through a lot of direct interaction through focus groups and community meetings, with all those, with labor people, and business people, and mixed groups, and people in the communities.

We also did survey prime and subcontractors, and I think that was a real significant move; although, just doing a survey doesn't give you a whole lot of information. It raises more questions than it answers in a lot of cases. However, we did put forth a state plan for conversion diversification, now we're moving into the stage of implementing.

I will say this is -- the program I manage is fairly modest. It's a two-person program, and we've had some spending reductions based on the state budget problem. And, of course, there are a lot of other programs in the state that I'm also working to just coordinate more in this area. But there is, I think, a lot of -- there is a real important role that the feds could play.

The two projects I'm spending the most time on are organizing this flexible manufacturing network, which is now up and running, although it's still in a real fragile state as an organization, and they really haven't had any successes that would -- I mean, the successes have been process successes of getting organized.

We're also working with the people in Greater Oak Harbor, up on northern Whidbey Island, to organize a group. And we have worked to find the "visionaries" there that realize that the base could close or, even if it doesn't, their economy is too tied to the Navy. So they have organized a group called "Partnership Oak Harbor," and we're kind of being the state liaison and part organizer, part facilitator of that process.

And, as Stanley from the EDC told you this morning, I mean, their greatest need is just a little bit of money to do some good planning. It's something I wish the state could provide, but, in competitive grants they have pursued so far, they were unable to get any money.

I wanted to make some basic points that I've learned in the last three years doing this work and previously doing broader economic development work. One is that economic developers, of course, have a critical role to play in assisting communities and small and mid-sized firms and industries in improving competitiveness. I believe a lot -- if we had a -- I think economic conversion policies are really just a subset of economic development.

Good economic development is going to take care of conversion problems. You may have to tweak programs or whatnot, but that's important learning I've had. It's not like it's a magical case. Certainly, some firms that are highly defense dependent may need some cultural shifts, and that's one thing that makes them unique, as do towns that are tied to the Navy. But, nevertheless, good economic development can provide tools to help them get where they need to get in the future.

But I do think that in any kind of conversion program the goal isn't to bail out military firms but to really invest in our economy. We don't want to lose those good jobs. They are high-paying, foundation jobs, and we don't want to lose them. The thing is, whatever way we can increase awareness and give them the tools to help them find new markets and develop new products, you know, the better our economy and communities will be.

I believe strongly that conversion action must be driven at the local and regional level. I'm not even comfortable with the state going in and telling an industry or community what to do, but wherever possible we need to provide resources and some leadership, but also resources and play a facilitating role. And I guess I say "we," at the state level, you know, I know I play that role at the community level. I believe the federal needs to play the same with the states and, wherever possible, with the larger communities.

Something you heard strong feelings about today at the roundtable from really different sectors, from small manufacturers, from people representing community organizations, is the need for some national strategies to help our businesses. I think that's a federal role that hasn't been real strong except in the area of defense, and that's one arena we have, you know, with the whole defense industrial base, we've had a national industrial strategy, so to speak, or industrial policy for defense.

And I believe we need to identify critical industries and growth industries in our country for our economic future and work to support them and make sure they are world-class. There are different elements of that, from the technology research and development side, to the training side and worker preparedness, to manufacturing processes, the whole quality movement, you know, total quality management, which is part human, part technology side. I think there's a more important role that economic developers in both the nonprofit and the public sector can play in that.

I will point out that, in any kind of policies like this, one of the difficult challenges that we face is to make sure the market is part of it, but also remembering that public dollars really do drive lots of development in this country, be it in the defense sector, be it environmental cleanup, in health and human services and sciences, transportation infrastructure.

So public dollars play a key role in that market. I think we're part of the market mix, when you think about something being market driven. So any kind of strategy development at the national level needs to keep that in mind.

I also think there needs to be -- pay attention to the needs of vulnerable communities that are maybe outside the central urban cores or the larger economies. This morning, and I imagine most of the rest of your visit, you kind of -- you know, you're in an urban core here, and so you heard more about the needs of those areas.

But our two most defense-dependent counties, as far as numbers, are Kitsap and Island Counties that are still in the Greater Puget Sound area but are outside the urban I-5 corridor. And they need that kind of assistance, because even a minor reduction in those bases is going to be impactful for them. We can't forget them just because their bases aren't being closed.

I guess one thing, following up with Margaret and your question, David, obviously any of these strategies and programs need to be as flexible as possible, but they also, of course, have to be accountable. And I think ongoing evaluation at all levels is really an important thing to build in. However, as one who spent some time working in state development with Community Development Block Grants and having to deal with HUD, I also -- you know, the accountability can't go so far that it's so inflexible that it's very hard for different kinds of communities to access the money.

Let me jump into some of the specifics. I think, in your notebooks, the outline of my presentation is in there and it includes some of these specifics, so you may not have to write them all down. But let me just touch on some of them, the specific roles that I see for the federal government. And I'll jump through them quickly.

I think a conversion funding pool that is organized nationally but is flexible, that is big enough to help the communities with dealing with sudden and severe job and business losses, is necessary.

I think timely environmental cleanup of military facilities is really key. As you are no doubt aware, I mean, some of the larger Superfund states and bigger problems are on defense facilities. And it's especially a problem where base closure comes to pass. And if it takes 15 years, because of cleanup needs, to get that back to the community, then that's going to be a problem. So I would encourage the federal government to really increase the timetable to try to get those bases cleaned up.

Also, look at flexibility, you know, as far as environmental policy, with having part of the base being used while part of it is being cleaned up. Now, obviously, that's within the constraints of something that's within public safety and health norms.

I also am concerned, in cases where there may be bases that are significantly reduced, that there may be portions of the base that could be deemed surplus. No doubt, with the Pentagon, that would be a touchy issue. But the point is, if some military facilities suffer reductions and have surplus portions of the base that could be used for something for the public good, like industrial development, then I think that should be strongly encouraged.

As far as on the business side, the kinds of things that I see needing to increase competitiveness that are important for economic conversion of military firms but also, of course, broadly, for our firms in general, as far as making world class competitors, are some of the specific programs ideas, industrial extension programs. Our state doesn't actually have -- we have some programs that get at that, but we don't have the kind of comprehensive industrial extension programs that some of the larger states do.

There the federal government could play a helpful role in getting us along that way. I know that it's something NIST, with Department of Commerce, has a strong interest in. And I would take the time to compliment NIST. They are a group that I've worked with peripherally, and I really believe they have a good vision for what needs to happen in this country, and I'd like to actually see their efforts expanded greatly.

Other kinds of programs: export and marketing assistance, that's really important in this state; quality initiatives, like Total Quality Management challenge grants, maybe to states to encourage businesses to undertake Total Quality Management; also, some of the international certification efforts, like there's one called "ISO 9000," which is actually close to the DoD's certification process but is kind of the next generation.

Flexible manufacturing network creation, I believe that especially helps small and mid-sized firms. By setting up those kinds of consortiums where they can do things that they can't do on their own, it greatly helps them get into new arenas and develop products jointly that they couldn't do on their own.

Procurement assistance, we do have a program in this state that, although it's in its infancy, I believe has a lot of hope. It's called "Washington Marketplace," and it attempts to provide information to firms that may be able to supply, you know, customers, business customers. For instance, if a firm is buying widgets in Ohio, and somebody in Kent, south of Seattle, could make them, it's trying to match them up.

Then also, technology transfer and SBIR assistance.

MR. HANLEY: Paul, we're kind of --

MR. KNOX: My time.

MR. HANLEY: Yes.

MR. KNOX: Okay. Well, there are other things that are listed in there. If there are any questions, I'm available for that.

CHAIRMAN BERTEAU: Thank you, Mr. Knox. Your summary does also have some of these items and a few others which we can look at in more detail.

Let me ask you one thing that sort of leaps out at me as we go through this. I think it's fair to say that, in many of the examples you gave as good ideas for the

federal government to assist in, it really comes down to a question of funding.

MR. KNOX: Yes.

CHAIRMAN BERTEAU: And what I think you're suggesting is that -- and I just want to make sure that I'm clear on this -- you're suggesting that what the federal government should do with those funds, basically, is to provide them to state organizations which are in place or could be created to be put in place to support the activities here. Am I picking up something that's a little beyond what you intended?

MR. KNOX: Well, generally, I think it's a good philosophy to drive, much as smart businesses are trying to do, is drive the decision function down to the lowest level possible. I mean, I believe states should be doing that with their programs at the local level. So, yes, I think, wherever possible, federal initiatives should fund state and, in some cases, local efforts.

Of course, there's always politics there, and I mean the kind of turf-type politics that you have to be aware of. I also think that there's no way the state can get involved in broader national needs, for instance, picking out critical industries, like aerospace. Washington State shouldn't be monkeying around with that except as a component of a federal initiative.

So, in those cases, I think the federal government needs to get together with business and labor leaders and create those strategies.

CHAIRMAN BERTEAU: There are, of course, a variety of industries in America that are in the midst of reductions that really have very little to do with the defense drawdown. Is it your view that these programs that you've laid out here would be targeted mostly towards those companies that are affected because of defense, or would things like industrial extension programs, and export and marketing assistance, and quality management assistance, et cetera, be essentially available to everyone, independent of whether or not the derivation of their problem comes from the defense reductions?

MR. KNOX: Well, in an ideal world, we'd have an economic development infrastructure that could help every company. Obviously, because there are limited funds, we're going to have to target. When I think about a national strategy, you know, I think we should pick some critical industries and, you know, start and learn as we go along the way. You can't pick every industry. Some of those may be defense-related, and some may not.

Does that answer your question?

CHAIRMAN BERTEAU: To some degree. As we've gone around the country, of course, different people would have a different view as to which constitutes the critical industries.

MR. KNOX: Yes.

CHAIRMAN BERTEAU: Timber might have a different view here than, for example, in Texas where there aren't any trees, much less anybody cutting them down.

MR. KNOX: Right.

CHAIRMAN BERTEAU: But I understand, I think, the intent of your advice here.

MR. KNOX: And that's going to have to be debated at the national and state levels, you know. That will have to be worked through.

CHAIRMAN BERTEAU: Any other questions or comments?
(No response.)
CHAIRMAN BERTEAU: Thank you very much.
MR. KNOX: Good. Thanks.
COMMISSIONER: Good work.
CHAIRMAN BERTEAU: And we also do appreciate your help this morning, as well.
MR. KNOX: Sure. Thanks.
MR. HANLEY: The next witness is Mr. Dan Hartley, who is the president of the Seattle Professional Engineering Employees Association.
CHAIRMAN BERTEAU: Mr. Hartley, welcome.
MR. HARTLEY: Thank you for having me. I'm glad that Paul was up here before me because I agree with almost everything he said, so let's just go ahead and put me in personally this way.

We haven't had time to study this from a union standpoint. To give you an idea, we are the union for the 30,000 engineering employees at the Boeing Co. To put that in prospect [sic], we're the largest exporter in this country, the second largest in the world. We have faced foreign competition head-to-head, with minimal government support, and we are currently barely holding our own. We're competing with industries that have a great deal of government support.

We are the people who have already experienced this process with minimal attention. Currently, contrary to what a lot of people might believe, 79 percent of Boeing's business is commercial airplanes. The first tendency is going to be to say that, because this is the case, you guys don't have any problems, and you don't need any help, and therefore we'll walk off and leave you.

I came up here this afternoon to say, as a plea, to remember where engineering and where technology fits into our economy. Like Paul had indicated, we have had a national industrial policy. Those are dirty words, and I know they are dirty words. Okay. If we called it "John Henry," or something like that, instead of "national industry policy," then maybe everybody could be happy and they could save face and go home, you know.

But we have had one, and it is essentially a defense-driven policy. We have had a tendency to -- by the way, I think you have my prepared remarks. I think I gave them to you. I don't intend to go over those, particularly, unless you have questions about them. The policy has not -- we have not recognized the civilian fallout from this.

The reason that we have gone through these things is that Boeing's defense business, not only as a percentage of the company business, but also as a ranking for defense contractors, has gone down and down and down. And you'll see the television and those people saying that all these problems are big contractors like Boeing. I think, the last I saw, we were number 11 on the list. And there are people that you wouldn't even think, like General Electric and people like that, supposedly civilian businesses, that are way up ahead of where Boeing is.

Now, we didn't do this voluntarily, I'll tell you. Being a labor union president, which is bad words as you know -- there's nothing worse than being a labor

union president. If you walk in my shoes, you get all the arrows. But we've had to go through that in our union several times, because Boeing has been cut back and cut back and cut back. Our perception may be wrong, but when you have success in the civilian arena, the commercial arena, then you seem to get less success in the governmental arena.

And I think almost that's a national policy that they teach at the War College and the ICAF. Is that right, GEN May?

COMMISSIONER MAY: That's absolutely wrong.

(Laughter)

MR. HARTLEY: Anyway, that's our perception.

There has been a lot of fallout, because all this money that has been dumped into the DoD stuff has not just stopped there. Our people have been on these military programs and they have gotten degrees of smarts that have allowed them to move over to our commercial airplane programs. And it has worked.

I would say that no one likes to have to be forced to change employment; no one likes that. But our people, by the thousands, have had to do that. There are a lot of hurts, and we have wrestled with a lot of these hurts, and we have heard a lot of the phone calls. But Boeing has cooperated in trying to keep the resources, because they don't want to make the mistake that happened 25 years ago when two-thirds of the employees were pushed out the door in an economic slowdown. And most of the two-thirds did not come back; they were lost forever.

I want to caution you to not let our engineering force dissipate. We have much national effort in our engineering force. There's not that much difference, as far as airplanes and the kinds of things that I deal with, between the civilian technologies and the military technologies. There are some significant differences that you have to understand, but we have to encourage companies that do have facilities for using the engineering talent that we have.

I'm not going to suggest how to do it. I'm an engineer that is burdened with being forced to read economics books, and they are worse than engineering books, okay. But there's a lot of factors in here. Don't let the technology go.

Now, I'm concerned about jobs. I'm concerned about how we're going to pay for any conversion. I think Paul made a good statement here -- or you made a good statement when you talked about paying for these changes and things. That's going to be hard to do.

But, let me tell you, I'm not going to ask you -- give you all kinds of wisdom that I don't have. I'm an engineer, not an economist. I'm not going to give this wisdom as to how to cut this pie. But, I'll tell you, when you start talking about how to make this pie bigger so that the cuts don't hurt as many people, we're the people that do that, where the water hits the wheel.

We have been successful; Desert Storm, for example. Before Desert Storm I was back in Washington saying, "Get off our case. Our stuff works. And all we ever get is knocked on things. Whenever things do work, you never get any credit for it." How many of you have ever seen a television program that glorifies an engineer? And who made the television? And who made the antenna? And who made everything else there?

You know what I'm saying? Okay.

We don't get it, and we have been knocked time and time and time again. Okay. Our stuff worked. And our stuff works. I want you to remember that. And I want you to also remember that the only way that we can compete in the new reality of foreign competition is to have experienced technical people. I've got the largest group in the world. I'm a member of it, and I'm proud to be a member of it. And I'm proud of what our people have done.

But you can't start out from zero and expect people who have almost caught up with us, you can't expect to catch them in the current environment. We have to do everything we can to keep our current people employed, at least on the engineering level. It's sort of like your pilots. You can get other people, but the hardest thing to get for the Air Force is a pilot, an experienced pilot. It's because of the amount of time.

I can compete -- I can tell you how we'll compete on anything -- by looking at the experience level of our people. And as long as the foreign people that we're competing with don't have the experience level that we have, then we're going to be successful.

The engineer is backing or making possible about 100 jobs, each one, in our country, and these are jobs all the way from the jobs in the stores to the people that are doing the farming, to the people that are flipping hamburgers, and the people working in the factories. Let's be very careful about how we do this.

CHAIRMAN BERTEAU: Thank you, Mr. Hartley. I think what you've pointed out is one of the fundamental dilemmas that we face as we deal with the issue here. There is a narrower question, and then there's a broader question associated with it, and there's some overlap between them. You mentioned preserving the technology and preserving the capability to develop that technology. Nobody knows exactly how many engineers you need in order to do that.

From the pure military side, as Ms. Shield pointed out, we're probably not in a position where we want to pay more than what we need for defense purposes, or at least to sustain that which we will need in the future. It's difficult to say exactly how many engineers you need to keep paying in order to do that, above and beyond what your peacetime demands and the programs that are in the peacetime demand would yield there.

The second question that you raise is one of jobs. You represent 30,000 members, I believe you said at the beginning. It may be that, from Defense's point of view, the need associated with that is some substantially smaller number. The issue you've raised -- and I think you used the term "encouraging" companies to use those engineers, and, unfortunately, you bit my question off by telling me you didn't know how to do that, but I'm not quite sure how to do that either, I guess, in a sense.

One of the things we look at as a nation is that there's a marketplace which will pull where in fact the need exists. If the government is going to pay to keep these engineers busy, one has to wonder whether in fact the government is the right place to figure out where technology investments really need to be, once you get beyond the things that the government needs in order to fill its functions, such as defense.

How would you respond to that?

MR. HARTLEY: Well, I would differ with you. You make a statement

here that I don't agree with, and that is, you say that the government pays. No, the government doesn't pay. The engineer pays; in other words, we support. Don't look at these jobs as being strictly, well, I'm dumping so many dollars into an engineer, because engineers are higher paid -- they are not highly enough paid, I want you to know that. We don't have good enough working conditions.

But we're payback people. We're value-added people. Virtually everyone that you're going to be talking about on the defense drawdown are people who are not value-added people. And you develop the other industries by making sure that a shift goes into value-added people.

I can cite -- and I won't bore everyone here -- but I'd certainly be happy to answer any questions later on; if you have specific questions, you can give me a call or anything -- industry after industry where the seed came out of military, because no one was that much of a gambler, is what it really boils down to. And these few gambles that have paid off have built total industries in this country and kept us ahead of the world.

And no one wants to ever admit to this. It's not the popular thing. We're not lovable people. Engineers are not lovable people. Handsome, smart, but not lovable. Okay. So what I'm saying is that we're not going to speak a very good case for these things, but look into that very carefully.

CHAIRMAN BERTEAU: I thank you. It's certainly our intent to be paying very careful attention to the need to sustain the kind of research and development base that we need to have in this country.

MR. HARTLEY: Can I conclude with one thing? We're the largest group of engineering people in an organization like this in the world. We're one of the largest labor unions; I think we're number two in size in the state. We've been around for nearly half a century. We have a long track record with our people. We are labor. We are labor. We are out of the loop. No one talks to us.

CHAIRMAN BERTEAU: That's a very interesting observation.

MR. HARTLEY: Thanks for your time.

CHAIRMAN BERTEAU: Thank you, Mr. Hartley. We appreciate it.

MR. HANLEY: Our next witness is Mr. Louis Chirillo, who is a shipbuilding management consultant. And I think Mr. Chirillo has some slides.

Do you, sir?

MR. CHIRILLO: Yes. They are all set up to go.

MR. HANLEY: Good. I think we're ready to go, if we can muster Shelby here. Okay.

CHAIRMAN BERTEAU: Mr. Chirillo, thank you. You thoughtfully provided us with some material which we were able to look through ahead of time, and we appreciate that. So we look forward to your show here.

MR. CHIRILLO: Well, good afternoon everyone.

MR. HANLEY: You may want to just scoot over to the side there, Mr. Chirillo.

MR. CHIRILLO: As you heard, I have a written presentation submitted that is pretty comprehensive. My submittal addresses the need to modernize shipyard management per Peter Drucker's 1958 advice. America requires an unprecedented ability

of the entire economy to shift back and forth between peacetime and defense production, particularly at an instant's notice. This demand on which our survival may well depend is, above all, a demand on the competence of management.

My written submittal discusses traditional operations, rationalized operations, applicability for other than ship-related work, failure of subsidies to encourage modern management methods, mixed signals from the Navy re: modern management methods and recommendations. Principally, the recommendations focus on what the Department of Defense should do to cause modernization of private shipyard management, because the flexibility inherent in modern approaches facilitates diversification.

The recommendations also address what the DoD should do to force the modernization of public yard management, because the threat of a naval shipyard performing equivalent work, with fewer man hours, would truly motivate private yard managers.

I had better get up to the machine.

MR. HANLEY: We'll provide someone to flip the slides for you.

MR. CHIRILLO: I have a remote.

MR. HANLEY: Oh, okay.

MR. CHIRILLO: Or I did have the remote.

A PARTICIPANT: He has it back there.

MR. CHIRILLO: Somebody has the remote.

A PARTICIPANT: He has it back there.

A PARTICIPANT: (Inaudible).

A PARTICIPANT: He can flip it from back there.

A PARTICIPANT: Go ahead.

(Slide)

MR. CHIRILLO: On the one-page handout on the back of it, this same figure is reproduced showing, for the purposes of teaching, five levels of technology development. It shows that traditional operations are up to the second level. The world's most effective, in Japan, of course, is up to the fifth level. And it identifies the various technologies that have to be on board to go from one to the next.

Next, please.

(Slide)

MR. CHIRILLO: Here you see where traditional shipbuilders are. This characterizes most of the industry in America. It's the second level. It is modularization. You'll see lots of ads about modularization, but people still have to go inside a block such as this, do lots of work with their arms over their heads. We call it the Michelangelo approach.

Next, please.

(Slide)

MR. CHIRILLO: It's also characterized by designers doing traditional design work, designed just for one system, taking that system throughout the ship, regardless of what's going on around them. As a consequence, there are piping arrangements like this in a relatively modern frigate, with each one of them having separate pipe hangers and many, many unusual bends.

Next, please.

(Slide)

MR. CHIRILLO: But, in one of the two shipyards in the U.S. that is manifestly up to the third level -- this is Avondale Shipyard in New Orleans -- you will see rationalized work flow. This is the introduction of group technology, different eyes, so to speak, where you look at things not by the design details but by the problems inherent in manufacture. Then work is organized accordingly on flows per problem category.

Next, please.

(Slide)

MR. CHIRILLO: We can separate out work, prepare simple instructions, and then apply minority workers very productively. This is in Avondale Shipyard also, doing small sub-blocks just in time to support the main work flow.

Next, please.

(Slide)

MR. CHIRILLO: Also in Avondale Shipyard, doing something like an outfit assembly in the shop. Before, most of that work was done in a completed hull. But when you look at this with your group technology eyeballs, the problem category --

Next, please.

(Slide)

MR. CHIRILLO: -- is exactly the same as this. So we can develop productivity indicators, parametric productivity indicators, and relate man-hours to materials and get very accurate control of work being performed. By the way, we call that "virtual work flow," where the materials being processed are in one place, and the workers are moving from site to site.

Next, please.

MR. CHIRILLO: And showing you blocks being outfitted upside down, much safer. In fact, Avondale was recognized by OSHA. It received the OSHA Star award for safety after four years of this type of operation.

Next, please.

(Slide)

MR. CHIRILLO: And also for military ships. Here you see a destroyer block being done with the same approach in IHI's Tokyo Shipyard in Japan. That's where we learned all of this. IHI consultants were in Avondale.

Next, please.

(Slide)

MR. CHIRILLO: And you can see the pipe systems now have been -- the designs have been rationalized: more than one pipe on the same pipe hanger; the same pipe support being used for other functions; lifting pads for pumps and light fixtures.

Next, please.

(Slide)

MR. CHIRILLO: Oh, by the way, there are 1,150,000 separate pipe supports in a Nimitz-class aircraft carrier.

And here diversification. This is Avondale Shipyard with the same

methods, toxic waste incineration plant.

Next, please.

(Slide)

MR. CHIRILLO: Sulphur processing plant.

Next, please.

(Slide)

MR. CHIRILLO: A floating dam for Vadalia, Louisiana.

Next, please.

(Slide)

MR. CHIRILLO: There's the dam in position.

Next, please.

(Slide)

MR. CHIRILLO: And a floating jail for New York City.

Next, please.

(Slide)

MR. CHIRILLO: Power packages for Arabian oil fields that formerly wasted gas by flaring it off.

Next, please.

(Slide)

MR. CHIRILLO: And this is one of the technologies, statistical control of accuracy variations, the logic taught by Dr. Deming in Japan, applied for hull construction processes. It's an extremely productive technique, operated by the work force, not a separate quality department.

Next, please.

(Slide)

MR. CHIRILLO: And, of course, the statistical control. Like a good golfer, normalize your golf game. Once you get it normalized, start decreasing the spread.

Next, please.

(Slide)

MR. CHIRILLO: And then the traditionalist will tell you, "If only we could build the same ship over and over again, we'd get a learning curve." Absolutely. But what they don't tell you is, when you have a constantly improving manufacturing system, the learning curves continually drop.

Thank you.

CHAIRMAN BERTEAU: Mr. Chirillo, we appreciate not only the substance of what you have here but the examples, as well, because, all too often, I think we dwell on what we're doing wrong and not on what we're doing right. And it's useful for us to pay attention, periodically, to the fact that there are things that we can and are doing right in America today. And that's very useful.

How widespread do you find that this -- you mentioned Avondale was one of only two yards in America that's up to the third level, I think, your group technology level. How widespread do you find people interested in applying this kind of an approach?

MR. CHIRILLO: Well, I think it has a lot of popularity. I think you will

find a lot of people are trying it. I think you will find a lot of people are claiming they are doing it. But, by my yardsticks, the yardstick we have seen in Japan, we're very intimate with it, no. In my submittal, written submittal, you will see that Boeing is having the same problems now, trying to overcome the same cultural change that our mentors, IHI of Japan, achieved by 1960.

CHAIRMAN BERTEAU: Do you think it would improve if the government required people to do it?

MR. CHIRILLO: Absolutely. I, in my recommendations, have suggested ways that the government could both encourage and force people to do it.

CHAIRMAN BERTEAU: Force people to do it?

MR. CHIRILLO: In the case of the Naval shipyards, absolutely.

CHAIRMAN BERTEAU: Well, those are people who work for the government.

MR. CHIRILLO: But, again --

CHAIRMAN BERTEAU: Imposing a requirement on industry, I mean, would you put criminal sanctions and throw people in jail if they don't do it?

MR. CHIRILLO: Absolutely not. Well, to the point that they might cause accidents, perhaps, yes. The Navy yards, DoD controls it directly. And if the Navy yards can demonstrate -- they are required now to compete with private yards -- if they can demonstrate that they can do the same work with less manpower input, that's a great incentive for the private yards to change. So it's kind of an indirect thing.

CHAIRMAN BERTEAU: And we are looking at that question of the competition between the public yards and private yards as one of our areas of examination. We'll fold this into that.

MR. CHIRILLO: Okay. In that connection, if you do not get, from the government's point of view, get control of the cost per product orientation, like I showed you, not the old system approach, you will never get a fair comparison.

CHAIRMAN BERTEAU: All right. Any other questions, comments?

(No response.)

CHAIRMAN BERTEAU: Thank you very much, sir.

MR. CHIRILLO: Thank you.

MR. HANLEY: The next witness is Mr. Russell Beliveau, vice president of CRI Program Management.

CHAIRMAN BERTEAU: Mr. Beliveau, I think, while you're coming up, we'll clear the space here and get the lights back on.

MR. HANLEY: Yes, we'll get things back to what we had.

CHAIRMAN BERTEAU: Welcome, sir.

MR. BELIVEAU: Thank you.

CHAIRMAN BERTEAU: Anybody whose name ends in "e-a-u" is certainly somebody that I look forward to listening to.

MR. BELIVEAU: Well, anyone with a name ending in "e-a-u" is somebody I look forward to testifying to.

(Laughter)

CHAIRMAN BERTEAU: We worked this all out ahead of time so that --

MR. BELIVEAU: I want to thank the members of the committee for allowing me to testify on behalf of my company, Foundation Health Corporation, and to talk to you about one of our government programs, the CHAMPUS Reform Initiative, CRI.

Foundation Health Corporation is a large Sacramento-based health care maintenance organization covering 800,000 lives in California. Our company specializes in managed health care. We had revenues in 1992 of $1.2 billion, and we are one of the largest defense contractors in the country, not, however, as large as Boeing.

We are the DoD's prime contractor for the CHAMPUS Reform Initiative in California and Hawaii, with a separate contract in New Orleans. The CHAMPUS Reform Initiative is one of several programs being operated by the Department of Defense for the purpose of managing health care systems for military families.

The goals of the CHAMPUS Reform Initiative are to contain health care costs; secondly, to improve the quality of health care for military beneficiaries; thirdly, to improve beneficiary access to health care; and, finally, to optimize the utilization of military hospitals and clinics.

Our programs have experienced extraordinary success meeting these objectives. Studies conducted by independent organizations, including the RAND Corporation and B.D.O. Seidman, have demonstrated that cost savings approximating $75 million annually have been achieved while also achieving a 98 percent beneficiary satisfaction rating.

The overwhelming success achieved by the CHAMPUS Reform Initiative program has been acknowledged by the senior management of the Department of Defense, as well as congressional leadership. Because of the popularity and success of this program, DoD is in the process of aggressively expanding its managed care initiatives throughout the country. The importance of this expansion to the Commission is that it represents a significant shift from unmanaged indemnity health care to intensely managed, fully coordinated health care delivery.

Philosophically, the Department of Defense has come to the realization that the only way to contain rapidly rising health care costs is to spend administrative dollars on the staffs and systems that manage and control those costs. This shift in spending pattern means jobs. While much of the defense industry is being negatively impacted by DoD's cost-cutting, the cuts DoD hopes to realize in the health care arena positively impact the job outlook.

In California and Hawaii, Foundation and its subcontractors employ over 1,200 people in the management and administration of the CHAMPUS Reform Initiative. Many of these employees are former DoD or DoD-contractor-affiliated employees. Our programs have already expanded into New Orleans where an additional 200 people have been employed by Foundation and its subcontractors. We are currently bidding on the CHAMPUS Reform Initiative project in the States of Washington and Oregon, which will offer significant employment opportunities for the residents in those two states.

It has been our experience that the former military and DoD contractor employees, even those without direct health care background, specifically, contract officers, personnel specialists, information systems specialists, bring skills and basic

experience which are either directly applicable to the work that we do or a solid basis for training.

The government currently has plans for expansion of managed care models in the Southeast, Northeast, the Tidewater area, the Greater D.C. area, certain areas of Texas, including Dallas-Fort Worth. Many of these areas will be impacted by base closures and defense cutbacks, and these managed care initiatives will create an opportunity to shift the displaced work force into some of these newly created jobs.

The conclusion of this and our message for this is that we recommend the continued, uninterrupted expansion of these managed care programs, not only in CHAMPUS, but with DoD's other health care programs, as well as Medicare and Medicaid. The country is in desperate need currently for health care reform. Properly structured, we feel that health care reform can be a win/win where we not only cut health care costs but also create jobs at the same time.

Thank you.

CHAIRMAN BERTEAU: Thank you, Mr. Beliveau.

The question of health care benefits, of course, is one that is relevant, not only to the separating military members who are eligible for CHAMPUS, but one that is very much in the minds of other people who are being affected by the drawdown as well. There have been some proposals to expand the eligibility for CHAMPUS and for DoD health care beyond the bounds where the beneficiaries currently are.

Some have even gone so far as to recommend that displaced defense workers be eligible for defense health care delivery systems, including, potentially, both the direct care facilities as well as, potentially, CHAMPUS.

Do you have any views on the wisdom or effectiveness of expanding the beneficiary population?

MR. BELIVEAU: First off, I'm not sure of the economics of the government buying that health insurance for the displaced workers.

CHAIRMAN BERTEAU: One might wonder whether the government is the most efficient way to do that.

MR. BELIVEAU: Correct.

CHAIRMAN BERTEAU: I'm not aware of any studies one way or the other on that; I don't know if you are.

MR. BELIVEAU: I'm not aware of any studies on it. We are looking at the COBRA implications of many of these displaced workers as well as people currently within the military who are going to be released prior to retirement eligibility and whether or not they would be affected by COBRA benefits. That's under study with us now.

We do feel strongly that whatever the government does, and responsibly it will need to do something, about the health care for these individuals, that whatever they do it needs to be in a managed care environment and not some unmanaged indemnity type of program.

CHAIRMAN BERTEAU: Would you have any idea when the completion date of your study on the COBRA impact would be?

MR. BELIVEAU: We're looking at it now, and we're actually doing it for purposes of providing a proposal to the Department of Defense. I'm not sure of the date

that that would be released, certainly within the next few months.

CHAIRMAN BERTEAU: Might I ask you if, by chance, it is completed and becomes the basis for part of your proposal and you would be comfortable sharing that with us before we reach the end of our work, we would really appreciate that opportunity and that input, if we could.

MR. BELIVEAU: Okay. We would be glad to do that, provided it is finished in time. When does the Commission finish?

CHAIRMAN BERTEAU: Our report is due December 31.

MR. BELIVEAU: Okay. There's a good chance of that.

CHAIRMAN BERTEAU: We may quit writing a day or two before that, of course.

MR. BELIVEAU: Yes.

CHAIRMAN BERTEAU: Any other questions or comments?

COMMISSIONER DAHLMAN: Let me just make a quick comment in this context.

I'm sure you're aware of the fact that the rapidly increasing cost of health care within the Department of Defense has become a subject of increasing scrutiny, both within the Department and also from Congress. And the Department has been asked by Congress to provide a study, which hopefully will be done in about a year, year and a half or so about how to contain health care costs.

And I'm sure you're aware of the tremendous political sensitivities that are involved there, in particular with respect to access to care in the military treatment facilities by retirees and dependents.

MR. BELIVEAU: Mm-hmm.

COMMISSIONER DAHLMAN: But just to give you an example, when it comes to conversion, there's often a lot of talk about how difficult it is to contend with the entrenched interests within the Pentagon. And it really is the same thing in health care too. I don't know if you're aware of the fact that out of all the Army officers, no less than 25 percent are in the health care area. And if you look at Army colonels alone, no less than one-third are in the health care area. That is a formidable interest group to contend with.

MR. BELIVEAU: Mm-hmm. We are aware. We deal with the military quite regularly.

COMMISSIONER MAY: Could I ask a question, David?

CHAIRMAN BERTEAU: Yes, go ahead.

COMMISSIONER MAY: Could you just give me some insights into how you baseline previous health care costs and determine your $75-million savings?

MR. BELIVEAU: Yes. The Department of Defense and Foundation, prior to the entry into our current contract in California and Hawaii, which, by the way, is four and a half years old, we took a look at CHAMPUS health care costs leading up to the day that we took over the contract. We trended forward, using the trend factors that had been historical for CHAMPUS health care leading up to that date.

We also took existing trends for the rest of the country to see -- to get a comparison between what the trends were prior to the start-up of CHAMPUS and what

nationwide trends were following the start-up of our initiative.

Anyway, in trending these things forward, we agreed with the government on a price, a fixed price, for delivering the health care for a five-year period. And at this point, four and a half years down the road, we are within 2 percent of the price that we agreed upon. And the government, at the time, calculated a percentage of savings for the government which comes out to $75 million or more per year.

COMMISSIONER MAY: Okay. Thank you.

CHAIRMAN BERTEAU: It wouldn't surprise me a bit if, in fact, CHAMPUS costs have actually risen faster than the government's projections four and a half years ago, at the time of the contract award.

MR. BELIVEAU: When we entered into the contract, the government was experiencing a 30 percent per year increase in California, which, by the way, is much higher than the rest of the country.

CHAIRMAN BERTEAU: Right.

MR. BELIVEAU: In the RAND study, what they found was that we had contained costs to a 2 percent increase while the rest of the country had experienced a 16 percent increase.

CHAIRMAN BERTEAU: Those are some fairly remarkable figures.

Mr. Beliveau, we want to thank you for taking the time out and coming up here today, and we really appreciate your input. In the event that you do finish your work in time, we would love to have a look at it.

MR. BELIVEAU: Very good.

CHAIRMAN BERTEAU: Thank you very much.

MR. BELIVEAU: Thank you very much.

COMMISSIONER: Do we have a copy of his statement? Did you leave us a copy?

MR. BELIVEAU: We faxed one to you, but if you don't, I'll leave one.

COMMISSIONER: Thank you.

MR. HANLEY: The next witness is Dr. Phil Bereano of the 21st Century Project. Dr. Bereano is from the University of Washington.

CHAIRMAN BERTEAU: Dr. Bereano, welcome.

DR. BEREANO: Thank you. (Inaudible) name so you see it doesn't (inaudible).

CHAIRMAN BERTEAU: Right. You can take Mr. Beliveau's down, and that will keep us from getting confused.

COMMISSIONER DAHLMAN: He doesn't spell the "o" at the end right; he should spell it "e-a-u."

CHAIRMAN BERTEAU: They say never trust a person whose name ends in a vowel. If you have three of them, then you really shouldn't be trusted, I guess.

MR. HANLEY: You're going to need your microphone.

CHAIRMAN BERTEAU: Yes, sir, you will need the mike there.

DR. BEREANO: You will; I won't.

(Laughter)

DR. BEREANO: My name is Philip Bereano. I'm on the faculty of the

University of Washington. I'm a professor of engineering.

I was first interested in economic conversion issues over 15 years ago when I served on the board of an organization called, originally, the Puget Sound Conversion Project, and subsequently the Washington State Conversion Project, which was comprised of people in the labor movement and the church groups and other community organizations who were concerned at that time with the implications of what if peace broke out or, conversely, with the fact that we all shared a view that military spending was excessive and should be reprogrammed.

So a number of the issues that are currently facing the country are ones that I've had occasion to consider for some time.

I'm speaking to you today on behalf of the 21st Century Project, which is a project of an organization called Computer Professionals for Social Responsibility. And this project has received some preliminary funding from the Rockefeller Foundation and other groups. I have copies of the proposal here, which I will leave with you. And I want to just talk a little bit about what we're hoping to do and suggest why you ought to be interested in it.

The background is, of course, familiar to you, but we start from understanding the historic juncture that the U.S. now faces posed by the intersection of two recent phenomena, the end of the Cold War and the almost universal national alarm over the decline of America's technological leadership. Since the end of World War II, government policy supporting scientific and technological investment has been dominated by principles of national security imposed by the Cold War, and that situation has now ended.

There is now serious concern among nearly all American leaders that the U.S. is losing its technological preeminence. And, of course, there have been many studies which I'm sure I don't have to cite to you, both from academia, such as the Kennedy School at Harvard University's book, Beyond Spinoff: Military and Commercial Technologies in a Changing World; the National Academy of Science's study of this year, The Government Role in Civilian Technology: Building a New Alliance, et cetera, et cetera, et cetera.

We are concerned about the fact that there does not really exist a sufficient, if you will, intellectual structure to deal with the nature of the problems that are ahead of us. And, in particular, we are concerned with the fact that we're a democracy; we like to claim that we're the world's leading democracy. And whether or not that is true, there's a commitment to democratic values, and there isn't a sufficient exploration of the ways in which, in fact, there can be democratic participation in the issues facing this society today of industrial policy and conversion economics.

Very few people have yet considered some of these questions. There are a number of academics who have been doing so for some time, there are other people in the society, in other sectors of the society, I don't want to say that those of us in academia are the only ones who have been thinking about it.

The purpose of the project that we have proposed is to examine the setting of technological policy in a way that would facilitate democratic decision-making rather than a kind of top-down, elitist sort of decision-making model.

We feel this is appropriate, not only because of our understanding of democratic values, but because, by any measure, since the last conscious or self-conscious set of discussions of, maybe, national technology policy, or at least the beginnings of them in the '50s, leading to the National Science Foundation, there has been a considerable revolution in terms of American society's expectations about democratic participation. And structures and modes which might have been acceptable in the '50s or the early '60s are clearly not acceptable to large numbers of people today.

My own area of work, academic work, is primarily in the field of technology assessment, a term which you may be familiar with. Technology assessment, as a concept, was started in 1969 under the leadership of Congressman Emilio Daddario of Connecticut, and culminated in the U.S. Congress establishing the Office of Technology Assessment in 1972.

The academic studies by the National Academy of Sciences and others, which led up to the passage of the congressional bill, were quite explicit that by that time, in the late '60s, trends, the environmental movement, the women's movement, civil rights movement, other kinds of trends of empowerment and liberation, were such that increasingly large numbers of Americans had expectations of democratic participation, of public involvement, that were quite different from what had been the norms previously. And that is the premise of the investigation that we are prepared to undertake.

I, of course, don't have time today and certainly did not plan to read you much in the way of the details of the proposal. But our main purpose is to try and commence a dialogue, not only among leading academics, but one that would lead to the publication of reports and studies that could be widely disseminated, in language that educated lay people could use to help facilitate their feeling that they are on top of this issue.

This is a factor that is of great importance to me in terms of my own work and my own commitment to democratic participation in technological decision-making. It is often said that, in many of these decision areas, whether they be in the field of genetic engineering, or virtual reality, or whatever, that the average citizen, even the average educated citizen can't understand these things. It's too complicated.

And, of course, there is a tremendous what we call technological illiteracy around. Most people can't explain what happens when you switch the light switch on the wall and this goes on or off. But the fact of the matter is that most of the issues, the public issues, that need to be decided are not technical ones; they're policy issues; they're value-laden issues.

And the quantum of information that is technological ought to be -- it ought to be a responsibility of technical people -- and I take this obligation as an educator -- technical people ought to be able to translate and make things understandable so that educated people in a democracy can exercise their democratic rights.

So this is the purpose of the kind of study we're proposing. It's very relevant to the kind of work you're doing. Maybe you ought to consider funding a little academic study to help facilitate the recommendations that you're going to produce. At any rate, I'm going to leave the thing with you for your information.

CHAIRMAN BERTEAU: Dr. Bereano, I look forward to looking at it, as

I'm sure the rest of us do, as well. And let me just ask you, does your proposal address the question of the ways in which democratic participation in these kinds of questions in currently inhibited, other than just the availability of information?

DR. BEREANO: It looks at existing models and then talks about going beyond them. But it's not a proposal that sort of says, "Hey, we have everything laid out *a priori*, and this is what we're going to do."

CHAIRMAN BERTEAU: Right.

DR. BEREANO: We really want to stimulate discussion among increasing numbers of academics and lay people, nonacademics, in fields such as labor, such as industry, and so forth, who have a real interest in this, who maybe haven't had the luxury of having a more structured academic discussion about what some of the ways might be to approach this. Look at models that are both theoretical and models which perhaps have been used elsewhere, in other societies, to deal with some technological issues.

CHAIRMAN BERTEAU: I look forward to seeing your proposal.

DR. BEREANO: Great. I'll just leave it with the staff.

CHAIRMAN BERTEAU: Thank you. That would be fine; yes.

DR. BEREANO: Okay. Thank you.

CHAIRMAN BERTEAU: Any other questions or comments?

(No response.)

CHAIRMAN BERTEAU: Thank you very much, sir. Appreciate your coming down.

MR. HANLEY: The next witness is Mr. Tony Lee from the Washington Association of Churches.

Mr. Lee.

CHAIRMAN BERTEAU: Mr. Lee, welcome. We're a couple minutes behind schedule. I appreciate your patience.

MR. LEE: Oh, I can be brief, hopefully. Thank you, Mr. Chairman.

My name is Tony Lee. I am the legislative director for the Washington Association of Churches. The Association of Churches is the state ecumenical agency, the state Council of Churches, if you will, which represents all the mainline Protestant and Catholic denominations in this state. Our board is made up of the bishops of each denomination plus three representatives from each of the denominations.

By way of introduction, the Association of Churches I think has long called for a systematic and comprehensive program of economic conversion to accompany any reductions in defense spending. With the end of the Cold War, I think it is clear, I think from all people across the political spectrum, that the defense budget will be cut significantly and that military resources used to defend Western Europe, for example, and to build complex weapon systems will be phased out as quickly as it is practical to do.

But a significant reduction in the military budget without mitigating measures could lead to devastating impacts on local communities and people. The WAC believes, therefore, that planning and funding for economic conversion must be a high priority at the national level and must be an integral part of any reduction of the defense budget. And I suppose that would be one of the main points I would like to stress in my testimony.

For economic conversion to succeed and become a reality, however, the federal government must play a significant role and, indeed, I think must be the lead player. So we don't really see economic conversion succeeding without really a significant role by the federal government. Let me outline some of the reasons why we believe that is the case.

First, I think that the federal government has a moral and political responsibility to the affected communities and defense workers and companies. I think the decision to reduce the military budget is a national decision arising from a national consensus on the diminished threat from our former adversaries. Local communities and workers, therefore, must not be asked to shoulder the burden of economic conversions on their own. This is a federal and national problem, not a local one.

Secondly, the federal government, it seems to me, must be involved because economic conversion will not become a reality and success without the federal government's help. As I think most of us know, companies, many companies, that are heavily dependent on defense contracts are not doing very well right now, especially in these recessionary times. They simply do not have the ability to convert in this kind of economy without substantial help from the federal government.

I would like to commend to you an article which appeared, fortuitously enough, in this Sunday's New York Times. It's the front page of the -- I think a lot of you are familiar with it, but I'd like to read just the introduction. It says, "Arms makers rather fight than switch. A few contractors reach for civilian work, but most aren't budging without a federal push." And I think it is very clear that that in fact is the case.

Thirdly, I think the federal government should have no illusions about the ability of state and local governments to assist in this effort. States such as California, as you know, the very states that are the hardest hit by cutbacks in defense are the ones who are having the hardest time, and therefore I think it would be unlikely that they would be able to step up and help defense industries.

Our own State of Washington, which, by the way, has, I think, escaped the worst impacts of the recession, we cut over $500 million from our present biennial budget, and we expect one of the largest deficits since at least the 1980 recession, between $900 million and $1.5 billion, in the upcoming biennial.

So I think, for all of these reasons, both political, moral, and practical, the federal government must devote substantial resources to economic conversion if it is to succeed.

Can we do this? Is this going to work? I am not an engineer or an expert, so I'm not going to argue with you about the technical details of this, but, again, as the *New York Times* article points out, we do have a history in this area, and, as the article pointed out, in the three military cutbacks that we've had since World War II, we have successfully converted.

I think the most dramatic example, obviously, is after World War II when our country made a substantial commitment to retrain and to provide jobs for millions of service men and women who were coming home from the war. The federal government, again, took a lead in this massive effort which not only succeeded but transformed our country and propelled it into the great economic power of the 1950s and the 1960s.

Through the GI bill, the VA mortgage assistance program, FHA, highway construction program, just to name some of the most prominent programs, the federal government helped to provide training and jobs for millions of returning GIs.

It is also important, I think, to remind ourselves that, in spite of all the talk about a diminished government role in the 1980s, the federal government still is the single largest purchaser and user of goods and machinery in this country and that it has the power and the resources to create demand and to channel demand for goods and services.

Finally, I think it is important to remind ourselves that our country has huge unmet needs. They cry out for the talent and ingenuity of our defense contract workers and industries, from repairing our crumbling infrastructures, our roads, bridges, and sewers, to cleaning up our environment, to developing and discovering new manufacturing and production methods, to nurturing our high-tech industries, to building mass rapid transit and other transportation systems, to educating our children and rebuilding our inner cities, these are some of the tasks which are crucial to our country's ability to survive and compete, and they are tasks that are very well suited, I think, on the whole, to the talents and resources of our defense workers and companies and communities.

I think, from the list that I've given you, these tasks are not going to be accomplished without substantial commitment of money and resources from the federal government.

So I think, in closing, I would like to again emphasize that maybe our workers and industries could eventually survive on their own without a systematic plan of economic conversion, but I think we would all have to admit that that would occur probably not without a great deal of suffering and pain, not without devastation to local communities and workers for a significant period of time. I think we, as a country, cannot and must not allow that to happen.

Thank you.

CHAIRMAN BERTEAU: Thank you, Mr. Lee.

The article you cited by Mr. Uchitelle I think is one that we've all read. And one of the things that I'm left by in your comments is a question that I asked earlier to Mr. Knox. I might phrase it to you in a similar way. The distribution of impact from the defense reductions is, of course, fairly closely associated with the degree of employment already in a particular area.

MR. LEE: Right.

CHAIRMAN BERTEAU: Different parts of the country have different impacts as a result of that. The needs you cite for government investment may not in fact match those same impacts, if you will.

MR. LEE: I understand that.

CHAIRMAN BERTEAU: Is it your view that the federal funding that you recommend here be targeted according to the impact or be targeted in some other way?

MR. LEE: Well, I think the impact, obviously, has to be taken into account. And I think that's one of the major reasons why we cannot allow this to be worked out by market forces, because market forces, obviously, would not take into account the impact on the communities. It would follow the prior criteria, which is where

are these services needed and what not.

Yes, without a doubt, it seems to me that the impact will have to be taken into account, and accommodations will have to be made. Again, I am not in the position to know how that can be done. But I could see, for example -- I mean, it's interesting, like in the State of California, obviously, the impacts are significant, I mean, probably the greatest in the country. I'm not aware of any other state that has been as affected. In the State of California, I think we have a match of needs and resources. And so I think that can be worked out.

But I would hope that your commission would definitely lift up the priority of impacts in any kind of federal targeting of programs and resources.

CHAIRMAN BERTEAU: We have heard, just to play the opposite angle for a moment, we have heard from states like Michigan, which say, "Look, we've been in a deep recession for far longer than the nation. We don't have a big defense industry. We're suffering an impact, and now you want to take our tax dollars and go bail out some other part of the country who has been benefitting while we've been suffering."

How do you explain to the folks of Michigan the rationale behind doing that? And I'm not sure I know the answer, but I think it's a very important question.

MR. LEE: I think it is an important question. I alluded to that somewhat in my testimony. I think the first answer to that, I think this is a national problem. And I think it is unfair, given that this is a national problem, which arises out of a national consensus about the diminished threat and therefore the diminished role of a defense industry, it seems to me it is a national responsibility.

Secondly, I think that the things that we have in mind, and we follow the lead of our national church bodies, the things that we have in mind, the rebuilding of the infrastructure and what not, have benefits for the whole country. I mean, we really are talking about projects that absolutely need to be done if we are to survive as a competitive nation. And I think the benefits will be spread out throughout the country.

CHAIRMAN BERTEAU: All right. Any other questions or comments?

(No response.)

CHAIRMAN BERTEAU: Thank you very much. We appreciate it.

MR. LEE: Thank you.

MR. HANLEY: Mr. Chairman, we're about two minutes behind schedule, but we have a break scheduled now. Would you like to do that?

CHAIRMAN BERTEAU: I would love to take one, yes. Thank you very much.

MR. HANLEY: All right. Well, why don't we have a 10-minute break.

(A recess was taken.)

CHAIRMAN BERTEAU: Ms. Robinson, welcome.

MS. ROBINSON: Thank you.

Again, my name is Ellen Robinson, and I recently worked as a senior design engineer for a large defense contractor in this area in designing packing for accelerometers used in inertial guidance systems for ballistic missiles. I worked both as a full-time employee and later as a part-time consultant until February of this year when I was laid off in one of several continuing efforts of the company to downsize its work

force as defense dollars disappeared.

Working as an employee in a military-funded project under a defense contractor has given me a great understanding of the defense industry, the government's responsibility in a changing world, and the need for defense conversion for our economic survival. Through my employment in the defense industry I made several observations.

First, there is a tremendous amount of technical expertise and money directed into military projects in both academia and industry which has greatly shaped and directed our industrial development as a nation. Additionally, these resources have been used to develop, design, and produce products that meet stringent military performance specifications. The primary goals of these products are driven more by their performance requirements than by cost or standardization as you would find in the commercial sector.

Many times the products are low-volume, custom parts that require exotic materials, components, processing, fabrication, and testing procedures. As a result, these products are expensive and do not necessarily have a counterpart in the commercial market.

In the defense industry, companies dependent on military funds are very sensitive to the rise and fall of the defense budget and less adept at developing and marketing products for the civilian commercial arena. Since the doubling of the military budget in the '80s, more companies have become increasingly entrenched in these military-funded industries.

The emphasis on defense development has led to our military superiority on weapon systems and avionics throughout the world. This was done with the American public as the customer of these products, paid for by their tax dollars. However, this defense escalation has been developed at a cost. Resources and talents that could have been applied to strengthen and develop civilian commercial markets and infrastructure technologies were diverted into defense products.

Our present industrial base, still largely shaped by this military presence, does not reflect our post-Cold War economic needs for developing and marketing civilian commercial products at home and abroad. We, the American public, need to reinvest in our economic future through the use of tax dollars to develop our civilian economy.

Defense conversion funds, services, and policies can greatly accelerate the transition to a commercial economy. Groups from around the country working on conversion activities in their regions have developed excellent programs and platforms to change their military- based economy around. Some highlights from these endeavors, which I find particularly beneficial from my experience and perspective, are listed below. Funding and resources channeled into such activities could help guarantee good return on economic investment for our future.

One example is the creation and implementation of state diversification plans, such as in Washington State, to assist military-dependent communities, businesses, and workers to build long-term economic strength through diversification.

Another is consortiums of utility, industry, labor, and environmental organizations, established to promote new technologies compatible with local industries. Consortiums have been initiated to develop regional commercial technological expertise while creating local infrastructure enhancement and job development. Examples of these

consortiums include CALStart in Los Angeles, California, and MagLev, Inc., in Pittsburgh, Pennsylvania.

Also, panel recommendations from the New York Defense Spending and Impact Report from the Governor's Defense Advisory Panel include research and development funding and tax credits for commercial markets, the creation of an industrial modernization block grant program, and defense diversification programs to help companies target and move into commercial markets.

As a closing remark, I would like to reemphasize that the federal government has been responsible for the dominant military presence in our industrial base through its extensive funding of highly specialized defense products. However, our present industrial prowess does not reflect the needs of a post-Cold War economy which is primarily concerned with competitive development, production, and marketing of commercial goods worldwide.

As military dollars become scarce, defense-dependent companies and communities will make the transition from military to civilian products for their economic survival. Since the federal government has been instrumental in directing technology up to the present for the use of tax dollars for military programs, it will be necessary for the federal government to also be involved as these same industries and communities initiate into the commercial sector. Innovative conversion activities nationwide give us a hopeful glimpse into our country's future development.

CHAIRMAN BERTEAU: Thank you, Ms. Robinson.

I think you've hit on a very core issue here. One observation I would make: I think you're right that one of the benefits of the defense drawdown is the talent that will be freed up to focus on other problems. In fact, that may be the true peace dividend, not the budget dollars that are laid out there, people such as yourself.

One of the issues that we wrestle with, and I would appreciate your observations on this, you recommend that the federal government would help companies, defense companies, target and move into commercial markets. Some have argued to us that those are the last people you want to help because they are the ones who are the furthest away from being competitive; that, in fact, if there's going to be any help, we ought to be helping the companies that are most competitive, because they will provide the pull that restores the technological competitiveness that has been decried here today.

What is your observation on that dilemma, or those options, if you will?

MS. ROBINSON: I don't feel that the defense contractors have been noncompetitive. I feel that they have had great success in working in a different system of competition where they have had to work on proposals and get grants that ensure their survival and also put out very high quality work in, again, a different arena, making usually a low-volume product but a very highly sophisticated product which has developed a great deal of technology.

So I'm not in the same -- with the same feeling. Certainly, if someone finds their talents in one arena, it's going to be difficult for them to transfer to another one. But with the kind of talents in the companies, I don't really see where a problem is. I think that the problem lies in trying to determine which technologies are most transferable or what the counterparts would be, so that it wouldn't mean starting

completely over.

And that's where ideas such as consortiums come in, where governments can get together with utilities and labor organizations and communities and figure out both what kinds of technologies a local area might need and also where the talents of the industry in a local area are, so that they can implement them with the least amount of distress.

One of the things I wanted to say, as well, having to do with a comment that was made right before break, is an idea that, if the federal government is getting involved in diversification, it's actually a bail-out program. Those words were used, and I really don't see it that way. I see it as new directions. We had been on a direction that successfully -- we excel in our defense industry. And we have to now take that and not look at it as a bunch of people that are desperate and, you know, communities that are falling in on themselves, but as new potentials.

CHAIRMAN BERTEAU: One thing that has been observed to us, and I'd ask your view on this, is that design engineers such as yourself frequently come up with good ideas for commercial applications of the technology that they are involved in, but that because the company was focused on defense that those ideas were not pursued. Is it your view that that's the case, and, if so, what should be done to increase our ability to pursue those ideas or open up the opportunities for those people to do that?

MS. ROBINSON: I do believe that was the case, and it sometimes is the case. As a matter of fact, my husband is also -- he's a research engineer, and I have heard similar from him, that if a company is in defense work and has found their niche in defense work, having to set up for all the manufacturing and testing and everything else, that they are reluctant to get involved in the commercial field. And yet, as you say, ideas come up all the time that are transferable.

I think that what can be helpful in that regard is support -- well, things such as tax credits and grants for commercial R&D. I think one of the things that has set us back -- and this was my impression while I was in school, as well -- is that all of the money was coming from defense. And there was the justification that offshoots from this money were funneling into the commercial arena, but very inefficiently.

So my impression is that if there was money available for companies, if someone had a good idea and -- you see, the project I was on was design and development, and it was fully funded. So what kind of incentive is there to find in the commercial arena? There has to be some support given to help these companies make a change in their idea that competition in the commercial will win out for them, without this heavy front cost for research and development.

CHAIRMAN BERTEAU: And you would do that in the form of incentives as a motivator?

MS. ROBINSON: Yes, definitely.

CHAIRMAN BERTEAU: Okay. Any other questions or comments?

COMMISSIONER DAHLMAN: Yes. I apologize for arriving late. I missed the opening part of your testimony, but I see in your statement that you used to design packing for accelerometers used in inertial guidance systems for ballistic missiles.

MS. ROBINSON: Yes.

COMMISSIONER DAHLMAN: I think we're all grateful that that's no longer a growth industry. Yet we can all sympathize with you because you've had to pay the price in terms of personal adjustment, going through a conversion from a defense to a nondefense job. And I just wonder if you can tell me a little about the applicability that you, as an engineer, learned on your former job to the next job you might find in a more civilian-oriented production line and to what extent, you know, it's easy for engineers to make that transition.

MS. ROBINSON: Well, I believe that the kind of experience that is transferable is, well, packaging is not as specialized, mechanical isolation, thermal isolation, that type of thing is something that is needed for many types of instruments -- CAD-experience, finite element experience, that type of thing is transferable. So it's not as if the skills are not transferable or cannot be used in the commercial sector, you know; all of them can be.

Working out a project from its conception into manufacturing, also, I think that probably in the commercial sector you would -- I worked in manufacturing in the commercial sector before that, with AT&T -- and what I found is a great emphasis at the end of it would be on streamlining, standardization, and cost reduction. And that part of it, when you start getting into commercial and expect high volume type production, that would be also, you know, an addition to the kinds of skills that you would have in a military type application.

COMMISSIONER DAHLMAN: Thank you.

CHAIRMAN BERTEAU: Any other questions, comments?

(No response.)

CHAIRMAN BERTEAU: Thank you very much, Ms. Robinson. We appreciate your being here.

MS. ROBINSON: Thank you.

MR. HANLEY: The next witness is Ms. Anci Koppel, coordinator of Seattle Women Act for Peace.

Welcome.

CHAIRMAN BERTEAU: Good afternoon, Ms. Koppel.

MS. KOPPEL: Good afternoon.

CHAIRMAN BERTEAU: Welcome.

MS. KOPPEL: I'm very glad to be here. I'm also -- I think I should talk with this.

MR. HANLEY: Whichever you like.

MS. KOPPEL: With this instrument here.

MR. HANLEY: We can move the microphone to whichever seat you prefer.

MS. KOPPEL: That's fine.

I'm very glad to be here. I'm very glad to have come earlier to hear diversified proposals and ideas on conversion and related problems. I also want to -- I'd better put my name up before I forget it -- I mean my name.

I also want to thank you for inviting grass roots organizations. We certainly, Women Strike for Peace, and the branch, Seattle Women Act for Peace,

consider ourselves a grass roots organization. And since there is not too much known, generally, only in the peace movement, about Women Strike for Peace, I want to read something here. I'm not going to read everything, because I'll be sidetracking to something else.

In 1961 -- can you hear me?

CHAIRMAN BERTEAU: Yes, ma'am, very well.

MS. KOPPEL: Okay. -- when atmospheric nuclear testing occurred frequently and military scientists disagreed with those in the private sector over the effects on human health from the fallout, a group of young women in Washington, D.C., mostly mothers, decided to call for a one-day strike. Thus was born Women Strike for Peace, and, incidentally, other branches and Seattle Women Act for Peace, to protest atmospheric tests which were resulting in damage to children's bones and teeth.

And the first demonstration led WSP to the Committee for Nuclear Information in St. Louis, Missouri, headed by Barry Commoner -- some of you may be acquainted with him -- who subsequently initiated a research project at the dental school of Washington University in St. Louis, and indeed they found very distressing results which confirmed our fears that atmospheric testing resulted in entering our children's systems via the consumption of milk.

This was part of a hard and long struggle which we did not on our own. We had a lot of good help, and one of them was SANE. At that time they weren't called SANE/FREEZE. In 1962, President John F. Kennedy advanced an agreement to end atmospheric testing of nuclear bombs, and this agreement was signed within a very short time by the Soviet Union and Great Britain. It's called the Partial Test Ban Treaty. About this time, U.N. Secretary General U Thant said of Women Strike for Peace, "The continuing work of Women Strike for Peace on behalf of human survival and human welfare has been a source of inspiration to me in my own efforts to achieve world peace."

We turn for advice -- we cannot say we specialize in engineering, or health, or similar specializations, so we depend, for instance, on Physicians for Social Responsibility; American Civil Liberties Union, that's on civil rights; regarding peace, economy and conversion, the Center for Economic Conversion; regarding defense, the Defense Monitor and the Union of Concerned Scientists. This is one among others.

Lastly, I would like to say we rely heavily on the research of our legislative office in Washington, D.C., with regard to legislation and how to influence its course. So we're also quite political.

I think at this time I would like to say -- and you have it in your folder -- I didn't bring you whole pamphlets or books, but just book covers; one, Converting the American Economy, and that was written in 1978 by Marion Anderson -- Some people think I say Marian Anderson, and that's somebody else; we know her -- Greg Bischak and Michael Oden.

When I saw this headline -- because I got it; recently somebody sent it to me -- I was thinking, we have to convert the American economy, that's true, but we also have to convert our priorities. And we have to convert our values, convert in the good sense. So this is one that was written and you'll find out where you can get it, if you don't have it already.

Another front is the Economic Dislocation that was written by William Winpisinger and three other labor leaders. And I can see from your nodding you know all about it.

CHAIRMAN BERTEAU: We, in fact -- the first one you referred to, we have met with Mr. Greg Bischak in Washington.

MS. KOPPEL: You had what?

CHAIRMAN BERTEAU: With Greg, with Greg Bischak, who is one of the authors of the 1978 book there.

MS. KOPPEL: Oh, yes.

CHAIRMAN BERTEAU: And the Center for Economic Conversion, we had a very lengthy meeting of about a half a day --

MS. KOPPEL: In where?

CHAIRMAN BERTEAU: In Washington.

MS. KOPPEL: In Washington.

CHAIRMAN BERTEAU: In our offices in Washington. And they provided us with a good bit of information. We had a very lively discussion about what can and can't be done here.

MS. KOPPEL: And this is just the book cover, and I'm sure they have the book from our state conversion. They were in touch with me and very helpful. And this is the conversion program in California that has been going on for many years as the Defense Monitor. I'm just saying that so you know where we get our sources.

Now, because of that, we have learned that -- and I'm taking a little bit in the past, but it won't last 30 years, I promise you -- we have learned that past experience, thought not always applicable, can prove helpful in solving today's problems. And we have substantial past experience. Some of our activities through teenagers or young adults during the depression of the '30s, we experienced what WPA --you know; I don't have to spell it out -- and the WPA has done for us, provided jobs quickly, lifted the people's self-esteem, and gave them hope for a permanent job.

In some of the programs people with talents advanced their talents in writing, music, art, and theater, and then became quite well known and could make a living. I'm not saying we imitate something, but we can learn from it.

Now, at the end of 1978, as I said before, William Winpisinger, he then was president of the International Machinists and Aerospace Union, together with three other labor leaders -- I'm not going to name them -- went to the Scandinavian countries. And one of the examples that's in my mind -- I didn't even have to go back and read it again -- was -- because the book is called Economic Dislocation -- plant closing, plant relocation, something that was very close to our hearts at that time.

And what they did in Sweden, in one instance, or several instances which he mentioned, there are three ways to deal with a manufacturer who says, "We cannot continue our plant." The government comes in, the workers of the plant come in, and the owners or managers, and they try to find out whether they could not change that decision made higher up. And I want to emphasize they are working it out together. Hopefully -- and I wasn't there, of course -- hopefully, nobody was looking down at anyone -- so with respect. So they sometimes found a way how that factory could continue profitably, or

profitably enough to continue.

The second possibility was for the workers to buy and operate the factory; the third, closing the factory, if everything else failed. And the workers were offered to avail themselves of new skills, skills and training for new jobs, without loss of income, because that was provided by the government. So there's an interchange, interaction between private ownership, workers, who really are the key to any business, whatever it is, and the government.

Now, another example I want to bring out, and that would not be very popular since I'm also indirectly talking to the Department of Defense, when Japan, after World War II, started to develop industrial potential, it was startling to observe the rapid economic rise of this country, which was mandated to adhere to a limit of 2 percent of GNP production [sic] for military purposes, how rapidly it developed.

In the meantime, the steady increase -- in the same time -- the steady increase in the U.S. military budget and in military production caused a productivity decline in our private sector. It also caused the loss of jobs, because these kinds of jobs, just like the lady before me pointed out, they are highly technical jobs. With technical jobs, you spent more money for salary because they need it, but it's not work-intensive. And that is what we need today.

So the consequence -- this is all the consequence of what we experience now, a very catastrophic economic situation. And I have some statistics here that sort of exemplify what I'm saying.

The Physicians for Social Responsibility, in March '92, in one of their pamphlets -- and I'm sure they researched it well; if not, you tell them they don't -- they said, "Each day in the United States 689 babies are born to women who have inadequate prenatal care, 848 babies are born at low or very low birth weight, 1,512 teenagers drop out of schools, 2,795 teenagers become pregnant, and 100,000 -- 100,000 -- children are homeless." That means each day.

Now, you as the Defense Conversion Commission, may not think that the aforementioned statements are relevant to your concern and program. It is our opinion, however, that loss of jobs by defense and military personnel cannot be treated separately from the nationwide unemployment problems. Your program for conversion and reemployment must blend with the civilian sector's solutions.

Indeed, in the State of Washington, we have been dependent on military contracts and we still are. We have military bases, but we also have loggers, construction workers, subcontractors, and small businesses whose livelihood hangs by a thread.

I also want to mention -- and then I'm practically finished -- the life of the un- and underemployed and homeless is one of hopelessness and despair. You cannot imagine -- I believe that much of the crime that's happening in the streets, or burning, is part of the result of it. And it is telling about our value system, our values.

When I read in the Post-Intelligencer, the Seattle morning paper, on August 29, 1992, and the heading in the business section was, "Economy slides as profits rise." And then, just a brief -- the explanation, which was longer, it said, "because corporate cost-cutting included staff, and payroll, and employment cutbacks, sent profits up to 2.1 percent to a record of $235 billion after taxes." And that is for the two quarters of this

year. That's another step --

MR. HANLEY: Ms. Koppel, we're quite a long way over. There are so many people --

MS. KOPPEL: Where are we? Whose talking to me?

MR. HANLEY: If you could sort of draw to a conclusion.

MS. KOPPEL: Well, I'm just saying it's a gargantuan task we must undertake together, and "together" is very important, business and government and labor, even the unemployed. Once people see a glimmer of hope, we will be able to establish the greatest asset for our country's future economy and international prestige.

Thank you very much.

CHAIRMAN BERTEAU: Ms. Koppel, thank you. I think we benefit greatly from -- and clearly you have been wrestling with this issue for quite some time. I think you've actually -- I wrote down several questions as you were talking, and you ended up answering every one of them as you went along.

MS. KOPPEL: Oh, I didn't mean to.

CHAIRMAN BERTEAU: I don't actually -- I don't need to ask them.

MS. KOPPEL: So I didn't run over really?

(Laughter)

CHAIRMAN BERTEAU: Let me assure you, you should not feel guilty in the least.

MS. KOPPEL: I do not.

CHAIRMAN BERTEAU: And I think we all -- we respect your input and we really appreciate it.

MS. KOPPEL: And I want to assure that we're going to follow your steps very closely. I hope we'll be in touch. I know we'll be in touch with the State of Washington.

CHAIRMAN BERTEAU: We will be.

MS. KOPPEL: Because, there again, we can only do it together.

CHAIRMAN BERTEAU: And I think we also have to recognize -- I mean, you've held out some very lofty goals and objectives for us there. We need to move towards them one step at a time.

MS. KOPPEL: Well, it's better to reach high. It's better to reach high.

CHAIRMAN BERTEAU: I absolutely agree.

MS. KOPPEL: And when I ask somebody for money, I always ask for $100 first before I get my $10.

(Laughter)

CHAIRMAN BERTEAU: Thank you very much.

MR. HANLEY: Thank you very much, ma'am.

COMMISSIONER DAHLMAN: If you had not run over, our chairman would have. He's more difficult to discipline than a witness. So we thank you very much.

(Laughter)

MS. KOPPEL: What is that?

CHAIRMAN BERTEAU: He's saying, if you hadn't run over, I would

have in carrying on the rest of our discussion.

MS. KOPPEL: But he sais he cannot discipline you?

CHAIRMAN BERTEAU: That's right.

MR. HANLEY: The next slot is occupied by two witnesses from MetaDynamics, Incorporated; that is, Dr. Delore Zimmerman and Mr. Dean Henney.

There should be room for both of you up there. I'm sorry we only have one microphone. If you could sort of pass it back and forth as you speak, that would be a help.

CHAIRMAN BERTEAU: Gentlemen, we welcome you. Appreciate your input. We did have a package that you provided us with ahead of time on Enterprise Homesteading, which I was able to look through on the way out here, and I look forward to hearing from you.

DR. ZIMMERMAN: Mr. Chairman and members of the Commission, we are pleased to have this opportunity to testify before the Commission. And I would like to especially thank Robin Higgins for mentioning the public hearings to me last month.

The Small Business Innovation Research information that we have to share offers an opportunity for a significant percentage of separating service men and women, and it lays out a system for job creation on a national scale. Your panel exists to review opportunities for service members, civilian DoD employees, and communities affected by military downsizing.

The reduction in force has created unexpected windows of opportunity for the men and women who are entering the civilian economy. Our focus groups indicate that a significant percentage of exiting service members are prepared to become job creators rather than job hunters. The American dream has a number of inherent parts: home ownership, strong family ties, and opportunities to raise one's standard of living.

Most, if not all, of us have given thought to the idea of owning our business. This entrepreneurial dream offers the hope of being in control, setting one's own course, and risking an idea in the hope of ultimate gain. Unfortunately, the lone entrepreneur must overcome a great many barriers before the idea can ever come to fruition.

The decision to risk one's own capital is daunting enough. Then comes the need for a professional business plan, financial projections, and marketing studies.

Other factors further inhibit the process. Let me provide an illustration. If you wanted to find out about job openings in Dallas, you could easily obtain a listing from your local Job Service office. If you wanted information on homes, any realtor could make the connections necessary to obtain listings. But if you were interested in starting a computer service business or owning a hardware store, where would you turn? How would you find out about business opportunities in cities nationwide?

Enterprise Homesteading offers those connections. Enterprise Homesteading will consist of a national entrepreneurial assistance system. Data bases within this system will consist of individual entrepreneur and community profiles that can be used to match the opportunities with resources. Individuals will confer with business advisors about their particular area of entrepreneurial interest, experience and training, available financial resources, and locational preferences. Communities will profile their

existing businesses and their future economic growth opportunity areas.

For instance, a rural Midwestern community might have a strong interest in establishing a telecommunications business center to process medical claims, or an urban inner city might recognize an opportunity for establishing a taxicab training academy along the lines of the London model. Cities and small communities are made up of unique concerns, demands, and potentials. What they have in common is a very real need for job creators.

In the course of our discussions with exiting service members, we learned a lot about transition assistance and the programs offered at bases nationwide. I have also met with Mr. Robert Stein, director of Operation Transition. The transition information presently offered is very thorough, in terms of preparation for reentry into the jobs market. Resume preparation, interviewing skills, and networking are discussed over the three-day course.

However, little direction or support is given to the 15 percent who want to become employers. Potential employers need information on business planning, accounting, marketing, financing, and opportunities. Enterprise Homesteading will offer just this sort of professional information.

The research and program plan offered by MetaDynamics holds immediate interest for service members departing active duty. On a larger scale -- and here I would ask you to consider our plan along the lines of federal labor, commerce, and economic development strategies -- we have prepared a systematic, straightforward plan of action for jobs creation.

How MetaDynamics can assist the Defense Conversion Commission: MetaDynamics would like to profile the RIFed service men and women who have a strong entrepreneurial desire. Enterprise Homesteading could become part of the transition assistance program. Our conservative projections indicate a potential profile population of 6,000 service members by the end of calendar '93. These are men and women who have the skills training, leadership, seasoning and experience, and financial stability necessary to turn their dreams into reality.

We have already conferred with economic development authorities in Pennsylvania, North Dakota, Minnesota, Washington and will meet tomorrow with Oregon officials. Our strategy with state development authorities and Small Business Administration officials will center on the preparation of profiles of urban and rural places willing and able to work with new entrepreneurs. Our immediate goal is the creation of individual and community profiles to begin the matching process.

The American dream is about opportunities. Enterprise Homesteading can help turn entrepreneurial ideas into viable job opportunities.

MR. HENNEY: If I may, I'd just like to say one thing about what we're doing. We're doing this for the Small Business Administration's SBIR program, the Innovation Research program, Department of Agriculture. The original impetus for this was to find a solution to why rural communities and small towns are lagging in small business development, and that's because they are lacking people primarily in the ages 30 to 49, mid-career professionals who are most likely to start businesses.

Subsequently, we found that people leaving the military are a large pool of

that. So that's how we got here today, I guess.

CHAIRMAN BERTEAU: I think you've raised a very important proposal. One of the things we're doing is looking at the adequacy of the transition programs that are there. I think the target population you've identified here is something that we definitely need to address. Your proposal is very clear in that regard. I would note that the two examples you use, if you're looking for a job, you can go to the Job Service bank; if you're looking for a home, you can always go to the Multiple Listing Service, 20 years ago you couldn't have done either one of those things.

MR. HENNEY: Yes.

CHAIRMAN BERTEAU: You would have had to actually fly to Dallas and find somebody to meet with, and you'd sit down in the unemployment office and go through a paper listing of all the jobs that somebody had come in and filled out, and then you'd have no idea what you were missing or not missing. And the same with home sales; you'd have to go to an agent to find that.

One of those was government-developed; the other was a response to a private sector opportunity where people could, obviously, make money on it. What you've proposed, in essence, is a similar approach, if you will. I guess the question I have for you is really, is this going to be driven by government responsibility, or, ultimately, would it provide an opportunity to be essentially a self-financing thing like MLS has turned out to be?

MR. HENNEY: We think it would be essentially self-financing, but there are some things at the state and community level that would probably help communities get ready to find the right opportunities. That's why we're meeting with a lot of development officials. We want the communities that people go to to be prepared to deal with entrepreneurs so that their success rate is increased dramatically.

CHAIRMAN BERTEAU: I'm certainly familiar with your observation about small towns. Eighteen years ago my wife and I moved into a very isolated town, and it was such big news that we made the front page of the paper: Two people moved to town. I mean, it doesn't happen here in Seattle, obviously.

Any other questions or comments?

(No response.)

CHAIRMAN BERTEAU: Thank you very much, gentlemen.

DR. ZIMMERMAN: Thank you.

MR. HENNEY: Thank you.

MR. HANLEY: The next witness is Mr. Paul Kostek, who is a senior design engineer with Sunstrand Data Control, Inc., and he is on the IEEE Engineering Manpower Committee.

CHAIRMAN BERTEAU: Welcome, Mr. Kostek. Kostek, is that how you pronounce it?

MR. KOSTEK: That's correct. Thank you.

CHAIRMAN BERTEAU: Close enough anyway.

MR. KOSTEK: Good afternoon.

A little bit about my background: I'm an electrical engineer; been in the business for 13 years, 10 of those in the defense industry. I made a conversion three

. years ago to the commercial market, voluntarily. Besides that I also chair the Manpower Committee for the IEEE. That's the Institute of Electrical and Electronics Engineers. It's a worldwide professional society of about 320,000; over 200,000 are located here in the U.S. We're chartered with monitoring the employment situation for engineers.

My testimony today will be focusing mainly on the impact of conversion on engineers, but we also feel some of these areas may be applicable to nonengineers also. There will be three areas that I will be addressing:

One is retraining programs; the other is business practices, and what I'm talking about there is how the Department of Defense carries out business and how that impacts how their defense contractors and other vendors carry out business; and, finally, a question of perceptions. It's an issue that engineers frequently deal with, in terms of leaving the defense industry and going to the commercial market, how they are viewed by potential commercial employers.

Regarding the issue of training and retraining, that's a very sensitive area, somewhat, in the engineering community. Engineers are constantly undergoing training of some nature, either off-hours classes or attending seminars. The question of training as a solution to making a conversion from defense to commercial is one that we do not believe is necessary.

What we would encourage is that the government make modifications to tax laws to give tax credits to employers who are bringing in engineers and finding that they need to provide some training to engineers, so that companies are encouraged to hire people, assess their skills, and then do the training.

One of the key things that we believe that is an issue right now is the question of timeliness. Jobs are being lost today for engineers. The development of a retraining program where we have to go out and do industry surveys to find out where the potential jobs are, where the skills are needed in the future, setting up programs or identifying programs that will meet the needs now, the time involved in that will not serve engineers or anyone else, really, being caught up in any of the layoffs that are taking place right now around the country.

So we believe encouraging firms to go out and hire people and, if necessary, provide them with any retraining or updating of skills to fit into their organization is a much better fit. We also believe that one of the key areas, when we look at if retraining programs do come in, one of the groups that we really will have to target will be the older, experienced engineers who are coming out of the defense industries, who may face difficulties not only because of their age but also because of the areas they've been working in over the last few years. Any retraining programs, if any are created, really might have to focus more on the older engineers and their concerns and needs.

Regarding the business practices, what we'd like to see, and we know this is taking place right now, is a change in -- a streamlining of the DoD practices, where we see less and less need for military specifications that have been for years and years put on the different vendors, an elimination of those, more of a use of the commercial practices, kind of a change in the methods and practices that companies work under, which would also be something that would help engineers, not only in terms of doing their jobs at their

present employers, but if they were put into a situation where they had to make a change, this would be a lot easier for them, because they would have the commercial practices under their belts, the experience that many people may be looking for.

We also believe there will be a need, obviously, along the way to possibly see some changes in antitrust law to allow greater teaming of firms. The word I hear from people is that what's going to be taking place is that there will be smaller and smaller numbers of firms actually doing defense, and they will have a greater need to work together. So there will need to be some modifications, obviously, to encourage firms to do defense and also commercial work together.

We also believe there is a need for guidance from the Department of Defense to show contractors where the future is going, what products are needed, and which vendors fit in and which ones don't, so that companies can somewhat try to do planning for the future, so that they can decide if there are business opportunities for them in the new defense world, or whether they would be better suited to go into the commercial world, or whether they would be able to develop dual use products that would allow them to move into both areas.

Finally, the whole question of what I call the practice of engineering is a very difficult area for people making the transition from the military to the commercial world. There is a perception that engineers who work in the defense industry are used to working on one particular item and working on that item for six years.

What I believe, personally, is that engineers are very adaptable, and they have adapted, as they have into the defense community, to the needs of the defense contractors and also for the people who work directly for the government on how government projects are worked.

We really believe it's important that the Department of Defense, organizations, professional societies like the IEEE work together on trying to give examples of how engineers have made conversions from military to commercial, how companies move people around within their different divisions, and how people still continue to perform their jobs.

Because what we find, though, is engineers are having a very difficult time when they are unemployed making that move into the commercial market, because everyone is just terrified that they will bring this person, and the first thing they will look for is, where are the MIL specifications, where are the documents how to do these things.

We believe engineers are adaptable. There are examples now of companies that are actually applying military technology in the commercial market, using the same people to do this. And people are able to meet all of the deadlines and all of the requirements.

In closing, what I would finish with is just kind of a summary of my points. What we really feel is that there is not a strong need for large government intervention in programs. What we really feel there is a need for is guidance, in terms of directions where DoD perceives itself going, then the vendors can do their planning from that, and also continued work in loosening up antitrust laws to encourage companies to work together.

Finally, the whole question of perception. Working in the community,

because I believe this is not just an issue for engineers, it's probably an issue for anyone coming out of the defense community. People are concerned about salaries. People are concerned about work habits.

In the detailed testimony that I have submitted, I've taken some statements from the Office of Technology Assessment, after the Cold War study, and they point out these things. They have looked at salaries for engineers in the defense industry and out, and they find the salaries are not that different, but, again, we're dealing with the perception.

So we believe those are the areas that must be worked. Thank you.

CHAIRMAN BERTEAU: Thank you, Mr. Kostek.

It was pointed out to us earlier today that, in fact, engineers, what they are converting is a process that approaches problems and that that's not so difficult. And I think your testimony has reiterated that.

You mentioned the need to promulgate examples, and one of the things we're looking to do is in fact to provide that service. We are aware of some examples. If there are some that you are specifically aware of, perhaps they are in your written statement, but let me invite you to let us know any others that you think as well. And you might even invite your colleagues to submit them as well.

The approach you take on the tax credit for hiring and training a defense worker, how would you determine eligibility under that kind of an approach? Would you give the fired worker a handout?

And the reason I ask is, for some companies, including your long-time defense employer, there is fungibility back and forth between the defense and the commercial side, to some extent, so it may well be the person laid off had no relationship with the defense contract being terminated. Is that person equally eligible with somebody who was in fact a direct employee, or where do you end up drawing the line?

MR. KOSTEK: That's a good question. I believe we're really looking at the people who are directly impacted.

CHAIRMAN BERTEAU: As the first target, if you will.

MR. KOSTEK: As the first target; right. In fact, I believe the Defense Appropriations bill had a rider in there or a requirement that asked that companies winning defense contracts provide so many jobs or first right of hire to people who have been cut back previously. And they had a requirement, I believe, of five years. If you had been with a defense contractor at least five years and been let go, you should get a first opportunity to be hired by a firm that has just won another defense contract.

CHAIRMAN BERTEAU: And it would be your view that something like that would be an appropriate breakpoint?

MR. KOSTEK: Yes, I believe so.

CHAIRMAN BERTEAU: Any other questions or comments?

COMMISSIONER LAVIN: Yes.

CHAIRMAN BERTEAU: Okay.

COMMISSIONER LAVIN: It's more of a comment, I guess, than a question. I appreciate your comments about the adaptability of engineers. As we've gone around the country, we have heard, on a seemingly consistent basis from defense

contractors and others, that the engineers need a lot of training when they go from military to commercial and they are not as adaptable as we would hope.

It hasn't made much sense to me through the process, and I appreciate the fact you've confirmed that to us. Based on your experience and the experience of your members, what do you think of the adaptability or the transferability of the managers? Are they the ones that need the training? Are they the ones incapable?

MR. KOSTEK: Well, I won't answer for myself, personally, but I know there have been a few studies done that have shown that management has a big problem, in terms of making that transition, just because they are so used to working by certain sets of rules that are suddenly going away. The creativity of managing an organization or the lack of a need for so many managers does definitely impact how people view making the transition from the military to commercial sectors.

CHAIRMAN BERTEAU: Any other comments?

(No response.)

CHAIRMAN BERTEAU: Thank you very much. We appreciate it.

MR. KOSTEK: Thank you.

CHAIRMAN BERTEAU: And, again, we invite you to --

COMMISSIONER MAY: (Inaudible) did he make the transitions from (inaudible).

A PARTICIPANT: (Inaudible).

MR. HANLEY: The next witness is Mr. Ed Cruver, who is standing in for Mr. Larry Malo from the Washington State Employment Security Department. Mr. Kruver is the director of the Dislocated Worker Programs.

Is that right, sir?

CHAIRMAN BERTEAU: Mr. Cruver, welcome. Of course, we had the opportunity to have some discussion with you at the Department of Community Development session this morning.

MR. CRUVER: Yes. I appreciate that. Looking at your schedule, it's nice to see that you are getting around, and, in a very limited period of time, you're covering a lot of ground. And I think that's -- appreciate your taking the time to do that and trust you're finding it helpful. I thought we had a very good session this morning.

A lot of what I'm going to say now, I'll try to perhaps kind of reiterate some of what we covered this morning, maybe highlight a couple of points and keep the time down, since you're running behind.

CHAIRMAN BERTEAU: We would appreciate that. I'm sure the folks waiting would appreciate it even more.

MR. CRUVER: Right. As we left this morning, Michael Ochoa mentioned something about manufacturing being a strong base, devloping products being a strong base and I think there is one other thing to look at and that is the human resource and the human skills, and that's the other base I think that we need to consider and look carefully at.

Our business in employment training is to provide -- see that people make a transition of jobs, that they get training when it's necessary. Sometimes that training is just how to get a job, and sometimes it's rather elaborate and

takes some time.

I'd like to reiterate some of what I said this morning. We do have systems in place; in this state we have systems in place. We have an overall state system that is responsive, from the point of view of what's available in education and vocational and skills types of training that's needed.

We have just recently in the state put into place a Workforce Training and Education Coordinating Board which is managed by individuals from all the various sectors that are involved in training and retraining. And the idea is to provide a state policy and a state focus on what needs to be done. So I think that's kind of the cap that's coming along that's going to make sure that we have a good, coordinated system.

The other thing that has happened already, because of our local PIC system and its diversity and its response, community-by-community response, is that that PIC system also ties in closely with the economic development system. And you will find in most all communities that the Private Industry Council board has the economic development chair on the board and vice-versa. That's a very common thing in the state and particularly common, I think, in the areas where we're having the difficulties with defense downturn. That's true in every area.

In addition, and I mentioned this this morning, but I'd like to make the point again, our Private Industry Council systems understand that, while they may be focused on a particular county or sometimes one or two counties, that in fact the defense downturn -- and there are other areas, too. Timber was another example of where there is more than one area where things are happening, or the area is broader than what one particular PIC serves, and we also have the systems in place where we can do things on a regional basis. So, again, I think we're doing that.

There are things -- the way that we received grants has made it difficult to do that at times and to allow those kinds -- flexibility in those kinds of systems so that we can do that, so that we can get funds to focus that way is important.

Again, when we apply for additional funds, the needs statement that we provide is one that often shows broad needs that are moderately specific rather than very specific, but they are very real nonetheless. I think you saw some evidence of that in what has happened here today and also earlier this morning and I think probably with some of the other business groups you've been meeting with. We need a response. We need to be able to get funds based on that type of response so that we can run the sorts of flexible programs.

The programs that we have are investments that do get results. Employment training programs generally are placing 70 to 90 percent of the people that are served in the programs within 90 days of the time that they are completing a program, whether it be a short- or a long-term program. So I think that they are investments that work.

However, one of the things that we talked about and Dr. Dahlman brought up this morning was our ability to be able to pool funds together and use them in more flexible sorts of ways, particularly on a local basis, would be extremely helpful. We have some local models that we're working on right now and a couple of counties in the state where economic development and training and education are working together.

If we had more flexibility in our ability to pool funds together on those projects, I think we could develop some models which could be useful in a broader sense, perhaps regionally and even nationally. So being able to do those kinds of things would be extremely helpful and may well be part of proposals that we send on up the line as we're asking for funds, at least as suggestions of how we might be able to use funds.

That includes going as far as looking at economic development funds, education funds, employment training funds, and unemployment funds. All of those things are areas where with more flexibility we could do more and probably do it for less money overall.

Those are my comments at this point. If you have any questions or --

CHAIRMAN BERTEAU: I appreciate that. I think what you show there are some of the benefits of the discussions we had. Let me offer that, as you reflect upon this, if there are any other ways in which you think we can help in that regard or make recommendations in that regard, feel free to provide them to us, because we look forward to them.

MR. CRUVER: Good.

CHAIRMAN BERTEAU: Thank you very much, sir.

MR. HANLEY: Thank you.

The next witness is Mr. Bill Jenkins, director of Fraser, Inc.

Is Mr. Jenkins here?

MR. JENKINS: (Inaudible).

MR. HANLEY: Good.

Good to see you again, sir.

MR. JENKINS: Yes, sir. (Inaudible).

MR. HANLEY: Great. Thanks a lot.

MR. JENKINS: (Inaudible). I hope you can see it. (Inaudible).

CHAIRMAN BERTEAU: Thank you, sir. Welcome.

MR. JENKINS: Thank you, Mr. Chairman.

My name is Bill Jenkins, and I'm a director of Fraser, Inc., a Seattle company about 40 years old, 45 years old. We build boilers. We fix engines. We are affected by the drawdown, but that's not what I'm going to talk about. It has been discussed enough.

I think I'm going to talk about primarily paragraph 3 of the memorandum which established this committee and some of the things that are your duties and things that you have to do. And I'm going to relate these comments to my experience on the T-AGOS ship construction program, which started in 1981, and the monohull portion in 1991. The SCN funding ran out. The attachments you have show a couple of pages from my ego file which confirm what happened and why I'm talking the way I am.

The T-AGOS program was the first attempt by the Naval Sea Systems Command of the Navy to do things the commercial way. It was eminently successful. MIL-Specs were not permitted. MIL-I, MIL-Q was not permitted. The program came in, was done, was finished. The ships performed admirably, and my staff consisted of three people. We could not contract because, under the law, SCN funds may only be expended by the Supervisor of Shipbuilding, but we did everything else. So four people did the job

of what normally the Navy would apply 25.

This didn't sit very well with the establishment. So at the end of the program, as of 1986, when the next phase, the SWATH-hull, was being considered, the Navy retreated and MIL-I and MIL-Q crept back in. This is what I want to talk to you about, as you discuss and plan for the retraining of people and also for the one paragraph which struck me in particular, the paragraph in your assignment which says, "Cooperative ventures between the federal government and companies predominantly engaged in defense-related activities."

This is key. But if you do that cooperative venture with people who have been trained the way the government normally trains people to do business, you're doomed, unless you mandate, this committee mandates that such joint ventures utilize only commercial standards.

The gentleman two ahead of me from IEEE alluded to this. To me, it's extremely important that in any discussion you have you mandate that only commercial standards be used. The retraining of individuals to use these standards is not going to be easy. It's a real challenge.

The second thing which occurred, which I experienced, which I think is appropriate to your duties, is the fact that the government, in its attempt to safeguard the taxpayer's dollar, wastes more money in procurement than it saves. Procurement rules must be changed, and nobody can bring them into the commercial sector or bring people who think that way in without thorough retraining. This may be outside your purview, but I think it's very true.

The stranglehold that bean counters and lawyers have on procurement must yield to reality. The word "responsive" must get back into their language. "Low bidder" is ridiculous; "low responsive bidder" is king. And this must be done.

My last comment, and this is -- I'm not picking you out personally, sir, but I'm going to dump on you anyway.

COMMISSIONER LAVIN: (Inaudible).

(Laughter)

COMMISSIONER BERTEAU: (Inaudible) lawyer (inaudible).

MR. JENKINS: With all due respect -- no, Mr. Lavin. This is addressed to Mr. Lavin. With all due respect, sir, do we as a nation need a merchant marine, or don't we? As a representative of the Department of Commerce, I'm going to ask you that question. I think we do, and Desert Storm bears me out.

If I am correct, I strongly feel your department should promptly and aggressively push for some level of revitalization of the U.S. Merchant Marine. For one thing, it would go a long way towards mitigating the impact of the Department of Defense downsizing on the U.S. shipbuilding industry.

Time is of the essence. The decision as to how much shipbuilding capability this nation needs and where it should be located is long overdue. If such a decision isn't made quickly, there won't be any shipyards worthy of the name left to worry about. And I don't think that's in anyone's best interest.

I thank you for entertaining my thoughts, gentlemen.

CHAIRMAN BERTEAU: Mr. Jenkins, you've been most direct and clear,

and we appreciate that.

I think your comment about using only commercial standards prompts me to ask one question. If I were to say the following, tell me if you would agree with this, that the greater we can cause the defense business to rely on commercial industry, the stronger we will be.

MR. JENKINS: I agree with you 100 percent. There are exceptions to any broad statement like that, of course, because there are certain technicalities which must be addressed only in very, very, very narrow terms, and commercial specs are broad, and commercial standards are broad. They allow interpretation; they allow imagination. Military requirements of a specific nature, ballistic missiles and so forth, do not allow any kind of interpretation. The specification calls for this, and that's the way it has to be.

So there is a limit. Your statement cannot be all-inclusive.

CHAIRMAN BERTEAU: Right. I recognize that.

Any other questions or comments?

(No response.)

MR. JENKINS: Mr. Lavin didn't answer my question.

COMMISSIONER LAVIN: No, that's (inaudible).

COMMISSIONER DUBE: I was just going to point out, I thought maybe Doug didn't want to say, "Not on my watch." But I would point out, it's another government department that really has the responsibility for that one, the Maritime Administration, rather than the Commerce Department. But I think Doug didn't want to just (inaudible).

MR. JENKINS: Okay.

CHAIRMAN BERTEAU: That's in the Transportation Department. In fact, there was a tremendous set of meetings earlier this year in Washington on that very issue that, ultimately, I'm not sure that it bore fruit. But we ought to take a look at that, in terms of what the outcomes were.

MR. JENKINS: Well, I'm sorry if I put you on a spot you don't deserve.

CHAIRMAN BERTEAU: That's the reason we're here.

MR. JENKINS: But the question remains.

CHAIRMAN BERTEAU: Yes, sir.

COMMISSIONER LAVIN: I'd be happy to carry the message back.

COMMISSIONER DUBE: And it's good for him.

CHAIRMAN BERTEAU: The question is a very legitimate question, yes.

COMMISSIONER DAHLMAN: You'll be happy to hear that this is a very good commission. We only have one lawyer and one bean counter.

(Laughter)

CHAIRMAN BERTEAU: And, in fact, one economist and one engineer.

(Simultaneous speakers.)

CHAIRMAN BERTEAU: Thank you very much.

MR. HANLEY: Several English teachers, I'd like to point out.

(Laughter)

MR. HANLEY: The next witness is Mr. Lyle Anderson. Mr. Anderson is the state director of the Small Business Development Center at Washington State

University.

Nice to have you here, sir.

MR. ANDERSON: Thank you.

CHAIRMAN BERTEAU: Mr. Anderson, we appreciate your coming down.

MR. HANLEY: Apologize. We're a little bit late, but we're catching up.

MR. ANDERSON: I think this is great.

CHAIRMAN BERTEAU: I think we're going to fall back on this guy. Let me just finish passing these out here. I assume it's two different things here, so we'll catch them all.

Paul, I have an extra one for the record here.

MR. HANLEY: That's good.

MR. ANDERSON: Mr. Chairman and members of the Commission, thank you very much for inviting me here today.

My name is Lyle Anderson, and I am the state director for Washington State's Small Business Development Center program. And I'm also a member of the executive committee for the National Association of Small Business Development Center. I'm representing the interests of both of these organizations at this hearing today.

I have distributed copies of my testimony, as well as copies of a position paper written by Mr. Gregory O. Higgins, Jr. He is state director for the Pennsylvania Small Business Development Centers.

I understand that the Commission is interested in issues related to the changing roles of defense and their potential effect on impacted communities. Part of that impact, especially as it relates to military base closings, reductions, and procurement adjustments, will directly affect the economic vitality of the surrounding communities and businesses.

As part of the defense conversion process, I urge the Commission to consider supporting the creation of a defense adjustment assistance program that is designed to provide direct assistance to small and medium-sized businesses operating in the impacted areas.

As addressed in Mr. Higgins' paper, evidence suggests that, in addition to losses in civilian employment resulting from these base closings, a large number of firms in the impacted area will experience significant decreases in earnings and in employment. Furthermore, the impact of base closings and the additional reduction of facilities, combined with reductions in procurement in this admittedly already difficult economic period, create a very dangerous environment for the survival of many small firms.

Faced with these economic conditions, businesses must determine the impact these closings and adjustments will have on their operations, their markets, their products, and their margins. Again, as pointed out by Mr. Higgins, and I quote here, "While large firms most often have the financial resources or the in-house expertise to develop and analyze information required for such strategic decisions, most small and medium-sized firms do not. It is also likely that many, if not most, do not have the resources to purchase that expertise."

To address these issues, I'd like to focus my remaining remarks on two

areas: first of all, the ability of the national Small Business Development Center's program to implement an adjustment assistance program for defense-dependent firms; and, secondly, the ability of state programs, like our Washington State Small Business Development Center, to provide services to these same defense-dependent firms.

Just by way of brief history, the SBDC program was established by Congress to provide business development and technical assistance to small and medium-sized firms facing market opportunity, on the one hand, or, as in what we are talking about in terms of these reductions, adverse conditions. The program is built upon the premise that critical information and expertise can be transferred to the small business owner-operator to improve the potential for that operator or that owner's success.

Additionally, the program is designed to increase the operations and decision-making skills of the small firm's leadership. And I might stress that last part, to increase the decision-making skills of small and medium-sized business owners. This is not a consulting service; it's a counseling and advisory service aimed primarily at using education and training and one-to-one advice to change the abilities of the decision-makers within a business to act effectively.

Building on these premises, the national SBDC program has developed a set of special capabilities to serve the business sector. For example, there are more than 700 SBDCs operating throughout the country today, with specifically tailored programs operating in each of the 50 states, plus Puerto Rico and the Virgin Islands.

Most of these programs not only provide one-to-one business skills development counseling and training, which, by the way, is the very core of this program, but also provide special assistance in areas such as nondefense procurement, export market development, product development, technology development, and commercialization, as well as ties or linkages to other businesses and technical programs designed to assist small businesses.

Let me use our Washington State program as an example to illustrate the depth and the breadth of our services. We currently operate 16 Business Counseling Centers, both in urban and rural and even remote rural areas within the State of Washington. We also operate 25 Business Training Centers, providing seminars and workshops through 25 of the state's 27 community colleges.

The counseling centers are responsible for serving more than 6,000 small businesses each year; 2,500 of these businesses receive what we refer to as in-depth counseling designed to positively affect the way these firms do business. Yearly analysis of these firms supports the conclusion that businesses provided with in-depth counseling assistance will create more than 750 new jobs each year and will average some $25 million in new investment each year.

Now, while we make those statements and we feel that we can support those statements, I would also add that we work very closely, in Washington State, with other state agencies, with state agencies themselves, with our economic development councils, with our chambers, and so on. So, really, when we talk about a end product like this, we're talking about the collaborative efforts of a lot of organizations contributing to that businesses success.

In addition to our basic business services, in our program here in the State

of Washington, we also operate an Innovation Assessment Center. This center evaluates new inventions with an objective of determining the product's potential for commercial success. We operate a Small Business Export Assistance Center. And we act as the Washington State regional affiliate for the NASA Regional Technology Transfer Center, located at the University of Southern California.

Through the NASA RTTC, we are able to provide firms with access to information and expertise inventoried not only at our higher education institutions within the State of Washington but also NASA and the other federal laboratories, and, most specifically, those federal laboratories that are part of the FLC, or the Federal Laboratory Consortium.

Additionally, we work closely with other business and technical assistance providers throughout the state, including our own Department of Trade and Economic Development and the department that you heard from this morning, the Department of Community Development, local economic development councils and associate development organizations, and Private Industry Councils.

Finally, we operate a very effective Business Research Center, whose focus is to use research to solve small business problems or identify strategies for business development. And that kind of research that I'm referring to here is very specific, pragmatic, practical research aimed at solutions that can be used in the marketplace.

In the State of Washington, therefore, we do have in place a business infrastructure capable of delivering general business development services and one that can be enhanced by special programs to serve critically defined areas. As pointed out by Mr. Higgins in his paper, with additional funding, we can have the capability of developing and implementing a specific business development adjustment assistance program for defense-dependent firms.

This program would include the following elements: First of all, the development of preliminary information on potential area or company impact. Using our research capabilities, SBDCs can examine proposed base closings and reductions in procurement at the local level to determine the probable impact on the impacted area's small firms. Already, the General Accounting Office has done some work in this area, and this could be enhanced at the local level, at the impacted area.

Secondly, development of parameters of the adjustment program itself. The SBDCs can identify other adjustment program providers to assure nonduplication of effort and to ensure the program is designed to complement other assistance being offered.

Thirdly, outreach to advise small firms of assistance available. The SBDCs, in cooperation with other state, local, and private sector organizations, can organize a series of workshops and conferences to alert small business and medium-sized firms on the potential impact of base closings. This is a good time, also, at these workshops, to familiarize participants with the range of services available to assist them.

Fourthly, and I think most importantly, as it relates to the SBDC's capability, individualized or one-to-one assistance to small and medium-sized firms for development of a business adjustment strategy.

For example, SBDCs can assist firms to determine impact on existing firms' markets, products, and services; assess other market performance opportunities; determine

the potential for innovation or diversification; develop accurate projections for market development; identify sources of financing; link the firm with other organizations who can provide assistance, as we talked about before; and, finally, provide assistance, as well as linkages to other programs for displaced individuals considering starting their own business or the entrepreneur.

At both the national level and the state level, therefore, SBDCs are well positioned to contribute to a defense conversion program aimed at providing adjustment assistance to defense-dependent firms. We would look forward to the opportunity to work with the DoD's Defense Conversion Commission to solve problems created by these new mandates for defense.

Thank you very much.

CHAIRMAN BERTEAU: Mr. Anderson, thank you.

I would point out -- you may already know this -- I would point out for your benefit and the benefit of others, if you don't, that in fact we, in mid-October, do have scheduled a meeting in Washington with Dr. Baker, who is the president of the SBDC Association. And Mr. Higgins will be coming to that meeting as well.

So it gives us an opportunity to sort of digest what you've laid out here today and continue that discussion with them, because I think the subject you've touched on certainly warrants some additional discussion and thought.

Would it be your advice that -- I mean, clearly, your programs are targeted at virtually anybody who needs them and can benefit from them. I haven't read Mr. Higgins' proposal yet, but, for defense-impacted areas, essentially, the definition that you would apply -- and I'm asking this as a question -- if you're impacted within that area, regardless of whether it's a direct or an indirect impact, you would be eligible for the kind of program assistance that you have here?

MR. ANDERSON: Yes, that would be the thing that would differ in our particular approach. If it's affected, whether it's directly or indirectly, we would work with that business, yes.

CHAIRMAN BERTEAU: Other questions, comments?

COMMISSIONER MAY: Are you familiar with the 4 September Wall Street Journal article?

MR. ANDERSON: On the business development centers?

COMMISSIONER MAY: Small business development centers are under siege.

MR. ANDERSON: Yes. Yes, I am.

COMMISSIONER MAY: Some critics contend that the centers are merely a way for universities to increase their funding.

MR. ANDERSON: Yes. Yes, I'm very aware of that article.

CHAIRMAN BERTEAU: How would you respond to that?

MR. ANDERSON: Well, I think one of the things is that the National Federation of Independent Businesses, which is one of the organizations that is referred to in there --

COMMISSIONER MAY: The main lobbying organization for small businesses.

MR. ANDERSON: Right. Right.

COMMISSIONER MAY: Is your biggest critic.

MR. ANDERSON: Is our biggest critic, and it took a position on the SBDCs when they were started 10 years ago. Ten years ago, the program was primarily an academic program with what I would refer to as very limited trickle down effects.

If you would look at our program today, for example, I mentioned that we have 16 centers that we're operating in the State of Washington that are counseling centers, every one of those counseling centers is staffed by a nonacademic counselor. And by that I mean they are MBA, terminal degree, minimum five years' experience as either owner or operator of a business. They are "rubber hits the road" kinds of counselors and advisors; they know what's happening.

Now, that is a change that has taken place. I don't really think that the article captured that change but relied very much on what the history of the organization has been in its very early stages, as opposed to the evolution of the organization in the last decade.

COMMISSIONER MAY: How would you measure the success that you have achieved over the last decade? Do you have goals that you try and achieve and you measure your success in reaching these goals, or is it more subjective?

MR. ANDERSON: Well, basically, we would hope it's not subjective. We are part of the overall economic development activity that goes on in a partnership between the public sector, as represented by federal and state government, and higher education, in our case, as represented by Washington State University and the community colleges.

But when it comes to our goals, we really look at investment creation and job creation and job stabilization. We track that very carefully. We have a follow-up evaluation method where our clients tell us whether in fact we did make a difference in their lives, and we match that particular positive rating to the investment and job creation they indicate they have accomplished. And that's how we measure the success of the program.

COMMISSIONER MAY: Could you share that data with us? Could our staff have access to that?

MR. ANDERSON: Yes, we certainly can. Both at the national level, since we do do a national impact study, and we could certainly do it for Washington State.

COMMISSIONER MAY: We appreciate it.

CHAIRMAN BERTEAU: We'd be delighted to get that. I think that would be marvelous. Thank you very much.

Any other questions or comments?

COMMISSIONER DAHLMAN: A lot of the growth in employment in the 1980s was in small and medium-sized businesses. What was it that you did right then that you don't do right anymore?

MR. ANDERSON: When did we stop doing right? I guess --

COMMISSIONER DAHLMAN: Well, there isn't that growth anymore.

(Simultaneous speakers.)

COMMISSIONER DAHLMAN: The growth has stopped, that's my point.

I mean, we don't see a lot of growth in employment in small businesses anymore. I don't know really what happened to start-up of small businesses, but I bet it has gone down significantly from the '80s.

MR. ANDERSON: Yes, it has gone down significantly from the '80s.

COMMISSIONER DAHLMAN: So that's my question. I'm sure you take credit for whatever good happened in the '80s. So what is it that you don't do right anymore?

MR. ANDERSON: Okay. Well, I will change what we don't do right to we're doing it right but there's a different mix out there for us to deal with. And the primary change that you see is, during the '80s you had a tremendous reduction activity going on in large medium-sized businesses. And they are now -- we have been entering a time when there's a much higher competition, especially for skilled workers and skilled talent.

As you have that kind of thing happen, then naturally you're going to have people stay with larger corporations, with larger businesses because of salary and security and so on, and you're going to see a corresponding reduction in the number of businesses or the number of individuals that are willing to take on the risks, the very high risks, of entrepreneurship and new business start-up.

But I guarantee you, as we go into what we're experiencing now at this particular period, with the economic downturn and with the reallocation of funds away from military spending, and so on, we're going to see significantly renewed initiatives when it comes to entrepreneurship. And we'll be there to assist them.

CHAIRMAN BERTEAU: Any other questions?

COMMISSIONER DAHLMAN: Good luck. I hope it works.

CHAIRMAN BERTEAU: Thank you very much, Mr. Anderson.

MR. ANDERSON: Thank you.

CHAIRMAN BERTEAU: We were first advised of you when we were at a previous hearing, and that's why we made sure that we invited you here, and I think that was a wise decision. Thank you very much.

MR. ANDERSON: Well, thank you. Enjoyed being with you this afternoon.

MR. HANLEY: Is Nicolas Licata or Cynthia Sullivan here, by any chance?

(No response.)

MR. HANLEY: That being the case, it appears that Mr. Anderson was our antepenultimate witness. We can have a break now or just run the last two.

CHAIRMAN BERTEAU: Mr. Hanley, we took a poll earlier, at the beginning of Mr. Anderson's testimony, and, by a veto-proof majority, we have decided to take another break.

MR. HANLEY: Another break it is. Ten minutes.

(A recess was taken.)

MR. HANLEY: We are a few minutes ahead of time, which is nice. The next witness is Ms. Frankie Montague, the Veterans Employment representative from the Department of Human Resources.

CHAIRMAN BERTEAU: Is that Montaque?

MS. MONTAGUE: Montague.

CHAIRMAN BERTEAU: Yes, ma'am, you've been very patient and I certainly appreciate it.

MS. MONTAGUE: Thank you. I'm Frankie Montague. I'm from Southern Oregon, and I am representing the average person.

I work in Job Service, and there are two groups of people who I am currently seeing who are looking for work, and they are veterans, men and women who are coming out of the military, who are moving to our area because it is so beautiful. They have been there on vacation, which is delightful.

However, finding jobs for some of these people, who are educated, who perhaps have some skills, is very, very difficult. As I understand it, they are not eligible for anything through the dislocated worker program, so it isn't possible to give them some kind of education or something to transfer skills that we're able to help them with employment. And in Southern Oregon we have several businesses who are federal contractors who have downsized, and I am seeing men and women veterans from those facilities who are virtually displaced. Then I am seeing these people homeless and on the streets. And it's the first time in, oh, the last 15 years I've seen so many women homeless on the streets, lots and lots and lots of them.

So what we need to do is to either have some kind of training programs, some money for training programs, tax credits, things that can get these people into some kind of training to get them into positions that are -- they are self-sustaining. This probably is the other 85 percent who are not the engineers, who are not just your average person on the street, in all of these multitudes of unemployed people who we are seeing.

I'm only seeing the veteran population, so you can imagine the other people in Job Service who are seeing non-veterans are equally flooded with that type of thing. And that's my purpose today.

CHAIRMAN BERTEAU: What would you recommend that we should recommend in that regard?

MS. MONTAGUE: I would think this would be extremely important, because these are the largest masses of people. And most of them who I see, military type skills are not transferable into the private sector. They have done things that simply are not, or the private sector does not accept them as transferable skills.

CHAIRMAN BERTEAU: Earlier today, in the roundtable discussion that was hosted by the community development folks, there was some discussion that some of the skills are transferable, but many times the military people, because of the kind of environment they have been in, don't have very good ability to realize some of that transferability and take maximum advantage of it.

Is it your feeling that, in addition to actual retraining in terms of skills, that there is some value in terms of training people in how to take advantage of the skills they do have to fit better in the commercial market?

MS. MONTAGUE: Oh, absolutely. They would need to be tested and retrained, that type of thing. The public view of persons who have been military trained is very poor. They just automatically think, "I will not accept someone with military training." That is most unfortunate.

CHAIRMAN BERTEAU: I guess I'm maybe somewhat jaundiced in my view. Do you think that that belief is left over from many years ago?

MS. MONTAGUE: Yes, I truly do.

CHAIRMAN BERTEAU: Clearly, we've seen, over the last 20 years, as we've first gone to the all-volunteer force and then, finally, begun to be able to draw only upon, essentially the best applicants, I think there has been a dramatic change in that regard. But what you're saying is perhaps some public education, in terms of the kind of people that are coming out, might also be useful here.

MS. MONTAGUE: Absolutely. We're seeing our street people dramatically increasing daily, families. There was a time you would see -- in our area, you would see an occasional street person, but it has gotten to the point that, under every bridge, everywhere there are people, women and families. Some of it is directly related to these kinds of things that are happening, people who are willing who simply cannot find employment.

CHAIRMAN BERTEAU: Any other questions?

COMMISSIONER MAY: I thought -- what kind of veterans are these, people who have just left the service after their enlistment or --

MS. MONTAGUE: Well, I see all veterans. So some of them are that; some of them who are directly involved with the downsizing, and I always ask them that.

COMMISSIONER MAY: But I thought they were eligible for --

CHAIRMAN BERTEAU: If it's a voluntary layoff. If it's a voluntary layoff, then they aren't eligible dislocated...

(Simultaneous speakers.)

MS. MONTAGUE: They are not eligible.

COMMISSIONER MAY: Yes, but the question is, having to do with VSI and SSB. It depends on the state, as I recall. it's the state that determines their eligibility. It's the State of Oregon.

MS. MONTAGUE: It very well may be. I thought -- I have not worked with the dislocated worker program, but I thought that that was more of a federal program with certain federal guidelines.

COMMISSIONER MAY: I believe the money comes from the federal government.--

MS. MONTAGUE: Infiltrated into each state.

COMMISSIONER MAY: -- but the state has the final determination in some aspects --

MS. MONTAGUE: As to how it's to be used?

COMMISSIONER MAY: Commissioner Higgins may be able to straighten us out on that.

COMMISSIONER HIGGINS: I think I missed the beginning of that.

MS. MONTAGUE: Having to do with people who are -- in the downsizing of the military, people who are coming out of the military who are not eligible for dislocated worker type programs.

COMMISSIONER HIGGINS: That's true, it is, unfortunately, at least for the time being. And we and the Department of Defense realize that it is becoming a

problem. But, unfortunately, the way it is written now is that the states --

COMMISSIONER DAHLMAN: Department of Labor.

COMMISSIONER HIGGINS: What did I say?

COMMISSIONER DAHLMAN: You said Defense.

COMMISSIONER HIGGINS: Well, the Department of Labor and the Department of Defense are working it out together.

COMMISSIONER MAY: She said, "We and the Department of Defense."

CHAIRMAN BERTEAU: He and we thought you said, "We in the Department of Defense."

COMMISSIONER HIGGINS: Oh, no. We, in the Department of Labor, and those in the Department of Defense, know that this is a problem. However, at this point, the law does designate and the way this is given is that the states, as they do with income tax, for example, view this in a different way. And each of the states, unfortunately, sets-- MS. MONTAGUE: Their own guidelines.

COMMISSIONER HIGGINS: -- the guidelines.

COMMISSIONER MAY: Well, that's my point. She needs to work with the State of Oregon rather than the federal government, apparently, to --

MS. MONTAGUE: Evidently.

CHAIRMAN BERTEAU: Although, Charlie, it might be--

MS. MONTAGUE: That, in itself, would not resolve the problem. That is just small portion of it.

CHAIRMAN BERTEAU: It might be that we want to look at the question of whether or not there should be a federal requirement that would supersede the authority of the states in that regard and what value that might have.

COMMISSIONER HIGGINS: That's correct. And that has been brought up before.

MS. MONTAGUE: Has it?

COMMISSIONER HIGGINS: And I think not only to us, as a commission, but to me also, that that is a concern. Some people will argue, perhaps rightly, that that was not the intent of Congress that it turn out to be valued in different ways by the different states. So that's something that we can certainly look at.

MS. MONTAGUE: Anything that -- vocational type training -- anything that will help people to transition into jobs that they are self-sustaining with.

CHAIRMAN MAY: I'm interested in why people are going to Southern Oregon if there isn't a job for them. Why do they come?

MS. MONTAGUE: I'm interested in that myself. I have no idea. I ask every one of them. They just think, "Well, there will be something to do." That's the general feeling. "I will get here." People buy houses and --

COMMISSIONER MAY: How do they buy houses?

MS. MONTAGUE: Well, they lived in L.A. and sold a -- you know, when the market was up and that type of that thing, and had a gob of money that they were going to buy a house and live on the rest of, on the interest, and find some job. Wrong. So they leave. They lose the house; they can't pay the taxes; all these kinds of things.

COMMISSIONER MAY: Do you think the federal government has a role, or the state government, in helping people who, you know, basically make what would appear to many of us a dumb decision to go live someplace where there's not a job?

MS. MONTAGUE: I wouldn't think so. However, usually these are not people who are being downsized from the military. It can be. Depends on where they lived and where they came from, that type of thing. But a whole lot of -- "I came through here on vacation. It's beautiful. We decided we would live here." That type of thing.

CHAIRMAN BERTEAU: Any other questions?

COMMISSIONER DAHLMAN: Yes, I have a quick one. The kind of veteran that is being discharged with an honorable discharge from the services these days is very, very different from the popular perspective, as you said, and I think that's very true.

Right now, about 98.5 percent of the people that were discharged have high school diplomas. They have been selected -- that's just on the enlisted side, of course. They have been selected in a competitive fashion. They have been vetted. They have been tested. They have been trained. They have proven themselves able to work in an environment that requires teamwork and discipline. And, even though, you know, a basic mortar man may not have a directly transferable skill to the workplace, he still comes from an environment that ought to make him very suitable for new training.

And you made these points yourself, implicitly, and I'm just wondering what you, as a representative of a veterans employment organization, what you're doing to convey that message to private employers.

MS. MONTAGUE: Oh, yes, I do that. I do that all the time. In order to help a person find a job you also have to be in touch with your employer community, you know, on a one-on-one or whatever the situation may be. Absolutely, I do that, but it's an employer's market in our area. And we all know that --

COMMISSIONER DAHLMAN: Yes, but the point I'm making is that hiring today's vet may indeed give you a competitive advantage because of the background he has compared to many people in the labor market now.

MS. MONTAGUE: No, it does not. It should, but it does not.

COMMISSIONER DAHLMAN: That's very sad to hear.

MS. MONTAGUE: I think so.

CHAIRMAN BERTEAU: Any other questions or comments?

(No response.)

CHAIRMAN BERTEAU: Thank you, Ms. Montague.

MS. MONTAGUE: Thank you.

CHAIRMAN BERTEAU: We appreciate your patience.

MR. HANLEY: Mr. Chairman, Ms. Cynthia Sullivan from the King County Council was scheduled to be here, and she, unfortunately, was held up at another meeting and won't be able to attend, but she has submitted written testimony which we will put into the record on her behalf.

MR. HANLEY: Our final witness then becomes CSM Lourdes Alvorado-Ramos from the Madigan Army Medical Center, representing the Women's Bureau.

CHAIRMAN BERTEAU: Sergeant, welcome.

CSM ALVORADO-RAMOS: Thank you, sir, very much. (Inaudible).

CHAIRMAN BERTEAU: Is Madigan -- is the new hospital finished and open now?

CSM ALVORADO-RAMOS: Yes, sir. We moved in March, so we're fully operational.

CHAIRMAN BERTEAU: That's a long and tiresome saga which we obviously don't have time to go through here.

CSM ALVORADO-RAMOS: Yes, sir.

CHAIRMAN BERTEAU: Welcome.

CSM ALVORADO-RAMOS: I am CSM Lourdes Alvorado-Ramos, and I am stationed presently at Madigan Army Medical Center at Fort Lewis, Washington.

First of all, I would like to thank you for allowing me this opportunity to speak with you this afternoon. And I also want to make very clear the fact that I'm not speaking for the United States Army, and the fact that I'm wearing the uniform is because this is what I do for a living and I'm proud to wear it, so I'm wearing it to this hearing.

My testimony today stems basically from, first, observation of what's going on with our soldiers as they depart the Army and particular Fort Lewis, because that's the people that I actually have very close ties with. After nearly one year of transition programs, both voluntary and involuntary, we have been able to kind of assess a little bit what the impact of the drawdown has been, especially at Madigan Army Medical Center and Fort Lewis.

As a command sergeant major, my primary duty, basically, is the welfare, health, morale, and training and professional advancement of the soldiers assigned to my command, and that's roughly about 1,000 of them. The past year has been a year of turmoil.

Since job security, to a great number of my soldiers, just became, you know, a total -- just went into chaos -- and I fully understand that the reductions are inevitable, and the Army, and particularly Fort Lewis, at this point in time are making a lot of attempts to ensure that the soldiers leave active duty with something.

Programs such as the transition program, which, as far as I'm concerned, at Fort Lewis is a model program in pointing soldiers in the right direction, are quite successful. The problem with the program as it is right now is that the number of those people departing this area right now, Fort Lewis and Madigan, have kind of overwhelmed the capacity of the program.

So, therefore, we have a lot of soldiers who find themselves not being able to utilize the services, or limiting themselves to what services they can take from the transition program, and leaving the United States Army with very little to go by as far as how to find a job.

So I strongly recommend, as far as you as a commission, that you take a very hard look at these programs and recommend to the Department of Defense boosting the funding to ensure that these programs do have the assets to properly transition soldiers out of the military. That's one of the recommendations that I have.

The medical field, especially, that's the one that I'm in, has a number of occupations that have comparable civilian equivalents. But once out, and since a number

of these specialties do not require formal registration or licensing in the military, the skills and experience gained become useless. And you've talked about that, and I heard you talking about that earlier.

So I recommend that soldiers be given the opportunity to retrain while on active duty in apprenticeship programs, and this should be watched over by education and learning centers. And particular attention should be given to those forced out, especially due to the lack of upward mobility, because they may be in stagnant occupations.

At this point in time I have about 20 soldiers who are going to be forced out, and 20 out of the 1,000 doesn't sound like much, but those 20 next year may be another 20, because we have to go in stages. As part of the move towards a quality force, the time that soldiers can remain in certain ranks has been decreased.

And I don't know if you know about the retention control point, that soldiers cannot go past a certain retention control point. This change is really severing sound military careers; I mean, just really doing a job on military careers. And it's also forcing out before their time soldiers in time frames as early as five years. They could retire in five years, but they are being forced out. Some of these soldiers have served anywhere from 8 to 14 years. That's quite an investment of time, and that's one of the concerns that I have, as far as my soldiers are concerned.

Yes, these soldiers do get military retirement compensation. They get sometimes severance pay and all. But it's not sufficient to be able for them to continue and really place and get the opportunities for education that they need to be able to place in the civilian community.

So I really believe that a sergeant first class, for example, who is middle management or a little bit higher than middle management in the enlisted ranks, should be able to serve more than 22 years, that a master sergeant should be able to serve more than 24 years. And these times were decreased by two years. It used to be 24 and 26 just about six months ago.

So this change in reduced retention points affected many senior noncommissioned officers whose plan was to complete their education in the last two years of their career. So you can see how that really put some people in great jeopardy.

Many of them are going to school now on their own, or the GI bill, or Montgomery bill. But many of them still have growing children; therefore, going to school on the monies of the GI bill and the Montgomery bill, you cannot do that. You cannot get an education and still care for a family with 300-and-some dollars a month. So that's another concern that we have, as far as departing senior noncommissioned officers.

The job market at this point in time is not accommodating my departing soldiers; it is not. During outprocessing, I usually ask them to touch base with me in six months, a year, tell me how things are going as far as jobs. And I tell you, the news is really disheartening. A lot of them are successful because many of them have skills, additional college and all, but many of them are working menial jobs, they are out of work or looking for work, or they are on welfare. And that's pretty sad, you know.

Those who planned to look for continued service in the civilian side of DoD, of course, now with the hiring freezes and reduction in the positions of civiliancy in the Department of Defense, are finding that there's no way out.

So I know we're in the same boat as private industry, as far as people being laid off and RIFed and all, but the difference between especially the enlisted soldier as we're departing the military and a person in the private sector is that, when we made a commitment to join the military, there was a sort of given that we would be able to serve 20 years and retire, and that all you needed to do was basically have an honorable career, not get in trouble, just do your 20 years, and that has changed. That has changed really immensely.

The Army has the Army Career and Alumni Program in association with large corporations, and that program has proven, nationwide, that the work ethic of the military alumni is above that of the average worker, the average civilian. And the civilian community is generally not aware of the advantages of hiring employees with previous and honorable military service.

So I'd like to recommend that an aggressive campaign be devised, starting at the DoD level down to the local installation, in cooperation with surrounding chambers of commerce -- and we're doing that at Fort Lewis, trying to get the Chamber of Commerce involved, and to kind of establish a formal program that highlights the advantages of hiring individuals with military experience.

And that is all I have.

CHAIRMAN BERTEAU: Thank you, Sergeant. I think you really answered the question I was going to ask with your last one. You agree with the previous speaker, Ms. Montague, that in fact there is some work needed to create or to improve the perception that potential employers have of the value of departing military?

CSM ALVORADO-RAMOS: Yes, sir, I fully share that view. But I would also like to add that there are certain stigmas that we have to sort of dispel. I just had a soldier who called me yesterday that can't get employment in his hometown, which is a small town in Arkansas, because the employer was afraid that he may develop that mysterious illness that Persian Gulf veterans are having, because he was at the Persian Gulf.

CHAIRMAN BERTEAU: Oh, boy, that's a new one.

CSM ALVORADO-RAMOS: So you can see how we have certain problems of perception and discrimination, I guess, you know, simply stated.

CHAIRMAN BERTEAU: That's a new one on me. Okay.

Any other questions, comments?

COMMISSIONER DAHLMAN: Well, let me just say that I work in the Office of the Assistant Secretary for Force Management and Personnel back in the Pentagon. And many of the rules that you're talking about have been developed and promulgated in cooperation with the military departments and Congress and come out of my boss' office.

I really appreciate your testimony here today, because I think that people often tend to forget the commitment that people in uniform have made and that a lot of the downsizing is very difficult for them to go through, even though, from the Department's and Congress' side, you try to put in place all kinds of mechanisms that make it a fair process. There is still a tremendous amount of pain, uncertainty, and difficulty among the uniformed people in the services now. I hear that all the time as I go

around and talk to people on the bases.

So I think that your testimony has been a very good reminder to us of that, and I appreciate it.

CSM ALVORADO-RAMOS: Thank you, sir.

COMMISSIONER HIGGINS: And I echo what Dr. Dahlman just said. In my other full-time job, as you may know, I'm in the Department of Labor, in Veterans Employment and Training. And I might mention a couple of things that we're doing right now, within the next few weeks, that we hope will alleviate some of the problems that you've mentioned that we know exist. We all at this table know.

In three weeks, I'm holding a forum in Washington with members of various parts of the Department of Labor, including the Bureau of Apprenticeship and Training, with Department of Education people, with people from the unions, with the various veterans service organizations, to kind of have a roundtable discussion and bring up the extent and scope of the problem in certification and licensing of people, obviously, in education, but also that people in, for example, the health field in the military are experiencing.

We know that there are many people in the military experiencing that problem of having served in some very highly technical and highly skilled areas in the military and then just -- the jobs are available in the civilian sector, but they are just not -- they don't have the piece of paper that they require in order to have that job. So we're going to be looking at that and seeing if there are some fixes that we can make, and we're hoping that there are some that we can make.

The other is, I'm also going to be speaking with and attending the next meeting of the National Chamber of Commerce to do exactly what you're suggesting, to see if we, on a national level, can cooperate from the Department of Labor and the chambers of commerce all around the country. Because I realize that the Transition Assistance Program is a good one. We just have received our very first report quantifying what we thought was out there based upon anecdotal information, that it is a good course and it is being well received, and those people who have gone through the course are a step above or at least on a level playing field with others.

However, we just can't get to everyone. And we realize that a big gap, a big problem in that program and many of the other programs that we and others have been running in the transition area is in getting to the employers at the other end and convincing them that this is what they want to do, and this is what we should do, and we owe nothing less to our veterans.

So I hope that, eventually, you and those that work for you and with you will see the results of some of these.

CSM ALVORADO-RAMOS: I certainly hope so.

COMMISSIONER MAY: May I make a comment? The legislative branch is also involved in this, and I'm not sure what's going to come out of the legislative process. But one of the recommendations from the Senate is to provide a year of leave of absence to get education and training to prepare for community and public service. Would that help some of your soldiers in this education need that many of them have?

CSM ALVORADO-RAMOS: Are we talking about a year of leave paid?

COMMISSIONER MAY: Paid, I assume. It doesn't say, but I assume.
CSM ALVORADO-RAMOS: Yes, sir.
COMMISSIONER DAHLMAN: You can handle that; right?
CSM ALVORADO-RAMOS: We certainly would.
COMMISSIONER MAY: I mean, otherwise, it's not any different than leaving.
CSM ALVORADO-RAMOS: It would be just like being put on the street; yes, sir.
COMMISSIONER DUBE: But, again, everybody has to recognize, in the context -- to the extent we implement that program, okay, and I'm not saying we should or shouldn't, then there will be the effect of, therefore, in order to finance those costs, we may have to separate more people than we otherwise would have had to, and then you get into that circle. Or, if we decide, rather than do that, we're going to devote more funds within the available total to manpower, then other things, in terms of contracts and programs will be offset too.
So there's a large interrelationship of those costs that we incur.
CSM ALVORADO-RAMOS: There have to be strict controls; otherwise, the potential for abuse on something like this is incredible.
COMMISSIONER DAHLMAN: Yes, but it's more than that. Congress would not raise the end strength numbers to accommodate those who go on leave of absence.
CSM ALVORADO-RAMOS: So the domino effect --
COMMISSIONER DAHLMAN: So, in other words, we --
COMMISSIONER DUBE: When you get down in the high year of tenure another notch.
(Simultaneous speakers.)
COMMISSIONER DAHLMAN: So to pay for it we will either have to reduce accessions or do some RIFs. Is that fair?
CSM ALVORADO-RAMOS: Well, sir, it's -- you know, the Army is getting smaller. The services are getting smaller. And it's understood, and we're accepting it. But the main thing is just ensuring that we take good care of those who are departing earlier than they thought they were going to.
COMMISSIONER MAY: Is the level of the VSI/SSB program sufficient for those people who are accepting that voluntary way of getting out?
CSM ALVORADO-RAMOS: When you consider the investment of time, especially for a soldier who has been in over 14 years, I don't think so, sir.
COMMISSIONER MAY: Is it 50 percent of what it should be, or 20 percent, or what?
CSM ALVORADO-RAMOS: I would say probably 50 percent of what it should be.
COMMISSIONER DAHLMAN: But let me follow up on that, because it's very surprising that, when you give soldiers a choice between the VSI, which is an annuity, which lasts for twice the number of years that they have served when they exit, and a lump sum payment, called the Special Separation Bonus, which has, in terms of

present value, a much smaller value than the longer payment stream, soldiers tend to pick the SSB, which is a big, up-front cash bonus, rather than the stretched out, much more generous annuity.

Can you tell me, in your experience, why that is?

CSM ALVORADO-RAMOS: Yes, sir. It's a lack of trust, because you never know when it's going to be taken away. And even though sometimes it may be in writing, you know how programs change and, all of a sudden, something that was in front of you before, it's no longer. And soldiers don't trust the system.

And a lot of them, the investment over -- maybe $2,000 every year, or whatever, they don't look at it that way. The lump sum, many times, is to establish themselves, to be able to put a down payment on a house, so they cannot wait until, you know, ever year to be able to get just a couple thousand dollars to be able to realize their plans.

COMMISSIONER MAY: But "trust" surprises me, and I've heard that before, because the retirement program is essentially trust too. Why is the annuity program not trusted, whereas the retirement program at 20 years is?

CSM ALVORADO-RAMOS: Because it's proven. The retirement --

COMMISSIONER MAY: And the SSB or the VSI was not proven.

CSM ALVORADO-RAMOS: Is not yet; right, sir.

COMMISSIONER MAY: No track record.

CSM ALVORADO-RAMOS: No track record.

CHAIRMAN BERTEAU: Any other questions or comments?

COMMISSIONER MAY: I might just say, this is the first time we've had an active military person testify, and it certainly has been informative, I think.

CHAIRMAN BERTEAU: Yes, I think so. We might seek out more.

Thank you very much, Sergeant.

CSM ALVORADO-RAMOS: Well, I thank the state women's organization, because I sort of piggy-backed the Women's Bureau here, Department of Labor. So I thank them for allowing me a little piece of the time.

Thank you very much.

CHAIRMAN BERTEAU: We appreciate it very much. Thank you.

COMMISSIONER HIGGINS: Thank you.

MR. HANLEY: Mr. Chairman, that concludes the roster of registered witnesses. So if you want to open the floor or whatever, that's --

COMMISSIONER DAHLMAN: Can you testify for us, Dave?

CHAIRMAN BERTEAU: I think we've said a lot today. Let me say, is there anyone out there who has something they would like to bring to our attention that has not come up this afternoon? We would appreciate it.

(No response.)

CHAIRMAN BERTEAU: Otherwise, I want to thank our hosts here today, thank all the participants for their assistance. In fact, all the previous input we've gotten from all people this area has been very, very useful. I think we certainly accomplished our objectives in terms of getting information that would not have come to our attention had we not come here. And I want to thank everybody.

With that, we will adjourn the hearing.
(The hearing was adjourned.)

* * * * *

SEATTLE PUBLIC HEARING
FINAL ATTENDANCE, SEPTEMBER 24, 1992

Time	Name	Representation
1:00pm	Mr. David Berteau	DCC Opening Remarks
1:12pm	Ms. Margaret Shield	Washington State SANE/FREEZE
1:21pm	Mr. Paul Knox	Washington State Department of Community Development
1:38pm	Mr. Dan Hartley	Seattle Professional Engineering Employees Association (SPEEA)
1:51pm	Mr. Louis D. Chirillo	Individual
2:01pm	Mr. Russell Beliveau	Foundation Health Corporation Champus Reform Initiative
2:13pm	Dr. Phil Bereano	21st Century Project
2:22pm	Mr. Tony Lee	Washington Association of Churches
*****	BREAK 2:31pm to 2:40pm	**********
2:41pm	Ms. Ellen Robinson	Individual
3:00pm	Ms. Anci Koppel	Seattle Women Act for Peace/WSP
3:19pm 3:25pm	Mr. Dean M. Henney Dr. Delore Zimmermann	MetaDynamics Incorporated
3:28pm	Mr. Paul Kostek	Institute of Electrical and Electronics Engineers (IEEE), Inc., Chairman of Manpower Committee
3:40pm	Mr. Edward Cruver	Washington State Employment Security Department
3:46pm	Mr. Bill Jenkins	Fraser, Inc.
3:54pm	Mr. Lyle Anderson	Washington State University SmallBusiness Development Center

Time	Name	Representation
*****	BREAK 4:10pm to 4:23pm	**********
4:24pm	Ms. Frankie Montaque	Oregon Job Service, Veterans' Employment Representative
4:34	Command Sargeant Major Lourdes Alvarado-Ramos	Women's Bureau
	Mr. David Berteau	DCC Closing Remarks
	Hearing closed	

SEATTLE PUBLIC HEARING
APPENDIX OF WRITTEN MATERIAL

Name	Written Material Presented
Ms. Margaret Shield Appendix A	✧ Testimony to Defense Conversion Commission by Margaret Shield, Washington State SANE/FREEZE on September 24, 1992 in Seattle, Washington.
Mr. Paul Knox Appendix B	✧ Paul Knox, Manager, Washington State Community Diversification Program, Testimony Outline for September 24, 1992 Seattle Hearing ✧ Biographical sketch, Paul Knox
Mr. Dan Hartley Appendix C	✧ Testimony before the Defense Conversion Commission Hearing, Seattle, Washington, Sept. 24, 1992
Mr. Louis D. Chirillo Appendix D	✧ Letter from L.D. Chirillo, 25 September 1992. ✧ 24 September 1992 Submittal by Louis D. Chirillo of Bellevue, Washington to the Department of Defense, Defense Conversion Committee ✧ Statement Accompanying the 24 September 1992 Written Submittal by Louis D. Chirillo of Bellevue, Washington to the Department of Defense, Defense Conversion Committee ✧ Letter from L.D. Chirillo, 11 August 1992 ✧ "Statement by Louis D. Chirillo to the Commission on Merchant Marine and Defense, 18 July 1988", SNAME Journal of Ship Production, February 1989, pp. 61-65. ✧ Article by L.D. Chirillo, "TQM? Inconceivable in Most Shipyards!", published in Naval Engineers Journal, January 1992
Mr. Russell Beliveau Appendix E	✧ Untitled statement ✧ Biographical information on Russell Beliveau, Vice President, Foundation Health Federal Service Inc., CRI Program Management ✧ Professional and educational experience of Russell A. Beliveau

Dr. Phil Bereano Appendix F	✧ Funding Proposal, To the National Science Foundation Program on Ethics and Values Studies, Studies in Science, Technology & Society Program, From Computer Professionals for Social Responsibility ✧ *Curriculum vita* for Professor Philip L. Bereano
Mr. Tony Lee	No written material provided
Ms. Ellen Robinson Appendix G	✧ September 24, 1992, Statement to Defense Conversion Commission, Department of Defense, Ellen Robinson, Mechanical Engineer
Ms. Anci Koppel Appendix H	✧ Letter from Anci Koppel, September 22, 1992 ✧ Untitled testimony by Anci Koppel, Women Strike for Peace, with five document covers referred to in testimony
Mr. Dean M. Henney Appendix I	✧ Report entitled "Enterprise Homesteading, Linking Entrepreneurs with Entrepreneurial Communities"
Dr. Delore Zimmerman Appendix I	✧ Statement of Dean M. Henney and Dr. Delore Zimmerman, MetaDynamics, Inc., Before the Defense Conversion Commission Department of Defense, Concerning Enterprise Homesteading as a Response to Military Downsizing, Seattle, Washington, 24 September 1992
Mr. Paul Kostek Appendix J	✧ Testimony of Paul J. Kostek before the Defense Conversion Commission, September 24, 1992 ✧ Paul J. Kostek Outline of Testimony before the Defense Conversion Commission, September 24, 1992 and Biography
Mr. Edward Cruver	No written material provided
Mr. Bill Jenkins Appendix K	✧ Fraser Incorporated, Department of Defense, Defense Conversion Commission, "Enclosure A" Background Information ✧ Resume William (Bill) Jenkins including 6 June 1986 Copy of Navy Meritorious Civilian Service Award from Supervisor of Shipbuilding, Conversion, and Repair, USN, Seattle, WA to Mr. William Jenkins, (GM-830-14), Deputy Resident Supervisor, Tacoma, WA; Letter of Appreciation, 1 Aug. 1991 from Commander, Naval Sea Systems Command to Mr. Bill Jenkins (Ret.)

Mr. Lyle Anderson Appendix L	✧ Department of Defense, Defense Conversion Commission Hearing, Testimony by: Lyle M. Anderson, State Director, Washington Small Business Development Center, Washington State University, 245 Todd Hall, Pullman, WA 99164-4727, September 24, 1992 ✧ Small Business Development Centers Adjustment Assistance Program for Defense Dependent Firms, Gregory L. Higgins, Jr., State Director, The Wharton School of the University of Pennsylvania Subsequent to his Seattle testimony, Mr. Anderson sent additional statistical information concerning SBDC performance to the DCC. Document titles included: ✧ Letter from Lyle Anderson, October 12, 1992 ✧ Updated July 15, 1992 - Growth Statistics on Small Business Development Center Clients: A National Survey, 1988 ✧ Updated July 15, 1992 - A Comparison: Clients receiving 5+, 8+, and 12+ hours of counseling in 1988 ✧ Updated July 15, 1992 - Optional Study 1: Clients receiving 5 or more hours of counseling in 1988 ✧ Updated July 15, 1992 - Optional Study 2: Clients receiving 8 or more hours of counseling in 1988
Ms. Frankie Montaque	No written material provided
Sgt. Maj. Lourdes Alvarado-Ramos	No written material provided

SEATTLE PUBLIC HEARING
APPENDIX OF WRITTEN TESTIMONY ONLY

Name	Written Material Presented
Ms. Cynthia Sullivan Appendix M	✧ Testimony of King County Councilwoman Cynthia Sullivan before the Department of Defense, Defense Conversion Commission, Mr. David Berteau, Chair, September 24, 1992
Mr. Edward J. Fremouw Appendix N	✧ Written submission dated 23 September 1992 ✧ Letter dated 25 September 1992
Mr. Nicholas Innerbichler Appendix O	✧ 25 September 1992, DoD Conversion Commission, Testimony of Nicholas R. Innerbichler

(1) Read w/adds

Washington State
SANE/FREEZE

Testimony to Defense Conversion Commission
by Margaret Shield, Washington State SANE/FREEZE
on September 24, 1992 in Seattle, Washington

I am a member of the Board of Directors of Washington SANE/FREEZE. We are a grassroots peace and justice organization with 22,000 members state-wide.

For the past six years, we have worked to encourage the State of Washington to recognize the extent of its economic dependence on military contracts and to take actions to reduce this dependence. We led the effort to create the Washington State Defense Diversification Program, which was authorized by the state legislature in 1990.

During the years SANE/FREEZE has worked to promote economic conversion, we have seen a tremendous increase in public awareness of the impact of military spending on local economies, and the need for advance planning to prepare for the cancellation of a military contract or the closure of a base. Our work at the state and local level has made us very aware of the need for conversion planning at the national level.

The world has changed. The Cold War is over. Yet too many remnants of Cold War thinking remain in our current military budget. We need to completely reassess what our real security threats now are, what force size and weapons systems are necessary for an adequate defense, and how much money this will cost.

We must also consider the other factors which contribute to national security, such as the strength of our economy and the well-being of our people. The staggering size of the federal deficit and the tremendous need for greater investment in infrastructure, health care, education, and other domestic concerns demand that we make dramatic changes in national spending priorities.

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Yet any discussion of such a rational reassessment of our national security needs is derailed by the lack of mechanisms to deal with the necessary shift of resources and people from military to civilian projects. The greater threat to our economy and our national security comes, not from the prospect of big reductions in defense spending, but the reluctance of the federal government to deal with the need for conversion.

Without national strategies and funding to assist displaced workers and affected communities, the cancellation of a procurement contract or a base closure results in lay-offs that devastate families and push community social services past the breaking point. This is a burden our economy can ill afford.

But maintaining high levels of defense spending to build weapons which are not essential for our national security is no solution either. This kind of welfare for the weapons industry may be a short-term "fix", but in a few years the same workers will be unemployed, we'll have manufactured products which contribute little to our economic strength, and our national debt will be even larger. In addition, the skills of defense workers and military personnel will be wasted on unproductive programs.

Equally disturbing is the trend that lacking any incentives to diversify or convert, many defense contractors plan to rely more and more on foreign sales of high-tech military hardware to maintain their profits. The Bush Administration's recent decisions to overturn existing policy and approve the sales of F-15's to Saudi Arabia and Taiwan are a misguided jobs program. Such weapons sales will fuel regional arms races and set the stage for future military interventions.

The problem of how to scale down American military forces and reduce procurement of strategic weapons will not go away on its own and it will not be solved by short-term, uncoordinated, quick "fixes". It is clear that the obstacles which prevent us from devising a national conversion strategy are primarily political. We face a national paralysis on this issue due to the lack of leadership from the federal government. The United States requires a nationally coordinated, comprehensive defense conversion strategy. This can be an integral part of developing a sustainable economic base for the 21st Century.

Many of the ideas in the economic adjustment packages passed by the House and Senate this year do have merit. But they are a piecemeal approach at best and are no substitute for a more comprehensive program coordinated by a national office dealing solely with the issues surrounding defense conversion.

In addition, funds appropriated for conversion should be overseen by an independent civilian agency. All money earmarked thus far for conversion has been doled out, very slowly, by the Defense Department. As Secretary of Defense Cheney has said, the Department of Defense was not meant to be a jobs program or a social service agency. There are more appropriate departments which can oversee programs such as job retraining, community assistance, and targeted economic development.

Federal coordination of conversion efforts is essential to show the national resolve to redirect our priorities and to serve as a clearing-house of technical information. But as each city or town knows best its own situation and its own opportunities for new enterprises, grants and economic assistance which emphasize flexibility and local decision-making would be the most effective. Large corporations already have the resources to react to changing markets, therefore federal technical support should be directed to small and medium-sized businesses which are trying to convert.

Worker and community assistance should be combined with reinvestment of military savings in new ventures that address the real needs of the country and lead to a sustainable economy, such as, environmental clean-up technologies, alternative energy production, health research, and transportation systems. Support for such critical needs would play a important role in revitalizing our economy overall.

I do not mean to imply that the task of converting our military economy will be simple or entirely painless, but a national conversion strategy will serve to minimize negative impacts and maximize the new opportunities created by shifts in federal spending priorities. In the final analysis, it is a challenge we must face. Economic conversion is the appropriate response to changes in the world and is essential if the United States is to remain competitive in the global economy.

Finally, I just want to say that

Our government often appoints commissions to examine controversial issues, but all too often they do little to affect the status quo. and I hope that the members of this commission will each use their creativity and intelligence to make recommendations which break the gridlock on this issue and result in real relief for the American people who are still waiting for the peace dividend they deserve.

BARBARA GOODING
Director

STATE OF WASHINGTON
DEPARTMENT OF COMMUNITY DEVELOPMENT
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September 18, 1992

To: DEFENSE CONVERSION COMMISSION

From: PAUL KNOX, MANAGER
WASHINGTON STATE COMMUNITY DIVERSIFICATION PROGRAM

Subject: TESTIMONY OUTLINE FOR SEPTEMBER 24, 1992 SEATTLE HEARING

I. Introduction

II. Community Diversification Program

- A. Origin (Washington State University military-dependence study)
- B. Mission -- to promote and assist economic conversion and diversification among the state's military-dependent communities, businesses, and workers.
- C. Advisory Committee expertise and guidance

III. Needs and Opportunities

- A. Surveys, focus groups -- findings
- B. Diversification Plan formulation

IV. Current Actions

- A. Flexible manufacturing network organizing
- B. EDA grant pursuit
- C. WA Marketplace
- D. Assistance to individual firms
  1. Component Concepts, Inc.
- E. Community economic diversification help
- F. Displaced worker assistance/training

V. Key learnings and concepts

- A. Economic developers have a critical role to play in assisting small and mid-sized firms and industries in improving competitiveness. The goal of such programs is not to bail out military-dependent firms, but to appropriately invest in the economy and avoid the need for more costly government intervention after the effects of military downsizing are fully felt.

B. Economic conversion action must be driven at the local and regional level by both private and public leaders. Communities and industries must act strategically much as a smart corporation in planning and acting on economic change.

C. Federal conversion spending is not a jobs program, but should follow a long-term, coherent strategy to economic growth. Government policy strongly guides market behavior in arenas such as defense, research and development, environmental clean-up, transportation, and infrastructure. What is needed is an interactive public/private industrial policy that utilizes market forces.

D. Federal dollars should support federal, state, and local programs that have successful track records. Meaningful federal resources would add capacity to these programs. In circumstances where an existing program is not available to meet a quantified need, a new, pilot program would be appropriate. Wherever possible, federal dollars should be provided directly to states to flexibly meet the unique needs of their communities, firms, and workers.

E. Ongoing evaluation should be a key component with all conversion efforts, whether federal or state-supported activities. Programs should inclusively involve a broad range of interests including large and small business, labor, state and local government, and community groups. At the state level, the CDP Advisory Committee serves as a sounding board and assessment body.

Specific recommendations for an expanded federal role incorporate the ideas noted above and are stated in bold under the needs of communities, businesses, and workers.

COMMUNITY DIVERSIFICATION

Military-dependent communities have basic diversification needs:

- Building a local awareness of dependence upon military spending and the need for economic diversification;
- The identification of community needs and defining a consensus-based vision for the future;
- The creation of a long-range economic development plan that provides strategic direction for local decision-making plans and actions;

- Gaining access to local, state, federal, and private resources needed to implement an action plan; and

- The development of public/private partnerships in the delivery of services to communities.

Communities facing the potential negative effects of military spending reductions, especially those slated for base closure, will require diversification planning that: 1) identifies and measures potential economic downturns; and 2) prescribes strategies to mitigate these effects.

- **Target funding for advanced economic diversification planning and implementation for military-dependent communities. This pro-active assistance should be based on criteria of vulnerability regarding both the facility's future military use and degree of economic dependence and isolation.**

- **Create a conversion funding pool of sufficient quantity for economic development activities in communities facing the effects of sudden and severe job/business losses attributable to base closures or contract cancellations.**

- **Provide ample funds for timely environmental clean-up of military facilities -- both active bases and those slated for closure.**

- **Ensure closed military facilities or surplus *portions* of facilities undergoing major reductions become available as soon as possible to local communities for economic development.**

BUSINESS DIVERSIFICATION

Military-dependent businesses and industries have the following basic needs:

- Access to low-cost capital and a variety of capital resources that would enable firms to reinvest or retool;

- Incentives to diversify such as diversification investment tax credits and Small Business Innovative Research (SBIR) grants;

- Technical expertise with marketing, product development, manufacturing capabilities, and assistance with the diversification process;

- Access to successful models for planning and implementation of economic diversification;

- Opportunities to match capabilities and share information with other firms to develop and market new products;

- Information on new federal priorities that present commercial opportunities for businesses; and

- Awareness about and support for quality assurance techniques such as Total Quality Management and ISO-9000.

- **Fund the Industrial Innovation Block Grant proposal or a similar concept. This New York State proposal provides flexible dollars to states to support their efforts to assist conversion and diversification among businesses and industries. Provides funds for services such as:**

  - **industrial extension**
  - **export and marketing assistance**
  - **quality initiatives (eg; TQM challenge grants)**
  - **flexible manufacturing network creation**
  - **procurement assistance (beyond DoD)**
  - **technology transfer/SBIR assistance**

- **Fully fund National Institute of Standards and Technology (NIST) programs to create manufacturing technology centers and support technology transfer activities in military-dependent manufacturing regions.**

- **Develop and fund financial capital centers in military-dependent states to address capital formation needs of firms seeking to diversify and help dislocated workers pursuing entrepreneurial business opportunities.**

- **Extend the SBIR program beyond its 1993 sunset date and increase the federal research and development funds allocated to this program to 2.5 percent.**

- **Promote commercial innovation and production among major defense contractors guided by a national critical technologies strategy.**

- **Provide small and medium-sized military-dependent firms more favorable tax status on internal research and development costs when implementing commercial diversification plans; and**

WORKER ASSISTANCE

- Better communication between federal, state, and local programs, vocational schools, community colleges, and other private organizations involved in worker training and retraining;

- Pro-active worker training and entrepreneurial programs for dislocated workers;
- Initiatives that link workers from declining industries to growing industries to facilitate job retention;
- Child care and health care programs designed to assist unemployed or dislocated workers;
- Expanded assistance for workers pursuing employee buy-outs;
- Federal and state emergency funds for unemployed workers; and
- Educational materials to assist workers in efforts to retrain and develop entrepreneurial skills.

- **Support the provision of extended unemployment benefits and health insurance for workers and dependents dislocated by base closures or contract cancellations.**
- **Enhance state training programs (such as Washington State's Job Skills Program) and federal dislocated worker funds to collaborate with firms in the retraining of defense workers. Wherever possible, attempts should be made to retrain workers <u>before</u> lay-offs occur.**
- **Fund model training projects for defense workers which involve joint administration by management and labor.**

PK

Attachment

Washington's Military Economy

The National Base Closure Commission will commence two more rounds of base closures within the next three years, while the defense budget is slated to be cut by at least 25 percent by 1996.

- 6.2 percent of the total state work force depends on military expenditures.

- According to the Council of Economic Priorities, Washington ranks third nationally in terms of potential economic dislocation from reduced defense budgets.

Top Military-Dependent States

State	Defense Share of Total State Purchases	State Military-Dependent (M/D) Employment*	State M/D Employment as % of Total
VA	10.8%	348,814	11.0%
WA	9.7%	149,996	6.2%
HI	9.6%	81,788	14.5%
AK	9.6%	37,432	14.4%
CA	8.9%	837,236	6.0%
CT	8.7%	88,322	5.2%
USA	6.0%	5,265,645	4.2%

*Includes Defense Industry, Military, and DOD Personnel (Excludes Guard/Reserve).
SOURCE: Defense Budget Project, DOD, Bureau of Labor Statistics.

At the local level:

- Kitsap County -- With three major facilities, derives over 34 percent of its personal income through Department of Defense (DOD) spending.

- Island County -- Recently, Whidbey Island N.A.S. avoided closure. The base provides 33 percent of the county's personal income and over 40 percent of its retail sales.

- Pierce County -- The military accounts for 13 percent of the county's labor force along with 1990 prime contract awards of $122.6 million to 198 firms.

- King County -- 346 prime contractors received $1.5 billion in defense work in 1990. Of this, Boeing accounted for $1.3 billion, with 25,000 military workers and an estimated 1,000 statewide subcontractor firms doing $100 million in work.

- Spokane -- Fairchild A.F.B.'s 5,000 military and civilian employees are tied to the future viability of long-range bombers.

- Seattle -- The University of Washington received $37 million in 1990 DOD research grants.

Characteristics of Selected Washington Counties
With Significant Military-Related Activities

County	Population 1990	Labor Force 1990	Military Spending as Percent of Personal Income 1989
Kitsap	189,731	83,000	34.79%
Island	60,195	21,670	33.05%
Spokane	361,364	171,100	4.38%
Pierce	586,203	254,200	15.43%
King	1,507,319	888,400	7.80%
Benton	112,560	578,000	0.72%
Franklin	37,473	16,900	1.58%

Source: Washington Employment Security Department.

Employment at Military Bases and Base Employment
as Percent of Total County Employment, 1990

County	Personnel at Military Bases Civ + Mil	Total County Employment Civ + Mil	Percent of County Labor Force Civ + Mil
Kitsap	34,283	91,780	37.4%
Island	10,550	29,830	35.4%
Spokane	4,978	168,178	3.0%
Pierce	34,805	265,538	13.1%

Source: David Holland, Washington State University.

AVOIDING CRISIS

- The Department of Community Development's Community Diversification Program (CDP) was initiated by the 1990 Legislature giving Washington the distinction of being the first state in the nation to comprehensively prepare for substantive federal miliary reductions before a crisis starts.

COMMUNITY DIVERSIFICATION

- An advisory committee was formed to assess local needs and develop strategies and recommendations for economic diversification. The committee represents a wide range of interests including Boeing, Sane/Freeze, State Labor Council, state and local government officials and small defense contractors.

- The CDP's plan, Diversification--Strategies For Military-Dependent Communities, Firms, and Workers in Washington State, stresses the need to begin to diversify now through cooperation and coordination of all parties. Participants also agreed that the state has a role to play in diversification.

COMMUNITY DIVERSIFICATION PROGRAM FOR MILITARY-DEPENDENT COMMUNITIES, BUSINESSES, AND WORKERS

Program Summary

PURPOSE:

- Prepare the state's military-dependent communities, businesses, and workers for long-term reductions in federal defense spending. The program's principal focus is to promote and facilitate economic diversification and conversion before federal reductions adversely impact communities and firms.
- Monitor and forecast shifts in the economic prospects of major military communities and employers in the state.
- Identify cities, counties, regions, and industries within the state that are primarily dependent on defense contracts and assist them in economic planning and action.
- Assist military-dependent firms by providing information and assistance needed to introduce new products, processes or markets.
- Formulate a state plan for diversification of military-dependent communities, industries and workers.

PROGRAM APPROACH AND STRATEGIES:

- Established broad-based Advisory Committee, representing state and local government, military-dependent businesses, peace, labor, lending, and other interests, plus geographic regions with military installations.
- Since its inception in August, 1990, the CDP has analyzed the range of specific military-dependency issues in Washington state and brought focused attention to the issue at the local and state level. CDP staff, with guidance by the Advisory Committee, performed an extensive policy development process to understand the perceptions and needs of communities, businesses and workers affected by military dependency.
- In its deliberations, the Advisory Committee maintained the vision that Washington State's military communities and businesses would be more economically diversified in the future. Economic diversification is a long-term process. A series of pro-active strategies were developed to help meet this vision:
- Coordinate local, state, and federal assistance using the focused resources of existing programs.
- Encourage and support awareness of the importance of economic diversification.
- Facilitate community diversification planning and implementation.
- Target diversification assistance to vulnerable small- and medium-sized firms and workers likely to be affected by military budget cuts.
- Provide an effective response to base closures, force structure changes, and procurement contract cutbacks.

ACTIVITIES TO DATE:

- Identified existing information resources, experts, and organizations key to accessing ongoing information on defense spending issues.
- Prepared a nationally recognized economic diversification plan, Diversification--Strategies for Military-Dependent Communities, Firms, and Workers.
- Monitored federal defense budget process, policy decisions, and base closure deliberations affecting the state.
- Conducted 13 focus groups, surveyed over 300 defense contractors and contracted with the Northwest Policy Center to assist with needs assessment process and development of a defense contractor database.
- Convened interagency group to provide coordinated state response to national diversification legislation and potential base closures.
- Surveyed 100 defense prime contractors and sub-contractors to determine level of job loss due to military procurement cutbacks.

CURRENT IMPLEMENTATION ACTIVITIES:

- Facilitate implementation of diversification plan recommendations.
- Organize and facilitate development of a flexible manufacturing network of twelve small defense-dependent aerospace firms. Networks assist defense contractors in diversification or conversion to commercial markets through activities such as instituting a purchasing or marketing consortium, facilitating new business joint ventures, and developing a skills, products and markets directory.
- Currently pursuing federal Economic Development Administration grant dollars through a proposed three-year flexible manufacturing network project.
- Continued assistance to community of Oak Harbor (Whidbey N.A.S.) and other areas in diversification planning and implementation.
- Provide diversification technical assistance to at risk communities and firms.
- Provide general information and referral.
- Prepare annual report to the Governor and the Legislature.

For more information about the Community Diversification Program, contact:

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Appendix B

BIOGRAPHICAL SKETCH

Paul Knox

Paul Knox manages the Washington State Department of Community Development's Community Diversification Program, an innovative venture to assist military-dependent communities and industries in planning and initiating economic conversion and diversification activities. Mr. Knox has worked in community/economic development in Washington State since 1986, having served as a Contracts Manager for the State's Community Development Block Grant Program; Communications Manager for the State Economic Development Board; and Planning Consultant for the Ballard Economic Development Group in Seattle.

Previously Mr. Knox directed several public interest and issue campaigns and organizations in the states of Washington, Nevada, and Pennsylvania. He has also worked in the private sector with both the construction and electronics industries. Mr. Knox earned his B.A. in Economics at Tufts University, Medford, Massachusetts, and has completed his course work for a M.A. in Applied Behavioral Sciences at the Leadership Institute of Seattle/City University in Bellevue, Washington.

TESTIMONY BEFORE THE DEFENSE CONVERSION COMMISSION HEARING, Seattle, Washington , Sept. 24, 1992

My name is Daniel B. (Dan) Hartley. I am an engineer working full time at Flight Test at the Boeing Company in Seattle; my degree is in Electrical Engineering. I have been employed in engineering over 35 years. During that time I have worked on a variety of military and commercial programs. I come before you today because I am also President of the Seattle Professional Engineering Employees Association, our labor union for slightly under 30,000 engineering employees at Boeing. We represent most of the engineers at Boeing, not only in the Puget Sound area, but also at several other Boeing locations around the country. We have been the engineers' union at Boeing for nearly half a century. Two of the five presidents of Boeing since that time were members of our union before moving into management. We are the people who designed the B-52, KC-135, Minuteman missile, AWACS, cruise missiles and dozens of other successful military weapons. We have designed space spectaculars and moon rockets, and have been associates in design of many other projects including the B-1 and B-2. We are currently a one-third partner on the F-22. On the commercial side, we are the designers of the 707, 727, 737, 747, 757, 767, and the upcoming new-technology 777. We have been the major contributor to making air travel affordable while concurrently increasing safety to the point where you are over a thousand times safer in our plane than in an auto. I hope you have put your trust in our abilities by having many safe flights in our planes, and have enjoyed the fruits of liberty protected in part by use of the equipment we designed. Our products make Boeing our largest exporter, second largest in the world...and we are the largest aerospace company. To put this in perspective Boeing does the assembly work and actually builds about a third of the airplane, subcontracting for two-thirds of the assemblies. We engineers are responsible for the whole design, though. We are the largest engineering union in the world and one of the largest independent labor unions. One would be hard pressed to find a group

anywhere that could even come close to equaling the technological asset my group embodies. Am I boasting?...as the saying goes, "It ain't braggin' if you done it."

We are money players. We have had many ups and downs, and have had to drag our company to the lead in aerospace on the strength of our engineering. In the process we passed several complacent companies who were content to sit on their laurels. We have faced the competition of a foreign competitor who has been kept afloat by over 25 billion in government subsidy. By working at "warp speed" we have managed to hang in the race...even gaining a little. But it is not easy. Not too many years ago the majority of our business was government...primarily military and NASA. We have already gone through a heck of a conversion when it didn't gain political attention ...because now 79% of our business is in commercial airplanes. Our commercial success has made it easy to not spread any of the government pork our way so we've already been hurt. Our ranking in military business has slipped for many years, and contrary to the media perception, we are not now even in the top ten. We've already been hit with a big whammy due to loss of this business, and thousands of members have been displaced, "converted"...into commercial work. Those still in government work are now faced with another massive reduction. This time, though, the state of the economy is very precarious, with many of our airline customers delaying deliveries and slowing new orders. We are getting a triple dose.

I want you to know some basic, but little-known, facts that are very important for you to understand if our country is to maintain our current status, both militarily and commercially. Virtually everything you and I buy at a store starts in engineering...we even have a major effect on the arts and humanities. Typically, the engineer supports 100 other jobs. In high-tech endeavors, such as aerospace, the average wage is higher, and the industries tend to be environmentally cleaner. For purposes of this testimony, wealth represents the value that is added to material and

energy extracted from the environment...be it oil, lumber, grain, automobiles, solar and wind energy, or airplanes. These things can be measured...hence can be taxed...as opposed to the intangibles such as good health, the arts, fairness, moral values and the such. The ability to extract this measurable wealth starts with engineering. It is no secret that our economy is under attack by people in other countries who want the "things" we have. Economies that are on the ascendancy are those of peoples who respect technology...engineering. Although engineering drives the production of our wealth, a declining measure of respect, or encouragement, is going toward industrial and engineering technology. Traditionally, our respect has gone more to the scientist. For the last quarter of a century our country has followed policies that have been a detriment to engineering. It is no mystery why we are slipping economically. To simplify, we can't make the economy prosper if we dump on the engineer. If you want to become or to remain a third world country then discourage the engineer. (The latest figures I read said there has been a quarter-million drop in the number of practicing engineers since the mid-70's. At 100 to 1 this equates to a drop in jobs of 25 million. The reason that there has been a slight increase in employment is the shift from a fewer number of higher-paid manufacturing jobs to a larger number of lower-paid service jobs...not a good trade in my eyes.) Putting this in other words, we engineers spend our energies on increasing the diameter of the pie; it seems that most other groups are more concerned with how it is sliced. Anti-growth, anti-technology policies of our government are decreasing the size of the pie. The current economic slowdown is not a temporary condition; it is the consequence of technology bashing. It is partially caused by past failure to address the issues you are exploring today, by failure to address the long term impact of our anti-technology policy. We are now reaping the rewards of those oversights.

If you worked in engineering at Boeing you would have seen several instances where technical merit did not seem to figure in the award of military contracts. The rationale seemed to be that Boeing has

commercial business as a fall-back, so it is not wrong to favor a company that doesn't have other business. The truth is that hurt comes in discrete chunks. A displaced worker at a company with commercial back-up hurts just as much as a displaced worker at a company that only has military business. There is not much call in the commercial airplane world for an engineer who knows how to make stealth airliners. The ultimate message, "you're laid off", is just as strong to an engineer in a company with commercial business. The employer commitment to the laid off employee essentially ceases once out the door.

The helter-skelter decrease in the so-called defense budget has not helped engineering and represents a very serious threat to our country's future. I am sure you have heard much testimony about hardships and necessity for short-term retraining. This is valid and important need...but remember, your short term recommendation must also play with the long-term solutions. As you prepare your recommendations, though, your only problem will be, "how are we going to pay for what's needed?" Everything I discuss boils down to jobs, American jobs.

As you consider this statement, please understand that less than 10% of the engineering employees in this country are in unions. Our working conditions are spelled out with great deliberation and the benefit of experience of all our predecessors. Both Boeing and SPEEA people have been hurt by injudicious cutbacks in the past. The hard lessons we have had to learn in the past decades are memorialized in the mutual Boeing/SPEEA contract. These agreements, therefore, reflect wisdom that cannot possibly be expected from a spur-of-the-moment solution. Look at it this way: for over 90% of our nation's engineering employees the norm is employment (unemployment)-at-will in most states, particularly in the so-called right-to-work states. We have a long background of dealing in the area of "downsizing" and how to minimize the hurt; this was not always the case, though. I would not doubt that you have heard many horror stories of massive no-notice layoffs of some pretty capable people. We're having ours too, again.

You probably also hear that engineering people are more employable than most others, and that pay averages are also higher. If history is any teacher, then this means the political public is not inclined to give us much consideration...big mistake. Tradition is that the younger, lower-paid employees are the first to be let go. It is usual that, for the average survivor, pay goes up after a cutback. These junior people are the future and they are coincidentally the ones hurt most by layoffs.

As union president I still hear comments from outside the field that engineering people have designed weapons of war and, if not war criminals...abet waging of war. I have yet to hear thanks from so much as a single person that their spouse, or child, survived Desert Storm due to the excellence of military equipment designed and developed by our engineers. Too much of society sees us as introverted, lacking in social amenities and deserving minimal consideration. We'd better not heed these vocal schools of thought. Technology's reward for doing an excellent job has been to be dumped on, while perennial ne'er-do-wells are glorified. Somehow this is supposed to equate to compassion...the logic is lost on me.

My union has had some success in making the transition from being militarily dominant to commercially dominant, because we have been forced to several times. Our "inerrant" news media is quick to brand Boeing as being the military super-company. The truth is that Boeing's ranking in military business has slipped constantly...even during the Reagan years of higher military spending. We have had to make a major portion of our shift earlier than most companies; the transition is still in progress. We have gotten the double whammy since it is now likely that a third or more of our union members will still be forced from work on military programs...this as commercial opportunities decrease.

This transition has been less painful than in previous cutbacks. We...the Company and our union, have had to work together very closely. It has

taken more give-and-take than is typical between labor and management. Here are a few of the specific actions that seem to have worked: 1.) The company has tried to keep us informed of the outlook for employment. The company moved an excellent people person, big Dave Cartwright, (you should talk with him) to an assignment where virtually every engineering transfer has gone across his desk. He carefully evaluated the talents of the surplussed individual with the company's immediate and projected needs. 2.) Where retraining was appropriate, schooling was arranged. Because everyone knew their next assignment, anxiety, while still there, was greatly alleviated. This meant the individual could concentrate on a rapid transition and quickly learn the new skill. 3.) Boeing and our union saw business slip in good times, so when the long-term outlook for engineering employment was not assured, then non-union contract engineers were brought in. Whenever necessary, these contract engineers were terminated and a displaced military engineer from within the company was moved into the job, after retraining if necessary.

Our union is watching the process closely and, knowing this, the company keeps us informed. Even though the transition has been fairly smooth, with several thousand involuntary transfers there are some who get a bad deal. I was laid off in the big cutbacks in '69-'71. Two thirds of the employees were laid off. Inequities abounded and Boeing suffered the consequences of this loss of personnel for years...even yet. During those cutbacks our government-subsidized competitor, Airbus, came into being. They would have fallen on their face if we had not had so many engineers leave aerospace; we lost years of lead. It mattered not to our government that Boeing was crippled. The lesson was not lost on Boeing or the Union. Job transfer considerations and a well-defined layoff procedure have been a part of every contract since then. Being a union boss, it is hard to admit it, but working with the company very openly has really minimized the problems. Also, when contractual problems seemed to exist, there was immediate effort to correct most of the inequities. As an example, our contract calls for rating the worker in

how well the particular job is being performed. This totem rating, when factored with seniority is converted into a layoff rating. This does not mean the individual cannot be very effective in other similar jobs. But a problem existed. If the lower-rated people (usually the younger people with young families) were removed, then the future was being mortgaged. Likewise, a potential supervisor in another area would assume the person being reviewed was at the end of the list and hence not as good as desired. This was addressed at times by surplussing across a variety of retention levels. At first it caused great anxiety for the person with the best retention rating to be surplussed from the very group where excellence of performance was being recognized. And of course there is the sponsorship problem (the "good ol' boy" syndrome) and people were anxious about starting over and forming a new set of bonds. But generally the receiving supervisor, whose grade card depends on having good employees, was happy to get higher-rated workers. Mostly the new transferees, both high-and low-rated, were treated better than they had been in the past.

The government mandated WARN 60-day notice for anticipated large lay offs has worked much better than the previously customary two-week notice. Sixty days notice gives one a lot more time to seek other employment or to upgrade skills to change to a different field. The law requires a fairly large threshold of anticipated employee layoff before it goes into effect. Boeing has essentially given the 60-day notice even when the number of employees was minuscule. Any surplussing causes anxiety, but giving more notice than the law requires has done a great deal to reduce the anxiety. Boeing has been good about publishing the expected employment figures for up to a year ahead. Conventional dark-age employee relations practices would have said that giving an employee a long advance notice of possible termination would cause the employee to goof-off, to demoralize other employees, to sabotage the equipment, etc., implying that the typical employee is some kind of low life. Even though there are many practices we in the union still don't like, it is to Boeing's credit that they have proven the traditional view to

be in error. Treating our employees as intelligent, responsible contributors pays off (now if we can just get them to extend the actions to compensation). A WARN-like program that forces some time constraints on cutbacks needs to be studied for DOD programs.

I think the moving of Big Dave into a "transfer Tsar" position with commensurate authority and open labor/management communications are the keys so far. I would expect that you would contact your various contracting officers and tell them to get something like that going as programs spool down. I imagine your putting on such pressure would actually be greeted favorably...give a convenient way for all sides to save face. I sense anti-union arrogance has strong company in the DOD. Listening to unions could be very helpful for the DOD whose people skills in dealing with contractors' labor force leaves much to be desired.

Ironically we are now being hurt by our success. Skills that scared the pants off the old men in the Kremlin and kept our losses so low in Desert Storm don't all lend themselves to a rapid transition to commercial viability. But I am sure these skills do have a commercial use that can be brought to bear after a few months of retraining. Although we must do something to encourage the K-12 students to look favorably toward technology, I think that we can't afford to wait 40 years for the real payoff. We must put some real encouragement into retraining our present day bill-payers who have already been proven effective in the technology arena, albeit military technology. Priorities must be to "them that's there"; indeed, in this day of unreasonable demands I could protest that a "social contract" exists. Look, darnit; we have about spent ourselves into the poorhouse because we're told that encouragement of people gives positive rewards. There seems to be a bit of an unlevel playing field if we say that this encouragement applies to everyone except those in the "military/industrial" complex.

We all are experiencing the crocodile tears being shed because the Japanese are after the rest of our high-tech industry and how they are buying all the government debt notes and there is no money left for investment and we're starting to reap the benefits of the first generation raised on MTV. True, we have problems, and we can't "unring the bell." But a chunk of the problems we are facing now is the bum rap technology took from that most non-productive, so-called, peaceable, loving, flower-child generation of the sixties and their media confederates. A heck of a number of very capable individuals who might have otherwise taken up careers in technology have gone into non-value-added careers. Remember, each potential engineer who opted for say, law, or finance in lieu of engineering, just traded 100 jobs in our economy for one job. It doesn't take too much of an economist to question the wisdom of this. We have made engineering schools too hard to enter...too elitist. There are thousands of graduate and near-graduate technical engineers in our union who are working with great skill and experience as engineers who need the opportunity to advance to the next degree. Encouragement of educational/skill advancement is good, instead of the current environment where development of a highly technical military skill is almost a detriment. Penalizing engineering skills in military technology is very short sighted. The country that does appreciate these skills will advance. If we don't keep up, then the expense of necessary military equipment in the future will go up while effectiveness goes down...false economy indeed. All the good intentions in the world will not change this reality. We need to remember that commercial technology is now every bit as advanced as military technology. The DOD procurement practices must be geared to recognize this. Current and future programs should use a "Technology Impact Statement" to see where joint skills can be used.

American foreign sales of military equipment may not be the dangerous, de-stabilizing boogie-man some would have us believe. If you get down to the innards of military equipment you would know why. Judiciously easing the strident restrictions on foreign military sales would soften the

near-term impact. No buyer of American equipment has any doubt as to our superiority. Allowing foreign sales of F-16's and F-15's and the rest could soften our economic blow, it also buys time and discourages the prospect of competing, less-reliable foreign vendors. It decreases their market share and ability to develop and sell hardware to our future enemies. This will be particularly true if we again take the previous de-stabilizing American attitude of sleeping while war drums rumble. Since so many technologies are blind to commercial or military application, it would also build our commercial competitive base. But judicious care in customer selection is necessary.

Here is the final point I want to make. There is a lot of talk about a National Industrial Policy. We can stand on our ideologies and continue to experience a decline in our industrial base, or we can face up to our responsibility and address the issue. The kinds of problems this commission is facing are an integral part of an coherent policy. There are complaints that an "industrial policy" is unfair because it would pick so-called winners and losers. I haven't seen near as many losers as we, with our non-industrial-policy have...nor as many winners as the countries with national policies have. The way it appears to me is that the other capitalistic economies with their published national policies are picking "their winners" and "our losers" for us. We have a national industrial policy...as witness the fact that you are holding these hearings. Our defacto "industrial policy" has been generally positive toward military technology... with indifference bordering on mild antagonism toward commercial manufacturing. Let's face it; the main reason we can now talk about cutbacks is the success of our military technology...one really stretches facts to make it into anything else. This success shows our country should keep a high priority of keeping military technology intact. Cutbacks are inevitable; however, the same degree of need will exist so long as a single tin-horn dictator with a bent toward military adventureism is in the saddle anywhere in the world, or if any other country improves and sells military equipment. Conversion policy is a rightful role of government. The ability of many more

governments with high-tech industrial bases to quickly enter the arena makes it vital that we ease diffusion of military technology into the civilian enterprises. The water is now hitting the wheel; the prevalent attitude inside the beltway is best summarized by a well-known economist: "Computer chips, potato(e) chips, what difference does it make; a hundred dollars is a hundred dollars." And a tank is a tank; ask Saddam Hussein if he believes that.

In discussing our unfolding experience I do not want to leave you with the impression that we haven't bled. Several hundred of our people have had employment changes. We just couldn't find suitable alternate jobs for all. Careers have been restarted in midstream. Relocations have occurred. And I do not address the displaced contract engineers or worse yet the entry-level people who were not hired.

The people in technology seem to be introverted and quiet. However, please do not make the mistake of thinking that our engineers, passive personality and all, do not have one major impact on whether our grandchildren will live as well as we have.

I am not presenting official union positions in this testimony...it would be nearly impossible to even have a position with the dynamics of the election and political situation. I am relating to you a few important considerations I suspect may have been overlooked. We are in a baby-bath water situation the likes of which I have never seen. Be careful.

Thank you for hearing this testimony from an old engineer. I may be contacted at:

Daniel B. Hartley, President
Seattle Professional Engineering Employees Association
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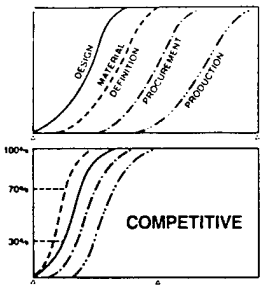

L.D. Chirillo

25 September 1992

Sally Hartwig
Executive Director
Department of Defense
Defense Conversion Commission
1825 K Street NW, Suite 310
Washington, DC 20006

Dear Sally:

Enclosed for your office files is a copy of my written submittal together with the statement I made to the commission during its 24 September hearing in Seattle.

Thanks for the guidance provided in your 17 September letter. The support provided by your staff during my presentation was excellent.

Sincerely,

L.D. Chirillo

9/28/92

206) 453-8989

P.O. Box 953
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24 September 1992 Submittal by Louis D. Chirillo
of Bellevue, Washington
to the Department of Defense
Defense Conversion Committee

This submittal pertains to shipyard operations, but the logic and principles addressed also apply to other defense industries.

TRADITIONAL OPERATIONS

Shipyards in the U.S., with few exceptions, are characterized by functional crafts that have evolved independently from each other. For example, a pipe-shop manager is only concerned with the fabrication of pipe pieces and their assembly into pipe systems. Other shop managers have their own parochial views. This traditional approach was adequate when ships were simple; it is not effective for modern ships. Because the approach relies primarily upon experience vested in individuals at the expense of corporate experience, managers cannot easily redirect it at non-defense work nor can they analytically derive constant improvement.

Per Peter Drucker, the management guru, "Every functional manager considers his function the most important one. This results in high emphasis on craftsmanship and professional standards. But it also makes people in the functional unit prone to subordinate the welfare of the other functions, if not of the entire business, to the interests of their unit. There is no real remedy against this tendency in the functional organization." (1)

Had Drucker been writing about shipyard operations per se, he would have surely added that many functional managers mischarge man-hour costs in order to "bury" problems, withhold information as means to insure their own security, and exploit craftsmanship and professional standards for self aggrandizement. A good example, is the reluctance of steel-shop bosses to accept integrated hull-construction, outfitting, and painting because it inhibits steel-tonnage throughput. Drucker would have also noted that their craftsmanship and professional standards include use of steel margins (commitments to rework) and poor in-process and final-product accuracy (more reasons for rework). See Attachment A.

RATIONALIZED OPERATIONS

"Rationalize" means "to bring reason to." When National Bulk Carriers of New York leased half of Japan's former Kure naval dockyard in 1951, the people who eventually reformed as Ishikawajima-Harima Heavy Industries (IHI), were challenged with transforming Kure's traditional corporate culture. They overcame transition problems such as those now confronting The Boeing Company:

> creating an "integrated design build team system"
>
> "replacing imperious, turf-minded supervisors with self-regulating, cross-discipline teams"
>
> "a big obstacle is Boeing's entrenched autocratic culture, where information is something old-line managers continue to guard jealously"
>
> "supervisors initially may agree to abdicate authority to work teams but revert to old-style intimidation at the first hint of a deadline" (2)

IHI's rationalized approach, the first in the world for shipyard operations, in place by 1960, still the most effective due to constant improvement, and still the model for the most effective yards in Europe and North America, features:

1. People, information, and work organized per a product work breakdown structure.

2. Recognizable work flows, both real and virtual, for integrated structural, outfitting, and painting work, with the main flow leading to end-product delivery supported just in time by subordinate flows.

3. In-house products (also called "interim products" such as parts, sub-assemblies, and larger assemblies) classified by the problems inherent in their manufacture, i.e., per Group Technology (GT).

4. Division of each work flow into distinct stages for the purpose of identifying in-house customers.

5. Statistical analyses of how work processes perform regarding man-hour budget, schedule, and quality adherence.

6. College-educated middle managers, particularly as shop and assistant shop managers who have been brought-up in the manufacturing system as generalists by job rotation through various shops and whose foremost expertise addresses the most important thing in any industrial endeavor, how to analyze.

7. An operations manager who has authority over all functions that influence performance of the work flows, particularly those for design and material procurement matters.

8. Production engineering performed throughout the operations organization vice reliance only on a separate production engineering department, greater investment in design, and design implemented literally as an aspect of planning.

9. Extraordinary attention to material procurement matters as means to maintain accurate relationships between material and the man-hours required to process material (production control through control of material).

10. Vice functional trades, product trades per problem category (e.g., specialists for in-house products needed to assemble machinery as distinguished from specialists for accommodation spaces) and counterpart detail-design specialists in order to make clear that both designer and worker are responsible for cost per in-house product.

11. Decentralized decision making and an extremely-high rate of beneficial suggestions made by workers who are kept knowledgeable of how their work is performing. (3)

In other words, most of what is featured in IHI's rationalization is that which has been recorded for many years by the foremost management scholars, W. Edwards Deming, Peter Drucker and Joseph Juran, all of whom spent time in Japan as consultants.

APPLICABILITY FOR OTHER THAN SHIP-RELATED WORK

A rationalized shipyard operation is inherently flexible due to constant focus on the manufacturing system's needs and capabilities. For example, whether pipe pieces are required for a ship or a processing plant does not matter. But the percentage of pipe pieces that are straight does matter because they constitute the least-cost problem category. All in-house products, per GT, are classified and processed by problems inherent in their manufacture or assembly, not their end use. This focuses designers on least-cost in-house products and enables work to be statistically controlled even for fitting a customer-provided black box for a ship's missile system or a shipyard-purchased pump for a processing plant.

Also, the need to generate material procurement information and pipe design details so as to anticipate the sequence required for manufacture does matter. Similarly, the preparation of assembly instructions and material lists for outfit modules, in a sequence that anticipates a build strategy, does matter. It especially matters that all are coordinated per a master plan and schedule when different end products are produced simultaneously. The production of all end products involves "raw-material"

procurement, finished-component procurement, parts manufacture, assembly work, coordination of subcontractors' and manufacturers' representatives, and testing. None require separate information-processing systems. Instead they have common requirement for extremely-efficient processing of lots of information.

There are two alternatives for shipyard diversification. One exploits knowledge of existing customers and makes good business sense only if there is significant demand by them for other products (or services). But that is apt to require development of additional manufacturing systems while contributing little or nothing to shipbuilding development. The second is to address any customer having need for any end-product that the existing manufacturing system can produce. This latter choice is preferred, not only because its defense potential is certain, but also because a manufacturing system has to be fed work in order to maintain critically-needed, up-to-date knowledge of how it performs.

Avondale Industries Inc. (ASI), while simultaneously building Exxon Product carriers, Navy oilers and Navy landing ship docks, wisely applied the same product-oriented manufacturing system, patterned after IHI's approach, for building:

- toxic-waste incineration plants
- sulphur-processing plant
- 192 megawatt power plant driven by river current for Vidalia, Louisiana
- floating jail for New York City
- steel bridges
- deckhouse-size power plants for near-East oil fields (fueled by gas that was formerly "flared off")
- boxcar-size gas-turbine/high-pressure pump packages for pressurizing oil fields with water

For such diversification, unique expertise is only required for marketing, contract design, functional design, obtaining regulatory approvals, testing, and operating as during trials. But in production the emphasis remains on in-house products and constant improvement of the manufacturing system that also builds warships.

FAILURE OF SUBSIDIES TO ENCOURAGE MODERN MANAGEMENT METHODS

In the U.S., the need for a product work breakdown was first expressed in a 1969 study of shipbuilding cost estimating methodology performed for the Maritime Administration (MarAd). (4) The recommendation may not have been totally ignored. The Merchant Marine Act of 1970 provided funds for research in shipbuilding per se in addition to continuing shipbuilding subsidies. But no thought was given to pertinent quid pro quo. The conditions for subsidy continued to take into account only MarAd's standard specifications for building ships. Nothing was said about

obligation to improve the manufacturing system as a consequence of each subsidized shipbuilding effort.

For implementation of the research, MarAd relied upon the Society of Naval Architects and Marine Engineers (SNAME) for advice and created the government/industry National Shipbuilding Research Program (NSRP). The Program's initial direction was shaped by shipyard managers who were very proud of their accomplishments (especially their World-War II records). But they were unaware that their traditional shipbuilding experiences were no longer sufficient. There was no college-educated middle-management cadre that could devise a useful product work breakdown and advise them accordingly. Even if MarAd knew how to impose conditions for improvements in their manufacturing systems, the conditions would have had a hostile reception.

Also, there was no element of competition in the subsidy process which would have increased pressure for more effective shipbuilding. For example, in Japan at that time, government practice was to announce that it would subsidize the best proposal for a new trade route. Each interested owner teamed with a shipyard and competed for the "prize" by developing a proposal that addressed both shipbuilding and ship-operation costs. (5)

Without incentive to truly rationalize their management approaches, many American traditionalists visited Japanese shipyards in the 1960s and the early 1970s just to see the new large-scale facilities that were popular for building large tankers before the Arab-provoked oil crisis. Their trip reports mention regard for the Japanese mystique that produced ideal workers, belief that the Japanese shipbuilders were lucky because they had a great subcontractor and material-supplier infrastructure, etc. Not one American manager recognized that they had seen the application of logic and principles taught by W. Edwards Deming, Peter Drucker, and Joseph Juran, applied for shipyard operations. None mentioned a product work breakdown nor the impact of statistical control even though the Society of Naval Architects of Japan advised in its 1967 English-language annual report of shipbuilding developments that:

> "Statistical control 'epoch makingly' improved quality, laid the foundation of modern ship construction methods and made it possible to extensively develop automated and specialized welding."

No American visitor came away with the understanding that the most effective Japanese shipyard managers worked first to rationalize their manufacturing systems, including significant measures to build the material-supplier and subcontractor infrastructure. None suspected that only afterwards were priorities shifted to developing facilities and thence worker capabilities to make decisions, in that order. No American reported the legions of productivity indicators that were being used, probably

because to them, personal experience was more important than analytical methods for assessing the performances of work processes.

By the mid 1970's, after investigations in European and Japanese shipyards, NSRP initiatives isolated IHI of Japan as the world's most effective manager of shipyards. One initiative focused on publishing managerial logic and principles. The product work breakdown devised by IHI for merchant-ship construction was first published in English by the NSRP in 1980. (6) Various other aspects of IHI's managerial approach were so published during the next seven years.

Since 1980, two large U.S. shipyards, both with the assistance of IHI consultants, applied a product work breakdown for U.S.-flag merchant-ship construction and continue such operations for Navy and other work. While what they have accomplished in changing their corporate cultures is impressive, it is not likely that the managers of both yards would claim that their revolutions are complete. Neither yard has had enough heavy-construction projects for which they could negotiate build strategies, a prerequisite for further developing their product-oriented approaches. There is no evidence that either yard is now primarily dependent upon college-educated middle managers who are free of traditional-craft restraints. There is no confirmation that either yard is fully benefiting from statistical analysis of structural-accuracy variations which was first published by the NSRP in 1982.

MIXED SIGNALS FROM THE NAVY RE MODERN MANAGEMENT METHODS

Introduction of what the NSRP had disclosed about modern shipyard management in Japan, was manifestly resented by the Naval Sea Systems Command's (NavSea's) senior military and civilian officials responsible in the early 1980s for knowing about shipbuilding methods and for producible warship designs. The NSRP did not then receive Navy funding and was likely seen as a competitive effort outside of the Navy's control. The lack of NavSea reception was indicative of what one observer noted as "the military's tendency to ignore the systemic nature of manufacturing." There was no NavSea initiative to at least confirm that IHI was employing the same product-oriented approach for effectively building 5,200 displacement-ton destroyers.

Demand came from NavSea's field organizations. Five naval shipyards have since employed a product work breakdown (called "zone logic") for ship alterations and overhaul work. One of them, Philadelphia Naval Shipyard (PNSY), at first assisted by IHI consultants, has had more such experience than all other yards combined and is now applying zone logic for the entire Ship Life Extension Program (SLEP) for modernization and overhaul of USS CONSTELLATION (CV-64). An enlightened series of PNSY commanders provided critically-needed leadership and, starting in May 1989, encouraged participants to present pertinent papers at SNAME's annual ship production symposiums.

But there were disquieting events in other field organizations. During 1982 the Norfolk Naval Shipyard achieved significant success with the Navy's first zone-logic experience applied for overhaul of machinery spaces in USS JOHN F. KENNEDY (CV-67). The initiative was attacked by senior officers who were part of the Navy's Shipyard Operations Review Team. One such critic became the next shipyard commander and immediately threw out the innovative approach. After another change of commanders, the application of zone logic was restarted.

In Puget Sound Naval Shipyard (PSNS), due to initiatives by a few civilian managers, zone-logic was applied during the tours of two shipyard commanders for installing weapons systems in cruisers, aircraft carriers and submarines and for overhaul of submarine ballast tanks. All are described in issues of the SNAME Journal of Ship Production published between November 1985 and February 1989. The largest PSNS zone-logic application was for installation of a Naval Tactical Data System (NTDS) in USS NIMITZ (CVN-68).

But in September 1989 the incumbent shipyard commander signaled his disinterest by refusing to let a paper be published about the successful NIMITZ experience. Thereafter during his tenure, PSNS lapsed back to the less-effective system-by-system methods, even for implementation of the same NTDS ship alteration in USS CARL VINSON (CVN-70). Since his departure the application of zone logic was restarted.

Similarly, two commanding officers at the Navy's Engineering Duty Officer School, Mare Island, California, sponsored lectures over a 3-year period on modern shipyard operations per the NSRP disclosures. A third discontinued them. The same subject material is now incorporated in the MIT summer course that is primarily attended by Navy military and civilian officials.

During these on-again off-again experiences, in fact since the early 1960s, Department of Defense Instruction (DoDI) 7000.2 provided unheeded advice which provoked the following comment soon after the November 1980 disclosure of IHI's product work breakdown structure:

> "DoDI advises shipbuilders to '...be continuously alert to advances in management control systems....' It does not require '...the use of any single system....' Thus, the initiative is open to shipbuilders! Also, the DoD instruction defines a work breakdown structure as: 'A product-oriented family tree division of...work tasks which...define the product to be produced as well as the work to be accomplished....' The Navy's Ship Work Breakdown Structure (SWBS) does not fulfill this definition because it is system oriented. Neither does it conform with current U.S. shipbuilding methods nor with the world's most productive methods. Thus, the Navy itself is impeding implementation of advances in management control systems!" (7)

RECOMMENDATIONS

> America requires "...an unprecedented ability of the entire economy to shift back and forth between peacetime and defense production, practically at an instant's notice. This demand on which our survival may well depend, is above all a demand on the competence of managements...."
>
> Peter F. Drucker
> 1958

1.0 The most effective way to cause the conversion of defense-dependent private shipyards, is for DoD to use its still considerable purchasing power to cause modernization of private-yard management.

1.1 This means imposing certain conditions such as for more college-educated middle managers; organization of people, information, and work per product work breakdown structures; statistical control and literal interpretation of DoDI 7000.2. for the collection of costs, including overhead allocations, per in-house product. This latter measure would significantly contribute to low-overhead shops being able to compete for non-defense work.

1.2 DoD would have to modify regulations and practices for contracting with private shipyards in order to both facilitate and encourage the needed changes in corporate cultures. Negotiation of contract designs, or the effect of negotiation, would have to be achieved so that each contract would simultaneously protect the Navy's functional requirements and a shipyard's manufacturing system.

1.3 Regard for protecting the manufacturing system also requires DoD to consider alternate schemes for warship-acquisition contracts. For example, a fixed-price contract is appropriate for all fabrication and assembly work performed on rationalized work flows which culminate at some key event, such as, launching, undocking, or start of tests. Thereafter, another contract form should be considered, particularly for weapons tests that border on developmental work and for change orders which, on account of their scopes and/or untimeliness, must be deferred because they would otherwise disrupt the rationalized work flows, i.e., management's analytical methods for monitoring how work is being performed. Since planning for virtual work flows on board specifies a type of work to be done during a specific stage in a specific zone, the two different contracts could overlap to a reasonable degree. In other words, the major amount of work would be performed "on-flow" per the highly-efficient modern approach; the remaining work would be performed off-flow per traditional methods and, perhaps, with subcontractor assistance.

1.4 DoD would have to modify regulations and practices which inhibit each shipyard from extending its manufacturing system so as to include only a limited number of material suppliers and subcontractors. This means allowing shipyards to discontinue the practice of buying material and services on price tag alone (Deming's point four).

1.5 DoD would have to impose and enforce specifications for structural accuracy that are statistically derived from how the industry normally performs instead of imposing arbitrary specifications which are not usually fulfilled. For extraordinary accuracy requirements, the statistically-derived specifications would serve as the baseline from which to negotiate the abnormal work required. The same applies to pipe-piece manufacture. Identification of how work processes normally perform would greatly enhance DoD's ability to apportion the manufacture of outfitted and painted hull blocks for a large ship, among two or three shipyards for the purpose of keeping their manufacturing systems viable.

1.6 There is an opportunity for DoD to initiate a project that would finally dispel the traditional notion that warship building is different. The project would greatly increase U.S. shipbuilders' knowledge of an effective product work breakdown structure for a complicated warship. With DoD cooperation, Japan's Defense Force (JDF) is now having three AEGIS cruisers built by Mitsubishi Heavy Industries. IHI is now attempting to obtain the contract for a forth AEGIS cruiser. Thus, DoD should request that the JDF authorize IHI to disclose a non-classified AEGIS-cruiser build strategy. Then DoD should fund a project which would: (a) engage IHI to prepare an illustrative booklet similar to what IHI prepared ten-years ago for merchant-ship construction, Reference (6), that would disclose a product work breakdown structure for building an AEGIS cruiser; (b) provide for editing and publishing the IHI copy for the benefit of U.S. warship builders.

2.0 Since a policy already exists which requires public shipyards to compete with private shipyards for certain defense work, private-yard conversion can be accelerated by DoD using its direct authority to force modernization of public-yard management.

2.1 In order to create this powerful incentive, DoD will have to find out why modern management approaches that feature a product work breakdown have been started by some senior Navy officials and cancelled by others. There are pertinent unanswered questions:

"Is the cause for such regression the fact that some shipyard commanders have insufficient knowledge of a manufacturing system per se? Could it be that they do not know that even overhaul work can be rationalized? Do that know that rationalize means to bring in accord with reason? Do they think that the more than fifty-year-old corporate cultures which characterize naval shipyards and which were

suitable when ships were simple, are reasonable for the modernization and overhaul challenges imposed by today's warships? Is the problem the not-invented-here syndrome that is prevalent enough for its acronym, NIH, to be generally understood.

"Are insuffciently-educated middle managers who do not understand group technology the problem? Are there such managers who do understand who do not wish to concede "rice bowls" associated with archaic system-by-system operations? Is the problem due to traditional cost collecting methods which permit apparent performers to thrive throughout all managerial levels?

"Imagine the morale of those in Puget Sound Naval Shipyard who dared to innovate...[whose work was acclaimed by the Society of Naval Architects and Marine Engineers and afterwards rejected by a successor shipyard commander].

"What was so different in Avondale Shipyards, Inc., National Steel and Shipbuilding Co., and Philadelphia Naval Shipyard which has caused continued reliance on interim-product orientation? Since the pertinent technology is not difficult to understand, the Navy's best interest would be served if credible people pursue the answers to such questions and publish their findings." (8)

2.2 Since PNSY is scheduled for closure, DoD should find a way to retain its modern zone-oriented planning capabilities which feature design as an aspect of planning, for the benefit of the other naval shipyards.

3.0 Since corporate knowledge resulting from long-term "constancy of purpose for improvement of product and service" (Deming's first point) is essential for maintaining the viability of private yards for both defense and non-defense work, DoD should strive to overcome the political forces which cause "waste" of DoD purchasing power on opportunists who create ad-hoc manufacturing systems in response to availability of certain government funds (e.g., funding for SeaLift ships).

4.0 DoD should solicit the cooperation of other government agencies to dedicate, or at least identify, non-marine work that government funds support to facilitate the conversion of shipyards (FHA/steel bridges; DoE/power-plants, EPA/toxic-waste incineration plants, etc.).

References

1. Peter F. Drucker, Management - Tasks, Responsibilities, Practices, Harper & Row, NY, 1973, ISBN 0-06-011092-9, p. 560.

2. "Boeing's bold switch toward Japanese-style work teams," The Seattle Times, 7 April 1991.

3. "At Ishikawajima-Harima Heavy Industries each employee submits an average of 18 suggestions for improvement per year." from "View of Japan's Industrial Engine," Daily Journal of Commerce, Seattle, Washington, 29 April 1992.

4. "A Study of Shipbuilding Cost Estimating Methodology," for the Maritime Administration by Engineering & Management Sciences Corporation, 20 January 1969.

5. H. Shinto, former IHI president per interview by L.D. Chirillo at the University of Michigan, Ann Arbor, October 1980.

6. Product Work Breakdown Structure, November 1980, Revised December 1982 and completely reprinted in the record of the 20 June 1984 Hearings before the Subcommittee on Merchant Marine, Serial 98-57, pp. 299-383.

7. L.D. Chirillo, "A Presentation to the Institute for Research and Engineering for Automation and Productivity in Shipbuilding (IREAPS) Technical Symposium," 15 September 1981.

8. L.D. Chirillo's contribution to the Closure Statement which replies to discussions of the paper, "Information Required from Planning Yards to Support Zone Logic," presented by R.L. Storch and L.D. Chirillo to the SNAME Ship Production Symposium, 3-6 September 1991

The following example of U.S. shipbuilders' accuracy shows that only 4 of 15 principal dimensions were acceptable (from ABS Worldwide Technical Services, FFG Class Hull Form Investigation, Report WTS 37244, April 1985, Volume I, Part III):

"1.0 HULL DIMENSIONS

The FFG's 40, 41 and 42 photogrammetric analysis indicate that their principal dimensions differ in inches (to the closest eighth) from design dimensions (FFG 00) as follows:

	FFG 40	FFG 41	FFG 42
LOA	-13 1/4	- 6 1/4	- 7 1/8
LBP	- 3 1/8	- 3 1/4	- 1/8
Beam (Midship, Main Deck)	- 1 1/2	- 2 1/4	- 1/2
Beam (Midship,, DWL)	- 2 7/8	- 4 1/4	- 1 1/8
Depth (Midship, Main Deck)	- 1 1/8	+ 2	- 1 1/8

1.1 HULL FORM TOLERANCE CONSIDERATIONS

When applicable construction tolerances are considered, the FFG's 40, 41 and 42 principal dimensions compare to the actual design dimensions as follows:

	FFG 40	FFG 41	FFG 42
LOA	- 8 3/4	- 1 3/4	- 2 5/8
LBP	Acceptable	Acceptable	Acceptable
Beam (Midship, Main Deck)	- 1/2	- 1 3/8	Acceptable
Beam (Midship,, DWL)	- 1 7/8	- 3 1/4	- 1/8
Depth (Midship, Main Deck)	- 1/8	+ 1	- 1/8"

NOTE: In the mid 1970's a practicing photogrammetrist, John F. Kenefick Photogrammetric Consultant Inc. of Indialantic, Florida was engaged by the National Shipbuilding Research Program to show how aerial survey techniques could be adapted to accurately dimension ships' structure. Since publication of the booklet, "Photogrammetry in Shipbuilding - July 1976," there have been more photogrammetric surveys in U.S. shipyards than in all of the world's shipyards put together. Newport News Shipbuilding was the first shipyard corporation to bring its own photogrammetric system on line. During photogrammetric surveys, information of unprecedented accuracy is collected from photographs via analytical processes, not subjective interpretation. Such surveys produce irrefutable evidence as sometimes needed for adjudication. Thus, DoD should require photogrammetric surveys before delivery of all construction for which dimensional tolerances are specified. Accuracy and productivity are directly related and accurate alignment of strength members serves military requirements, e.g., high-impact shock protection and maximizing submarine submergence depth.

Statement Accompanying the 24 September 1992 Written Submittal
by Louis D. Chirillo of Bellevue, Washington
to the Department of Defense
Defense Conversion Committee

My submittal addresses the need to modernize shipyard management per Peter Drucker's 1958 advice:

> America requires "...an unprecedented ability of the entire economy to shift back and forth between peacetime and defense production, practically at an instant's notice. This demand on which our survival may well depend, is above all a demand on the competence of managements...."

The submittal discusses:

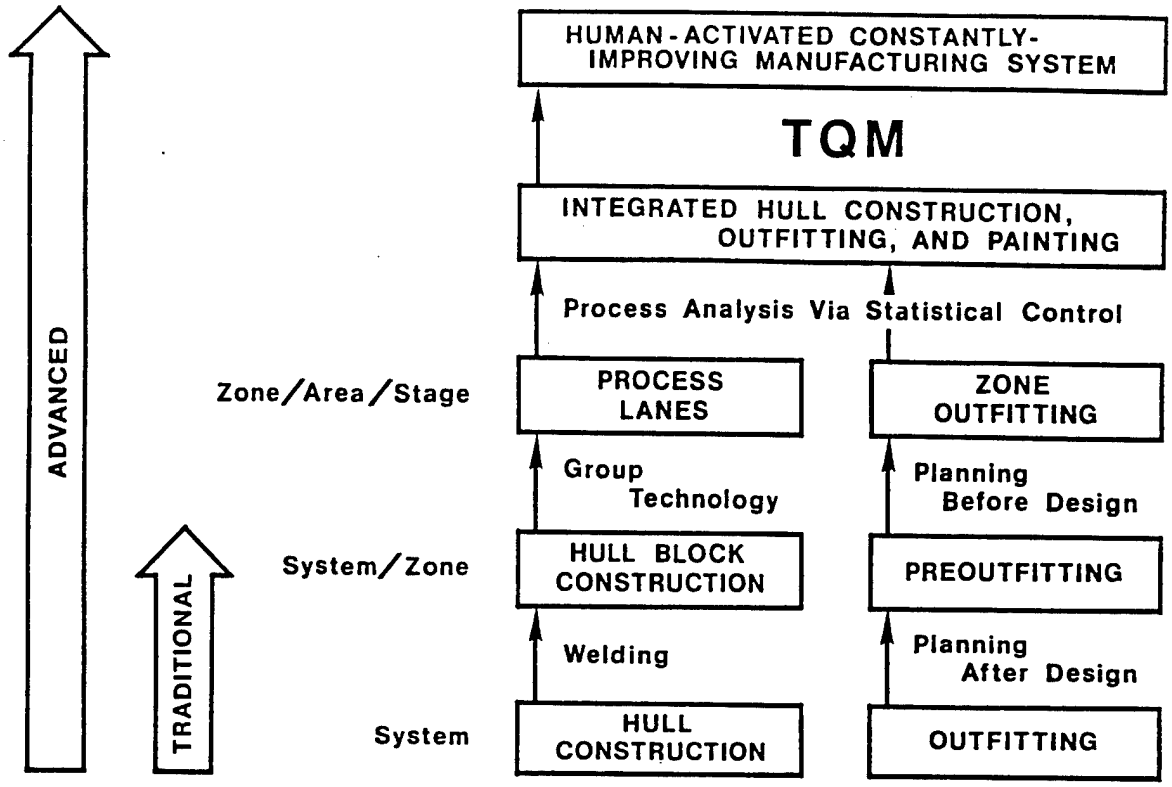
- o Traditional Operations,
- o Rationalized Operations,
- o Applicability for Other Than Ship-Related Work,
- o Failure of Subsidies to Encourage Modern Management Methods,
- o Mixed Signals from the Navy Re Modern Management Methods, and
- o Recommendations.

The recommendations focus on what the Department of Defense (DoD) should do to cause modernization of private-shipyard management, because the flexibility inherent in modern approaches facilitates diversification.

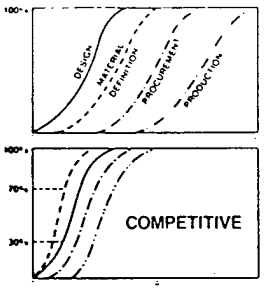
The recommendations also address what the DoD should do to force the modernization of public-yard management, because the threat of a naval shipyard performing equivalent work with fewer man-hours would truly motivate private-yard managers.

The 35mm slides used in this verbal presentation identify:

- o five levels of shipyard technology development (see the attached figure),
- o why traditionally-managed yards are only at the second level,
- o diversification in a U.S. shipyard that has progressed into the third level, and
- o the advanced management disciplines necessary to achieve true total quality management (world-class status) at the fifth level.



Identifiable Levels of Shipbuilding Technology Development. "Zone/area/stage" are product aspects. "Area" (problem area) designates the problems inherent in manufacture. Statistical control techniques provide the "barometers" which indicate how work processes are performing as needed for integrating inherently different kinds of work and as needed to identify problems. When such conditions exist, the worker groups that match the organization of work flows are likely to respond with suggestions for bit-by-bit improvements as a routine matter. This is the character of a constantly self-improving manufacturing system needed to achieve the fifth level of technology development.



L.D. Chirillo

11 August 1992

Defense Conversion Commission
1825 K Stree NW, Suite 310
Washington, DC 20006

Dear Commission members:

Regarding shipyard operations please find enclosed:

- "Statement by Louis D. Chirillo to the Commission on Merchant Marine and Defense, 18 July 1988" (SNAME Journal of Ship Production, February 1989, pp. 61-65) which in Recommendation 2 on page 64 suggests:

  "...Government aid to secure construction work of <u>any kind</u> should be granted, but only to shipyards which are judged to be part of the mobilization base and are demonstrably adopting analytical means for constantly improving their manufacturing systems." [emphasis added]

- "TQM? Inconceivable in Most Shipyards!" (Naval Engineers Journal, January 1992, pp. 80-83) which summarizes the needed analytical methods and which, under the heading "marketing," starting at the bottom of page 82, advises:

  "Government officials concerned with maintaining the shipyard mobilization base have yet to grasp the fact that construction and overhaul work of virtually any kind increases the capability of statistically-analyzed, rationalized work flows to better perform warship related work."

I recommend that you focus on incentives that will lead shipyard managers into diversification. Too few are so involved with too little of their resources. Avondale Shipyards, Inc., an exception, proved that U.S. shipyards can significantly participate in non-marine markets by delivering in the past few years: power plants, toxic-waste incineration plants, bridges, processing plants, and a floating jail.

I would be very pleased to give a pertinent presentation during your 23-24 September hearing in Seattle.

Respectfully,

L.D. Chirillo

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Journal of Ship Production, Vol. 5, No. 1, Feb. 1989, pp. 61–65

Statement by Louis D. Chirillo[1] to the Commission on Merchant Marine and Defense, 18 July 1988

Mr. Chairman, Commission Members:

I am pleased to submit this statement and hope that it will contribute to bettering the merchant marine and defense of our nation.

Introduction

It is fair to assert in the beginning that this statement is biased in favor of renewed Government support of our merchant marine and as a necessary adjunct, U.S. shipyards, but not at any cost.

My perspective is that of a grade-school kid in Brooklyn who had no other ambition than to "ship out," who realized that opportunity, and who more than five decades later still believes that the Government should continue support of the U.S. Merchant Marine Academy and U.S.-flag shipping as means to encourage young people today who are so obsessed while at the same time significantly contributing to our defense potential.

My perspective is that of the teenager who as a cadet-midshipman in a merchant ship participated in the early 1942 reinforcement of Australia, who took part in troop movement to the United Kingdom in mid-1942 when German submarines were sinking U.S. merchant ships at a rate not exceeded before or afterwards, who observed the troop debarkation from merchant ships in Algeria during the November 1942 North African Invasion, and who even now believes that the Government should support military characteristics in merchant ships particularly regarding speed, communications, fresh-water distilling capacity, and Arctic/Antarctic operating capabilities.

My perspective is that of the career naval officer who, having had duty in various naval ships as chief engineer, in the production and planning departments of naval shipyards, in the Navy's technical bureaucracy, and as a maintenance officer assigned to an operations/logistics staff, appreciates that:

- crew morale is a military requirement that cannot be casually subordinated to shipyard managers' demands for ships to be overhauled for extended periods away from their home ports, and
- cost overruns and delayed delivery dates for both construction and overhauls, in terms of readiness, are the equivalents of ships damaged or sunk by an enemy.

My perspective is that of the senior naval officer who in the early sixties was the principal officer in charge of administering engineering and inspection for 1.6-billion dollars' worth of naval construction and conversion of almost all types of naval ships, hydrofoils, and boats then existing, who learned from that experience that traditional shipbuilding is fraught with both government- and contractor-responsible rework, and that administration of such contracts and their implementation are adversely affected by both government and shipyard bureaucracies who constantly strive to perpetuate themselves by political or other means [1].[2]

My perspective is that of a post-Navy project engineer, for construction of an intensely-outfitted naval auxiliary, who now knows from that experience that:

- traditional system-oriented operations, while they may have been adequate when ships were simple, are incapable of adequately integrating hull construction, outfitting and painting activities as required for modern ships, particularly naval ships;
- system-by-system performance of work yields inadequate corporate data as needed for accurate man-hour budgeting and scheduling; and
- functional organizations do not contribute to the critical need for developing essential generalist managers.

Finally, my perspective is that of the researcher assigned in 1971 to improve outfitting of ships as part of the unique Maritime Administration/shipbuilding industry National Shipbuilding Research Program (NSRP), who:

- observed that outfitting, as performed traditionally as a successor function to hull construction, could not be significantly improved without improving overall management methods;
- investigated in Europe and in Japan and was one of the first to identify Ishikawajima-Harima Heavy Industries Co., Ltd. (IHI) of Japan as the world's foremost manager of shipyards;
- learned of IHI's American background in the form of Mr. Elmer Hann, a former manager in Henry Kaiser's World War II Swan Island Shipyard, who in behalf of National Bulk Carriers of New York leased and operated a former naval dockyard (now IHI Kure Shipyard) for a period of ten years starting in 1951;
- initiated a series of subcontracts which obligated IHI to disclose logic and principles of various aspects of management methods employed;
- associated the IHI disclosures with sound management techniques, such as statistical process control as advocated by Dr. W. Edwards Deming, product organizations per Peter Drucker, and Group Technology, that could not be generally understood for application in shipyards until publication of IHI's product work breakdown structure [2];
- until the cutoff of NSRP funding on 1 October 1987 actively promulgated such research end products in many booklets, papers and seminars and observed overflow into U.S. naval shipyards, Canada, the United Kingdom, and elsewhere [3];
- monitored degrees of success achieved by the U.S., Canadian and U.K. shipyard managers who have dared to substitute modern product work breakdown structures in place of archaic system work breakdown structures in their management systems for construction of ships and end products other than ships; and
- as a consultant since 1 October 1987 conducted seminars

[1] L. D. Chirillo, Bellevue, Washington, U.S.A.; also, chairman, Panel SP-2 (Outfitting and Production Aids) of the Ship Production Committee, The Society of Naval Architects and Marine Engineers, and a manager for the Government/Industry, National Shipbuilding Research Program (1971–1987).

[2] Numbers in brackets designate References at end of paper

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on product orientation for building, modernizing, and overhauling ships and end products other than ships, in shipyards and allied organizations in England, Scotland, and Northern Ireland, in Eastern and Western Canada and most recently in six cities in Australia and New Zealand for the Australian Department of Defense in order to indoctrinate the consortiums competing for the multi-billion dollar ANZAC Frigate Program.

Product orientation in shipyards

The following paragraphs, quoted from a paper soon to be presented to the 1988 Ship Production Symposium, are sufficient for briefly describing product orientation as applied for shipyard operations:

> Many are familiar with or at least aware of the logic revolution irreversibly established in some North American shipyards. Basically, information that had been grouped only by system, for example, as on a system arrangement and detail drawing, is now grouped in the design process to exactly anticipate the parts, subassemblies, and assemblies, that is, the *interim products,* required to build ships. In each case, the build strategy which guides designers in so grouping information, is imposed before contract design starts!
>
> When the interim products are grouped *by the problems inherent in their manufacture,* even for different ships being built simultaneously, production lines can be organized which are just as effective as counterparts in the automobile manufacturing industry. This approach which examines required interim products with different eyes so to speak, looks for manufacturing commonalities and ignores differences in design details. The organization of alike work in this manner is called Group Technology (GT). GT is the most ideal way to process interim products of different designs in varying quantities as required for ships and for many end products other than ships.
>
> For certain interim products, production lines sometimes constitute *real work flows* wherein materials are conveyed from work station to work station. In contrast, when a team of workers is moved from site to site and the work category at each site remains the same, the effort is regarded as *virtual work flow.* The impact on people is the same as if they were at fixed work stations and a conveyor was transporting the materials being worked. The objective of work flows, both real and virtual, is to avoid the greatest single loss in any industrial endeavor, that is, people waiting for work.
>
> Rationalizing virtual work flows is extremely important because they are means for effectively organizing very much of the ship production effort, particularly outfitting and painting, and because they are means for bringing unprecedented order to nearly all shipboard . . . activities. Whereas, traditional methods which feature system-by-system work packages assigned to different supervisors are always issued with the inferred management copout, "Somehow coordinate among yourselves."
>
> As work on one system conflicts with work on other systems in an infinite number of ways, traditional supervisors are preoccupied with reacting to day-to-day changing circumstances. Such disruption is significantly reduced with the product-oriented (also called zone-oriented) approach because all work of one type . . . is planned to be performed in a specific zone during a specific stage. No two work teams doing different types of work are unintentionally scheduled to be in the same zone at the same time.
>
> In the absence of conflicts, productivity indicators, such as, man-hours per lineal foot of welding, become very predictable. This association of man-hours with a discrete product is essential for true compliance with the U.S. Department of Defense cost/schedule control system criterion for a work breakdown structure to ". . . define the product to be produced as well as the work to be accomplished. . . ." [4]
>
> Equally important, each envisioned interim product, that is, what is to be worked in a specific zone during a specific stage, becomes a focal point for organizing prerequisite work instructions, materials, and manpower. . . . As a consequence, the preparation of work instructions and the procurement and marshaling of materials . . . proceed in accordance with the exact same strategy to be applied by production people. . . .
>
> Also, because their system-oriented work packages are usually large and scheduled for implementation over relatively long periods, traditional supervisors become skilled at retaining unspent budgeted man-hours from one system in order to charge them to another system for which they would otherwise have a budget overrun. Usually, their intent is not deceit. More often, they want to avoid having to make explanations when they are preoccupied with reacting to more unforeseen problems. The consequence is experience vested in supervisors only, that is, inadequate corporate experience.
>
> The most important thing in any industrial enterprise is how to analyze. Corporate experience is crucial for accurately . . . budgeting man-hours based on workers performing normally in a statistical sense, for scheduling with certainty based on mean values and standard deviations, and for constantly setting targets for improvement. . . . Adequate corporate experience can only be derived from a product work breakdown structure with people and information grouped accordingly. Work organized by zone/stage which is also classified by problem area per GT logic, is susceptible to statistical analysis. When work is so organized, Dr. W. Edwards Deming's fourteen points for management become alive. . . . [5]

Levels of shipbuilding technology

The pertinent NSRP research has identified five levels of shipbuilding technology development; see Fig. 1:

First—Obsolete

Hull frames and plates were separately erected on building ways with system-by-system outfitting after a hull was essentially complete. People installing different systems competed for access to work.

Second—Preoutfitting

This is traditional and typical of most current naval ship construction. Because shop-built hull blocks are a natural

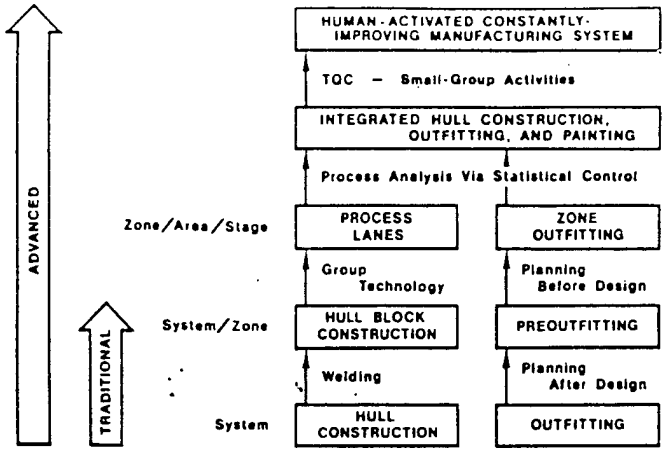

Fig. 1

consequence of the introduction of welding, *after* detail design is completed, planners organize work by defining the portion of each system to be fitted in each hull block. While there is improved access, people still compete for access to work. Fitting work on ceilings is still performed by workers with their arms over their heads. In the interior of relatively large hull blocks work is essentially per the old-time first level of technology development.

Third—Zone outfitting

Only two U.S. shipyards have demonstrated with completed construction programs that they command this level of technology development. Both received guidance from consultants made available by IHI Marine Technology, Inc. and have achieved this level within the last six years. IHI reached this level 20 years earlier.

As shown in Fig. 2, planning is before the fact, that is, a build strategy is imposed before contract design starts and as the design process makes more information available the strategy is refined. People work smarter, not harder; for example, fitting work on ceilings is planned and scheduled for implementation when hull blocks are upside down.

Planning *before* the fact enables detail designers to work in the same sequence that will be employed in production and to group information, including material lists, exactly as needed to manufacture parts, subassemblies and assemblies classified by problem area for execution in real and virtual work flows per GT logic. As a consequence, material matters are addressed in the same sequence. Detail designers and people concerned with materials no longer spend time early in a program on sections of systems that production doesn't need until late in the program.

The need for the shipbuilder to participate in contract design is vital. A letter of intent is the mechanism used in the commercial world while an owner and builder work toward achieving a mutually satisfactory contract design. Some other mechanism is needed for warship procurement. A paper about to be presented indicates that the U.S. Navy's approach for developing the contract design for SSN-21 Class submarines may satisfy the vital need to incorporate a build strategy in a contract design. The approach for the SSN-21 Class is definitely product oriented. But, it remains to be seen if a sufficient amount of interim products will be produced on real and virtual work flows in order for the effort to be regarded as fully consistent with the third level of technology development [6].

Figure 3 illustrates learning curves reflected by two shipbuilders' bid records for the first eight LSD-41 Class ships. As shown, the now closed Lockheed yard in Seattle lost LSD-44 to Avondale's yard near New Orleans. Of the $59 000 000 bid differential, perhaps as much as one third could be attributed to the higher wage rate in the Pacific Northwest relative to that on the Gulf Coast. The remainder is due to Avondale having achieved greater command of this third level of technology. Avondale invested in significant redesign consistent with a much more effective build strategy. Evidence of performance solidly in this third technology level is Avondale's use of numerical control (N/C) cutting for *all* of the approximately 9000 deck and bulkhead penetrations in LSD 44 and only having to rework about 240.

Complimenting Avondale's redesign effort is that by MIL Davie, Inc. near Quebec for redesign of a 15 300 displacement-ton ferry. As a consequence of achieving the third level of technology, man-hours were reduced by at least 30% as compared to the immediately previous such ferry built with second level technology. These two experiences suggest that there are enormous savings available to the U.S. Navy if all or portions of current follow-ship detail designs, particularly

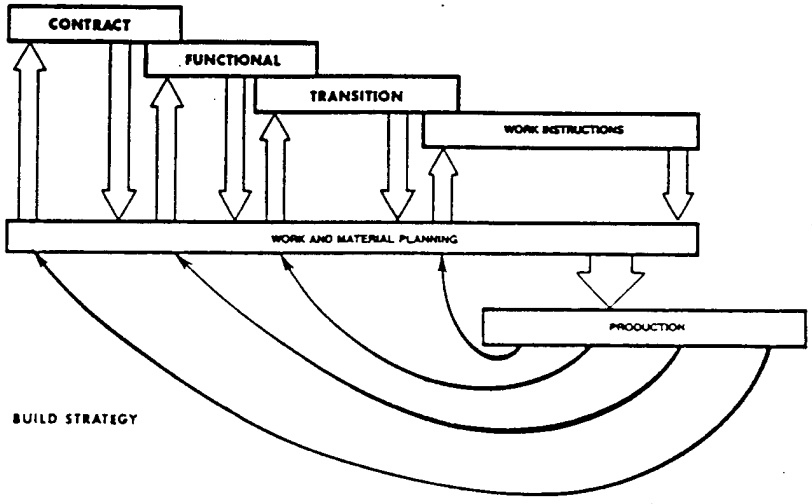

Fig. 2

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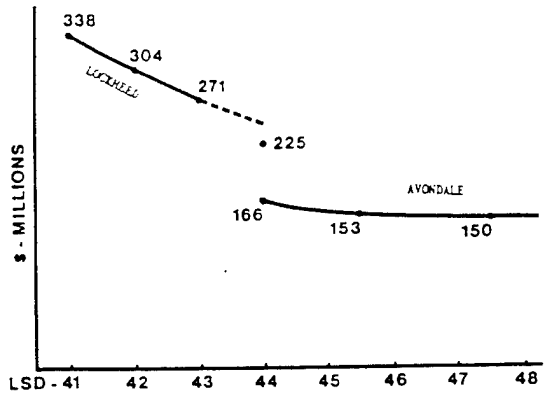

Fig. 3

for Nimitz-Class aircraft carriers, are modified to be consistent with third level technology.

Fourth—Integrated hull construction, outfitting, and painting

No shipyards outside of Japan are known to be performing at this level. Statistical control techniques, first documented in 1924 in the U.S. and promoted throughout Japanese industry by Dr. W. Edwards Deming, are essential. The most important thing in any large industrial undertaking is addressed, "How to analyze." With work organized as described for the third technology level, statistical techniques applied to accuracy, man-hour consumption, and time-required variations enable production engineers to identify work performing normally and to be able to realistically establish man-hour budgets and schedules.

With such knowledge of how the work flows are performing, managers who have achieved the fourth level coordinate work flows for the inherently different types of work, that is, hull construction, outfitting, and painting with unprecedented precision. This approach, called "Takuto" a corruption of the German word for "baton" and also used in industries other than shipbuilding, envisions a manager listening to the performances of the work flows and regulating to maintain their coordination just as an orchestra leader realizes a composition. "Takuto" is essential for just-in-time procurement of materials and manufacturing of interim products. The benefits are greatly reduced requirements for materials in process and for shop platen areas.

The precise integration of hull construction, outfitting and painting has made the "amount of outfitting complete at launch" an archaic yardstick. Now, the question to ask is, "How much outfitting and painting is complete at keel laying?"

Fifth—Human-activated, constantly improving manufacturing

No shipyards other than IHI's are known to be effectively operating at this level. When work is performed in organized flows having distinct stages, when workers are grouped to match the organization of work, and when statistical control techniques are applied, statistical charts posted at work stations advise anyone concerned of how work is being performed.

The same charts also separate problems that are the fault of management's manufacturing system from those that are due to other reasons, for example, workers. Per Dr. W. Edwards Deming, "Eighty-five percent of problems encountered are caused by managements' systems. When managers respond accordingly, workers find that they are not being blamed for things they can do nothing about and are more apt to make suggestions for improvement." Thus all ingredients exist for spontaneous quality circles. These, as they are analytical in nature, endure. Whereas, quality circles based just on slogans are subject to waning interest.

In IHI shipyards as in many other industries in Japan, the spontaneous responses were recognized. Workers were taught analysis techniques such as the use of Pareto and Cause and Effect Charts. As a consequence, improvements in both design details and work methods are made bit-by-bit every day. Individually they may have little noticeable effect, but cumulatively they are appreciable and frequently require the principal operating manager:

- to adjust resources among work flows in order to maintain their integration,
- to revise man-hour budgets and schedules, and
- to advise estimators and marketing people of the manufacturing system's latest capability and availability.

As a consequence of such analytical quality circles, even the rate of improvement is projected. When a bid is made for a construction project, it is discounted by the amount of improvement expected during such construction opportunity. In contrast, Fig. 4 illustrates the fallacy of depending on just a learning curve, that is, Government support to fund multiple ships of the same type. Any third-world shipyard can demonstrate a learning curve. Now it is far more important to invest Government funding in developing this fifth level of technology so that constant displacement downwards of the entire learning curve, is a routine objective.

Recommendations

The recommendations submitted to the House Merchant Marine Subcommittee in 1984 are still valid and are reiterated:

1. As public funds should not support shipyards at any cost, Government should require statistical evidence of quality (accuracy) and productivity, using such evidence from Japan as a yardstick, before making a commitment for subsidy of any kind and before awarding contracts for building ships (Navy, Coast Guard, etc.).

2. As *constant* technology development cannot be sustained by a team of managers and workers without opportunities, and since modern shipbuilding systems are essential elements of defense, Government aid to secure construction work of any kind should be granted, but only to shipyards which are judged to be part of the mobilization base and are

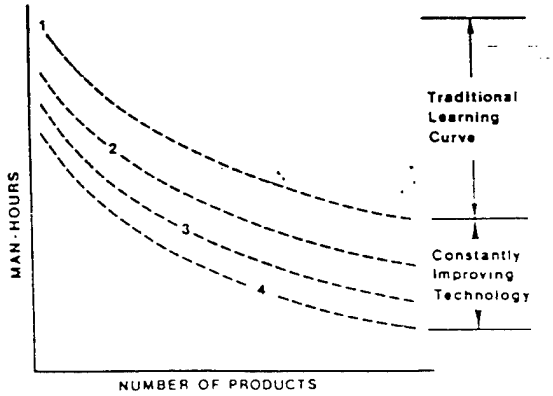

Fig. 4

demonstrably adopting analytical means for constantly improving their management systems.

3. As contract design is a vital part of a shipbuilding system involving a ship's performance, how it will be built and its cost, no requirement for Government aid should force disclosure of proprietary information such as light-ship weight or hull lines, or otherwise detract from a shipbuilder's need to control contract design during negotiations with a customer.

4. As decisions regarding procurement of materials and services are vital aspects of production control which must be balanced with man-hour allocations and scheduling, since building a file of vendor-catalog items to be declared as shipyard standards is an essential productivity measure, and since statistical evidence of quality should also be demanded from suppliers, no requirement for Government aid should force shipyards to deal with an inordinate number of suppliers, to procure materials and services on the basis of low bids only, or to require anything that detracts from a production control manager having absolute control of required materials and services specifically including purchasing activities.

5. As the National Shipbuilding Research Program is a defacto research consortium, being a cost-shared Government/industry program, which has momentum and is successful, described in a 1976 Rand Corporation report of Government funded efforts as one of the five most effective research programs in terms of development and implementation achieved, it should be recognized as such by Government agencies, continued and further supported.

6. As more educated managers are required, particularly to operate shops, Government should support a massive education program by industrial engineering departments in universities to teach Group Technology and Statistical Control Methods, with some courses specifically dedicated to shipbuilding, in order to reach prospects who may ultimately be employed by shipbuilding firms, by the many companies in different industries which furnish materials to shipyards, and by customers for ships and end products other than ships that could be built in shipyards. [7]

The above recommendations are supplemented by two suggestions from Dr. H. Shinto, a former IHI President and now president of Japan Telegraph and Telephone Corporation.

In commenting on past subsidy practices in America, Dr. Shinto urged that there be a greater element of competition. His approach would be for a government to designate a trade that it wanted to develop. Owners that wanted to apply would have to combine with a shipbuilder to submit a proposal reflecting the combined economies inherent in a particular ship design and a particular building strategy. The Government would then select and subsidize the best such proposal from competing owner/shipbuilder teams. Dr. Shinto added, "This is how we obtained ships in the trade from South America to Japan that carry iron ore below and wood chips above." The Government advertised such challenges designed to force both ship and shipbuilding technology development, in a way that best served Japan [8].

Dr. Shinto also advised, "The American worker is excellent. All you have to do is change the minds of managers." [9]

In this context, the National Research Council (NRC) reported four years ago, "The transition from systems-oriented to zone-oriented shipbuilding methods requires development of technical, professional, and managerial skills to cope with the integration of previously segregated functional skills, more precise information, improved technical understanding, and greater facility in dealing with earlier decision making. It will impact the education and training needs of those who acquire or build ships including senior Navy and shipbuilder management, middle-level Navy and shipbuilder management, first-line supervision and the general work force. . . ." A two-day seminar for senior managers, a ten-week continuing education course for middle managers, and expanded in-house training for first-line supervision and the work force was outlined as part of the same NRC recommendation. So far there has been no response to this critical need by any U.S. Government agency or the industry [10].

Aircraft carriers and submarines today, for example, are far more complex than they were 40 years ago. Yet, while their problems have changed dramatically, most public and private shipyards, in terms of logic, remain organized just as they were 40 years ago. They will remain so ad infinitum until their senior managers understand modern product organizations.

Thank you for this opportunity to express my views.

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TQM? Inconceivable in Most Shipyards!

by Louis D. Chirillo

[Derived from a presentation to the 13 June 1991 meeting of the ASNE Puget Sound/SNAME Pacific NW Sections]

INTRODUCTION

A lot of what has been written about Total Quality Management (TQM) cites decades-old ideas. Peter Drucker, the management analyst, attributes much to IBM's Thomas Watson, Sr. (1874-1956) who "believed in a worker who saw his interests as identical to those of the company. He wanted, above all, a worker who used his own mind and his own experience to improve his own job, the product, the process, and the quality." [1]

Why then do Western apologists "knee jerk" into the unique something about the Japanese that enabled many of them to achieve TQM while few others did not? Knowledgeable Japanese admit to following IBM's lead, and if asked, would surely advise that they encountered the same obstacles that Watson overcame. "He created in the 1930s the social organization and the work community of the post industrial society." [2]

Thus a purposely provocative definition for TQM is set forth herein, accompanied by identification of what is most needed to meet the challenge, that is: rationalization, statistical analyses, and decentralization. Finally, some of the things that led to the Japanese management successes are exploited to confirm or further identify TQM prerequisites.

DEFINITION

The best definition of TQM is derived from the three words that make up the term. Since there are no hyphens, the first two words, *total* and *quality*, used as adjectives each separately modify the noun *management* as follows:

total management-application of the art of supervising to everything
quality management-excellent application of the art of supervising

Hence:

total quality management-excellent supervision of everything, no matter how big or small, important or unimportant.

Everyone and everything is included. TQM is about the quality of management, not the quality of products or services! But with excellent supervision of everything, quality products and services absolutely follow.

RATIONALIZATION

When something is wrong in a warship it is generally accepted that the captain is responsible. In a plant ashore the manager usually blames others. Yet they have common responsibilities, that is, the performance of quality work and the constant search for ways to do better the next time. Both assure the security of the people employed, a major management obligation in Watson's post-industrial society.

Perhaps the difference is due to the captain, department heads, division officers, and enlisted personnel constantly analyzing information, each at a summary level commensurate with responsibility about the ship's condition and objective. The difference may also be due to all of those in command having evolved and documented a rationale for a warship, and everyone and everything in it, as a single entity. [3]

In contrast, many shipyard managers have insufficient recognition of a manufacturing system per se. Their operating approaches are not due to rationalization, that is, organizing design, material marshaling, and production efforts in order to achieve integrated structural, outfitting, and painting work with focus on improving a shipyard's overall ufacturing system. Instead, their approaches result fro. dependent development of each functional trade. Typicany, for example, each shop manager is reluctant to accept small cost increases that would effect large decreases elsewhere.

Twenty-two years ago, a consultant advised of a shipyard need for a product work breakdown structure (PWBS) for planning, scheduling and controlling inherently different kinds of work in a rationalized system of work flows featuring subordinate flows that just-in-time support major flows. Stages within each flow designate distinct in-house customers and facilitate the accurate identification of costs (including overhead costs, rework costs and schedule adherence) per in-house product. Because work is classified by problems inherent in manufacture, an aspect of Group Technology (GT), supervisors and workers organized by traditional functional trades have to be reformed per *product* trades. A PWBS is the framework for the new corporate culture that is prerequisite for TQM. [4]

STATISTICS

Shipyard work that is planned per a PWBS is absolutely susceptible to statistical analysis regardless, for example, of the mix of pipe systems represented in a subassembly, and regardless of significant differences in subassembly designs.

Anything that varies with how rationalized work is performing is useful for statistical analysis. The most us variations occur in hull-construction and pipe piece ac cy, and in man-hours and elapsed time required per in-ho product by each work stage in each work flow. Analyses

keep planners and schedulers advised of how stages *normally* perform in terms of mean values and standard deviations. With variation-merging equations similar information is derived for an entire work flow, and, through the same technique, summarized for the overall manufacturing system. Decisions about quality, budgeting and scheduling are based upon how a manufacturing system and all of its elements *normally* perform.

Without statistical knowledge, normalcy cannot be identified, the trend away from normalcy, good or bad and to what extent, as may be caused by attempts at small improvements, cannot be detected, nor can the impact of a proposed improvement in one stage of a work flow be sufficiently evaluated for how it influences an entire manufacturing system. The employment of variation-merging equations, such as for predicting the accuracy of hull erection butts and seams, would be out of the question. A hull erection man-hour budget (usually about 40% of a structural effort) and schedule cannot be devised based on certainty. Without statistical methods applied for process control in shipyards, TQM is impossible. [5]

Customers who require statistical evidence of quality as a condition for contract award make a substantial contribution toward improving shipyard productivity and military readiness. Thus, the message that Japanese shipyard managers graciously published 24 years ago continues to deserve restatement, "Statistical control 'epoch makingly' improved quality, laid the foundation of modern ship construction methods and make it possible to extensively develop automated and specialized welding." [6][7]

COUNTING

Simple counting, a part of statistics, deserves separate discussion.

Few shipyard managers require designers to count the total number of parts in a ship design. Reducing that number through management by target is an essential productivity improvement technique.

Also, too few managers require designers to count the total number of engine-room pipe pieces associated with a particular type propulsion engine of a certain power rating. Not knowing that, they cannot know the percentage of easy-to-make pipe pieces. Per common sense, pipe pieces that are straight are the easiest and least costly to produce. Pipe pieces that can be completely fabricated as straight, with end fittings such as flanges attached, and bent in the final process, are in the next most-productive category. The manufacture of all other pipe-piece types is more expensive. For excellent application of the art of supervising, the pipe pieces in each such problem category must be counted.

If average pipe piece length increases, productivity improves because the design requires fewer pipe pieces. But designers would only be making a contribution to TQM if what they are achieving is corporate knowledge that can be used as a basis for setting a target. Similarly managers should know the number of pipe pieces that are fitted into outfit packages or on hull blocks compared to the number that are less productively fitted on board.

Unless designers are required to count parts and to code them by problems inherent in their processing, they will fail to fully exploit computer-aided design (CAD) systems.

DECENTRALIZATION

Nothing in the definition of TQM implies that only people with a manager's title can provide excellent supervision. In fact, workers are eminently more qualified to make the *largest percentage* of required planning, scheduling, implementing, and evaluating decisions. The most important feature in world-class shipyards is the management created climates in which each worker routinely uses "his own mind and his own experience to improve his own job, the product, the process, and the quality." [1]

Exploiting workers for management decisions makes sense for reasons usually cited by behaviorists. But there are two extremely practical reasons that behaviorists do not mention. There are too many small-scope decisions for managers to make. And, numerous small-scope decisions have more productivity improvement potential than the collective experience vested in a few managers.

Everything said about workers also applies to foremen and assistant foremen. Constant improvement of a manufacturing system is enhanced when responsibilities and authority are decentralized from the top in decreasing spheres of influence commensurate with each level's capability. But TQM cannot exist unless workers at each work stage in a work flow are given instant feedback about how their *own* work is performing, particularly regarding man-hour costs, schedule adherence and quality.

FOUNDATIONS

Drucker identified seven conceptional foundations that underlie the Japanese management boom. None are culturally related. They identify or confirm changes that managers elsewhere have to make in themselves and in the institutions they manage, in order to achieve TQM. They are:

(1) scientific management as the key to productivity,
(2) decentralization as a basic principle of organization,
(3) personnel management as the orderly way of fitting people into organization structures,
(4) manager development to provide today for the needs of tomorrow,
(5) managerial accounting, that is, the use of analysis and information as the foundation of managerial decision making,
(6) marketing,
(7) finally, long-range planning. [8]

Regarding each of Drucker's foundations:

(1) *scientific management as the key to productivity*

In shipyards a PWBS is required as a framework with information and people (skills) grouped to match. This is the essence of the radical, difficult-to-make change in corporate culture that must be managed.

Retention of the Navy's Ship Work Breakdown Structur a form of a breakdown by systems, for most shipyard operational matters and particularly for on-board work, perpetu-

ates traditional functional trades at the expense of the overall manufacturing system. For this reason alone, TQM is impossible.

(2) *decentralization as a basic principle of organization*

An effective manager insures that the same knowledge of how a manufacturing system is performing is maintained in different summary levels. In a manner of speaking, the same knowledge is maintained in a large-frame sense (relatively few groups), in an intermediate-frame sense (moderate number of groups), and in a small-frame sense (many groups). The same kind of planning, scheduling, implementing and evaluating decisions are required to be made at each level. Since the lowest level requires a great number of small-scope decisions, an effective manager insures that workers are trained and assigned responsibility accordingly. Otherwise TQM could not exist.

(3) *personnel management as the orderly way of fitting people into organization structures*

There is no better way of fitting managers and workers into shipyard manufacturing systems than molding them as generalists. Required expertise for TQM is primarily command of GT and statistical control. There is no fairer way of appraising personnel than by analytically determining their contributions to constant improvement, and for those at any supervisory position by how well they develop the people in their charge toward the same objectives. TQM focuses on people as well as on processes.

But a top manager who wishes to change the corporate culture must first fit other senior managers into the new organizational structure. They must be educated in what the new approach will entail and how it will impact on them. Then the top manager must interview each one in order to identify: (a) those who understand and who will cooperate, (b) those who do not understand who will probably cooperate after more education, and (c) those diehard traditionalists who, regardless of their understanding, are likely to be disruptive.

The latter group must be dealt with decisively. In the old corporate culture some of them may have been experts in their functional specialties and thoroughly loyal. Thus they deserve special consideration. Nonetheless they must be eased into early retirement or into other employment away from the manufacturing system. As a last resort, they will have to be discharged because the job security of everyone else is at stake. Thereafter the same process of education and screening should be repeated for all lower management tiers. Even a single traditionalist can cause TQM to be like a mirage, always appearing to be within reach, but in reality unattainable.

Since the movement toward product orientation started in U.S. shipyards twelve years ago, experiences are disclosing that reforming existing managers in public yards is far more difficult than in private yards. Until the chief of naval operations orders the modernizing of naval shipyard corporate cultures as a top priority military objective and orders specific implementation, the Naval Sea Systems Command and its shipyard commanders will be unable to overcome ei trenched traditionalism in the foreseeable future.

(4) *manager development to provide today for the needs of tomorrow*

Corporations' abilities to survive are absolutely deper dent upon how well they develop their managers. Top mar agers who are sincere in their intent to achieve TQM have t make some gut-wrenching decisions. The first requires eac of them to schedule their own replacement after a reasor able tenure, five or six years at most. Otherwise, the flow i the managerial pyramid degenerates. This is an area wher private institutions can learn from military experience. Fo example, since everyone cannot become the chief of nava operations, provision is made for systematic attrition.

Another heart breaker concerns loyal people who have through traditional functional expertise, become or are abou to become shop managers or design-section heads. The will have to be told that those positions must be transforme into different turfs of responsibility consistent with a PWBS and that the positions are critically needed for further devel oping generalists who command modern industrial disci plines, such as GT and statistical control. They would hav to conform or look for employment elsewhere.

TQM cannot exist where there is no provision for the se curity of good people who must be "plucked" in order t make room for the best managers. In a manner similar t what the Navy does, world-class shipbuilders employ sev ance pay, early retirement, and transfers to especially ed divisions, such as for exporting technology, and to a ated companies that have need for less dynamic management structures. The ultimate proof that TQM exist is a manufacturing system continuing to improve when th top manager departs. In other words, TQM does not exis unless it is an attribute of the system.

(5) *managerial accounting, that is, the use of analysis and information as the foundation of managerial decision making*

The terms *information age* and *knowledge worker* are now frequently used to characterize the modern manufacturing systems that developed from what IBM's Watson pioneered. Immediate knowledge about how manufacturing processes are performing confirm normalcy (knowing where you are), or detect trends away from normalcy (knowing where you're going). Both are required for management by target (getting to where you want to go). Evaluating knowledge is the only sound basis for making decisions in the remainder of the management cycle, that is, estimating, planning, scheduling, and implementing. TQM exists only when the analyses of information results in the constant updating of estimators and marketing people with a manufacturing system's new capability and availability.

(6) *marketing*

Work must exist. Otherwise information about how a manufacturing system performs would not be up to date

Shipyard managers have two practical marketing options: (a) exploiting knowledge of current customers in order to sell them products or services that are unrelated to the building, conversion and overhaul of ships (requires development of new manufacturing or service systems), or (b) exploiting the existing manufacturing system for customers in non-marine industries.

The latter option is essential for TQM because when ship work diminishes, non-marine construction can continue to generate knowledge about how the system performs. Knowledge is the sustenance that TQM has to have in order to remain alive. Government officials concerned with maintaining the shipyard mobilization base have yet to grasp the fact that construction and overhaul work of virtually any kind increases the capability of statistically-analyzed, rationalized work flows to better perform warship related work.

At least one U.S. shipyard has made extraordinary, pertinent contributions to the mobilization base. Recent non-marine construction includes power and toxic-waste incineration plants, bridges, and a floating jail. Such diversification should be acknowledged by the government for the purpose of motivating other shipyard managers who remain critically dependent on just defense spending.

The traditional manager's excuse that warship construction is different is not valid. Some work flows would be peculiar, but the overall approach to manufacturing remains unchanged. In world-class shipyards the real "muscles" are GT and statistical control applied for the procurement or fabrication of parts and fittings, and for assembly work. It does not matter if a fitting is a black box for a missile system in a warship or a pump for a chemical processing plant. Both are classified by problem category and statistically controlled.

(7) *finally, long-range planning*

With rare exception shipyard newspapers do not feature articles which describe anything about a manufacturing system per se. Borderline articles usually describe only accomplishments. In each yard there is need to publicize descriptions of the manufacturing system as it was, as it exists now and as what it is planned to be. A long-range plan for modern product orientation is necessary because the required change in corporate culture is a large undertaking that is full of pitfalls.

Long-range thinking must apply to markets, both for purchasing materials as well as for selling end products. Such planning is needed to guide extension of a yard's manufacturing system, first downstream in order to absorb customers' pertinent operations. Afterwards, extension upstream should be planned to incorporate needed in-house and subcontractor design capabilities and a select cadre of material suppliers.

Even a good plan for changing a corporate culture is insufficient if not scheduled and controlled just as if it was a plan for implementing an enormous construction effort with no less assignment of decentralized responsibility and authority. Anything else will not suffice because traditionalists will balk at having cross hairs put on their performances. Putting cross hairs on performances is what TQM is all about—that is, acquiring knowledge about the quality of supervision of everything, no matter how big or small, important or unimportant, upstream or downstream.

CONCLUSION

As much of the literature indicates, many are now just dabbling in TQM. Any honest approach requires a transformation in corporate culture that is generally being resisted, even by some top managers. Workers are likely to resist at first, but they will be the first to benefit from working smarter and will ultimately become a positive force. Nothing less than extraordinary leadership is required in order to bring them through the critical stages.

Signs that TQM is happening, of course, include decreasing costs, improved quality per in-house product, and greater worker and customer satisfaction. Another sign is a decreasing need for TQM staff specialists. In other words, TQM only exists when every worker routinely "uses his own mind and his own experience to improve his own job, the product, the process, and the quality." [1]

A more spectacular sign is industrial engineers complaining that they are being overwhelmed by worker demands for their services.

Endnotes/References

[1] Peter F. Drucker, *The Frontiers of Management*, (Truman Talley Books/E.P. Dutton, New York, 1986, ISBN 0-525-24463-8), p. 282.

[2] "...I had been laughed at in Japan when I talked about Japan's management embodying Japanese values. 'Don't you realize,' my Japanese friends asked, 'that we are simply adapting what IBM has done all along?'" Peter F. Drucker, Ibid., p. 284.

[3] The Regulations of the U.S. Navy.

[4] The need for a PWBS was first recommended by Engineering & Management Sciences Corporation in *A Study of Shipbuilding Cost Estimating Methodology*, 20 January 1969, for the U.S. Maritime Administration.

[5] Variation merging equations for predicting the accuracy of hull erection butts and seams are described in *Process Analysis Via Accuracy Control*, The National Shipbuilding Research Program, Revised August 1985.

[6] For evidence of inaccurate hull structure that impacts adversely on military readiness, see "Flexible Standards: An Essential Innovation in Shipyards," *Journal of Ship Production*, February 1991, pp. 1-11.

[7] The profound advice about statistical control is from The 1967 Report of Shipbuilding Developments (in English) by The Society of Naval Architects of Japan.

[8] Peter F. Drucker, Ibid., p. 27.

(5) Panel excerpt - last few sentences

I want to thank the members of the Defense Conversion Committee for allowing me to testify on the behalf of my company, Foundation Health Corporation and to talk to you about one of our government programs, the CHAMPUS Reform Initiative (CRI).

Foundation Health Corporation is a large Sacramento based health care maintenance organization covering over 800,000 lives in California. Our company specializes in managed health care. We had revenues in 1992 of $1.2 billion. We are one of the largest defense contracts in the country. We are DoD's prime contractor for the CHAMPUS Reform Initiative in California and Hawaii with a separate contract in New Orleans.

The CHAMPUS Reform Initiative is one of several programs being operated by the Department of Defense for the purpose of managing the health care delivery systems for military families. The goals of this initiative are to:

1. Contain health care costs;

2. Improve the quality of health care for the military beneficiaries;

3. Improve beneficiary access to health care; and

4. Optimize utilization of military hospitals and clinics.

Our programs have experienced extraordinary success in meeting these objectives. Studies conducted by independent organizations, including the Rand Corporation and BDO Seidman, have demonstrated cost savings approximating $75 million annually while achieving a 98 per cent beneficiary satisfaction rating.

The overwhelming success achieved by the CHAMPUS Reform Initiative program has been acknowledged by the senior management within the Department of Defense as well as the Congressional leadership.

Because of the popularity and success of this program, DoD is in the process of aggressively expanding its managed care initiatives throughout the country. The importance of this expansion to the Defense Conversion Commission is that it represents a significant shift from unmanaged indemnity health care coverage to intensely

managed, fully coordinated health care delivery. Philosophically, the Department of Defense has come to the realization that the only way to contain rapidly rising health care costs is to spend administrative dollars on the staffs and systems that manage and control those costs. This shift in spending patters means jobs. While much of the Defense industry is being negatively impacted by DoD cost cutting, the cuts that DoD hopes to realize in the health care arena positively impact the job outlook in that industry.

In California and Hawaii, Foundation Health and its subcontractors employ over 1,200 people in the management and administration of the CHAMPUS Reform Initiative. Many of these employees are former DoD or DoD contractor affiliated employees. Our program has already been expanded into New Orleans where an additional 200 people have been employed by Foundation and its subcontractors. We are currently bidding on a CHAMPUS Reform Initiative project in the states of Washington and Oregon, which will offer significant employment opportunities for the residents of those two states.

It has been our experience that former military and DoD contractor employees, even those without health care background, (i.e., contracting officers, personnel specialist, and information systems specialist) bring skills and basic experience which is either directly applicable to the work that we do or a solid basis for training.

The government currently has plans for expansion of managed care models in the Southeast, Northeast, the Tidewater area, the greater Washington, DC area and certain areas of Texas, including the Dallas-Fort Worth area.

Many of these areas will be impacted by base closures and defense cutbacks and these managed care initiatives will create an opportunity to shift from the displaced work force and these newly created jobs.

Russell Beliveau, Vice President, CRI Program Management

Mr. Russell Beliveau joined Foundation in 1988 as Vice President of Health Care Services of the Government Division. In this position, he established the provider network in California and Hawaii and developed the Utilization Management, Resource Sharing and Health Care Finder Programs for the CHAMPUS Reform Initiative (CRI). Mr. Beliveau is responsible for Military Treatment Facility relations and subcontractor oversight for the CRI program. Prior to joining Foundation Mr. Beliveau was the Deputy Associate Commissioner for Medicaid for the Department of Public Welfare in Boston, Massachusetts. In that position he was responsible for all operations, including claims processing, auditing, fiscal management, and utilization control. In addition to extensive health care experience, Mr. Beliveau has an MBA from Boston College with a concentration in Management Information Systems and he has 12 years experience in the MIS/data processing environment.

SACRAMENTO HEADQUARTERS. 3400 DATA DRIVE • RANCHO CORDOVA, CA 95670

Russell A. Beliveau

Professional Experience

Foundation Health Federal Services, Inc., Sacramento, CA
March 1988-Present

Vice President, Program Management, CHAMPUS Reform Initiative (7/89 - Present)

CRI is a five year, $3 billion at-risk contract with the Department of Defense. The program calls for the coordination and delivery of health care services, in a managed care environment, for the 900,000 CHAMPUS eligibles in the two-state region.

- Plans, coordinates and manages the activities of CHAMPUS Prime and all Subcontractors for the CHAMPUS Reform Initiative in California and Hawaii.

Vice President of Operations and Development (1/89 - 7/89)

- Assigned operational responsibility for Foundation Health Corporation non-California HMOs (Washington, Idaho, Oregon, New Mexico, and New Jersey). The primary goal was to sell each of these plans within a six month period ending 6/30/89. All Plans were successfully divested.

Vice President of MIS (9/88 - 1/89)

- Temporarily assigned to MIS to help manage and reduce a growing claims backlog, the impact of which could have cost Foundation Health Corporation the CRI contract.
- Developed and initiated an action plan sufficient to obtain CRI contract renewal from DoD.

Vice President of Health Care Services (3/88 - 9/88)

- Established Provider Network (10,000 providers) in California and Hawaii.
- Developed the Utilization Management, Resource Sharing and Health Care Finder programs necessary for the Department of Defense (DoD) to approve the CHAMPUS Reform Initiative (CRI) program start up.

Department of Public Welfare, Boston, MA
April 1985-March 1988

Deputy Associate Commissioner for Medicaid

- Managed the Medicaid operations, specifically, claims processing, auditing, utilization control and fiscal management.
- Responsible for:
  - $1.5 billion Medicaid budget.
  - Supervision of 400 health care professionals.
  - Health Care Coverage for 500,000 Medicaid recipients

Self-employed Data Processing Consultant
May 1982-April 1985

Consultant

The primary client was the Welfare Department, and the task was the management of the systems projects associated with Medicaid eligibility, claims processing and AFDC error rate reduction.

- Project Management.
- Systems Design.
- Systems Analysis.
- Policy Planning.

Honeywell Information Systems, Inc., Waltham, MA
June 1981-May 1983

Manager, Employee Information Systems

- Completed the implementation of the Employee Information System.
- Designed, developed, and implemented a Salary Planning system.
- Project Management.
- Budget Planning and Monitoring.
- Training and System Demonstration.
- Systems Design and Analysis.

Crosbro, Inc., Brockton, MA
June 1981-March 1980

Data Processing Consultant

- Marketed and installed DG hardware and custom software products for this Data General OEM.
- Proposal Development.
- Budget Preparation.
- Contract Negotiation.
- Systems Design.
- Project Management.

Division of Employment Security, Boston, MA
September 1975-March 1980

Project Manager

Began as an entry level computer programmer, and progressed to project manager on the Employer Tax and Experience Rating Projects.

- Project Planning and Management
- Systems Design and Implementation.
- User Training.

Education

Bridgewater State College
Bachelor of Arts, Psychology, 1974

Boston College
Masters of Business Administration
Management Information Systems, 1980

COVER SHEET FOR PROPOSALS TO THE NATIONAL SCIENCE FOUNDATION

FOR CONSIDERATION BY NSF ORGANIZATION UNIT (Indicate the most specific unit known, i.e. program, division, etc.)	PROGRAM ANNOUNCEMENT/SOLICITATION NO./CLOSING DATE

EMPLOYER IDENTIFICATION NUMBER (EIN) or TAXPAYER IDENTIFICATION NUMBER (TIN)	SHOW PREVIOUS AWARD NO. IF THIS IS: ☐ A RENEWAL or ☐ AN ACCOMPLISHMENT-BASED RENEWAL	IS THIS PROPOSAL BEING SUBMITTED TO ANOTHER FEDERAL AGENCY? YES____. NO____: IF YES, LIST ACRONYM(S)
77-0007067		

NAME OF ORGANIZATION TO WHICH AWARD SHOULD BE MADE:	INSTITUTION CODE (if known)
COMPUTER PROFESSIONALS FOR SOCIAL RESPONSIBILITY	

ADDRESS OF ORGANIZATION (INCLUDE ZIP CODE)
P.O. BOX 717, PALO ALTO, CA 94302

IS SUBMITTING ORGANIZATION: ☐ For-Profit Organization; ☐ Small Business; ☐ Minority Business; ☐ Woman-Owned Business

BRANCH/CAMPUS/OTHER COMPONENT (Where work is performed, if different)	INSTITUTIONAL CODE (if known)

TITLE OF PROPOSED PROJECT
WORKING GROUP ON TECHNOLOGY POLICY AND DEMOCRATIC VALUES

REQUESTED AMOUNT	PROPOSED DURATION (1-60 months)	REQUESTED STARTING DATE
$106,360	12 MONTHS	JAN 1, 1993

CHECK APPROPRIATE BOX(ES) IF THIS PROPOSAL INCLUDES ANY OF THE ITEMS LISTED BELOW:

- ☐ Vertebrate Animals
- ☐ Human Subjects
- ☐ Research Involving Genetically Engineered Organisms
- ☐ Historical Places
- ☐ National Environmental Policy Act
- ☐ Proprietary and Privileged Information
- ☐ International Cooperative Activity: _____ Country/Countries
- ☐ Facilitation Award for Handicapped
- ☐ Research Opportunity Award
- ☐ Disclosure of Lobbying Activities

PI/PD DEPARTMENT	PI/PD PHONE NUMBER/ELECTRONIC MAIL ADDRESS	PI/PD FAX NUMBER

NAMES (TYPED)	SOCIAL SECURITY NO.*	HIGHEST DEGREE & YEAR	SIGNATURE
PI/PD GARY CHAPMAN	553-88-8104	B.A., '79	Gary Chapman
Co-PI/PD PHILIP L. BEREANO	127-30-7042	J.D. 1965 M.R.P. 1971	Philip L Bereano
Co-PI/PD MICHAEL H. GOLDHABER	096-38-8800	Ph.D., 1968	Michael H. Goldhaber
Co-PI/PD			
Co-PI/PD			

By signing and submitting this proposal, the individual applicant or the authorized official of the applicant institution is providing the certifications regarding Federal debt status, debarment and suspension, drug-free workplace, and lobbying activities, as set forth in *Grants for Research and Education in Science and Engineering*, NSF 90-77 (8/90).

(If answering "yes" to either, please provide explanation.)	YES	NO
Is the organization delinquent on any Federal debt?		✓
Is the organization or its principals presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency?		✓

AUTHORIZED INSTITUTIONAL REPRESENTATIVE	SIGNATURE	DATE
NAME/TITLE (TYPED) GARY CHAPMAN PROGRAM DIRECTOR	Gary Chapman	8/15/92

TELEPHONE NUMBER	ELECTRONIC MAIL ADDRESS	FAX NUMBER
(617) 625-6985	CHAPMAN@LCS.MIT.EDU	(617) 666-4784

*Submission of social security numbers is voluntary and will not affect the organization's eligibility for an award. However, they are an integral part of the NSF information system and assist in processing the proposal. SSN solicited under NSF Act of 1950, as amended.

FUNDING PROPOSAL

To the National Science Foundation
Program on Ethics and Values Studies
Studies in Science, Technology & Society Program

From Computer Professionals for Social Responsibility

Contact: Gary Chapman
CPSR
18 Centre Street, #102
Cambridge, MA 02139
(617) ~~864-7329~~ 625-6985
chapman@lcs.mit.edu

August 15, 1992

Request for $106,360 for one year for a working group on technology policy and democratic values

Project title: Working Group on Technology Policy and Democratic Values

Summary: Computer Professionals for Social Responsibility, the nation's only public interest organization of high technology professionals, proposes to convene a national working group on Technology Policy and Democratic Values. This working group of twelve diverse scholars on democracy and technology will spend one year studying and discussing the intersection of democratic values and trends in Federal government technology policy. The group will meet twice, once near the beginning of the year and once near the end of the year. The first meeting will be held to identify major issues and discuss current trends, and the second meeting will develop the framework for a written report. Between these meetings the working group participants will discuss the salient controversies with each other and share written material. The conversation will be conducted via electronic mail, telephone, fax, and postal communication and will be coordinated by two co-principal investigators, an administrative director, and a part-time administrative assistant. The co-PIs will prepare a report after the second meeting and it will be reviewed by working group participants. The report will be printed in 10,000 copies and distributed nationally by CPSR to interested parties, government officials, corporate and academic leaders, citizen groups, professional and technical societies, and the press. The budget for this project is $106,360.

The co-principal investigators will be Professor Philip Bereano of the Department of Technical Communication at the University of Washington in Seattle, and Dr. Michael Goldhaber, director of the Center for Technology and Democracy in San Francisco. The administrative director will be Gary Chapman, former executive director of Computer Professionals for Social Responsibility and now coordinator of CPSR's 21st Century Project, a program on redirecting technology policy in the post-Cold War era.

Introduction

Technology Policy, Economic Competitiveness, and the End of the Cold War

The United States government is now at a historic juncture, one posed by the intersection of two recent phenomena: the end of the Cold War and the almost universal national alarm over the decline of America's technological leadership.

Since the end of World War II, government policy supporting scientific and technological investment has been dominated by principles of national security imposed by the Cold War. Since 1945 the United States federal government has built a powerful, interlocking set of cooperative institutions representing government, industry, and academia that has evolved into a scientific and technical establishment largely dedicated to supporting Cold War aims. This infrastructure of institutions and people has been led by elites from major universities, large corporations, and high government positions, with representatives frequently exchanging seats between these sectors. The evolution of this system has produced a body of rules and procedures governing how the United States pursues investments in science and technology. The system that this country has developed is the most powerful in the world, with an annual research and development (R&D) budget larger than the R&D budgets of all other industrialized countries' governments combined.

Nevertheless, there is now serious concern among nearly all American leaders that the U.S. is losing its technological preeminence. In 1985, the report of the President's Commission on Industrial Competitiveness stated flatly, "The United States has lost its world leadership role in manufacturing, and is in danger of losing it in technical innovation." The biggest challenge in science and technology has come from Japan and Germany, but other countries are also closing the gap. American students rank near the bottom in science and mathematics knowledge among age-related students from all industrialized countries. Japan and Germany have surpassed the United States in non-defense spending on research and development as a percentage of Gross Domestic Product. The United States has conceded the international market to other countries in commodities such as consumer electronics, steel, machine tools, cloth, and shipbuilding, and is losing ground in automobiles, aircraft, microcomputers, and telecommunications equipment.

Now that the Cold War is over, many government, academic, and industry leaders see an urgent need for transforming military-dominated government technology policy—in which the government has dedicated up to 70% of its R&D budget to military programs—to one that is focused on revitalizing the nation's civilian, high tech manufacturing base. With the death of the Warsaw Pact—the only military adversary capable of competing with the United States in weapons technology—there seems to be at hand an historic opportunity for releasing billions of dollars and tens of thousands of engineers and scientists dedicated to military projects to new programs that help the nation's economic performance. In fact, the phrase "economic competitiveness" has taken the lead in a race to establish a new rationale for continued government investment in science and technology. The White House Office of Science and Technology Policy, directed by the White House Science Adviser Dr. Allen Bromley, released a document in 1991 entitled "U.S. Technology Policy," which asserts quite clearly that "national economic competitiveness" is the guiding principle of the current administration's programs.

The Congress has also followed suit. Senator John Glenn (D-OH) has introduced legislation calling for an Advanced Civilian Technology Agency (ACTA). Senator Barbara Mikulski (D-MD) has offered legislation for a new national environmental technologies agency, and her legislative package includes a version of a proposal made by a blue-ribbon panel convened by the National Academy of Sciences. That proposal, from a panel chaired by former Secretary of Defense Harold Brown, suggests the development of and funding for a Civilian Technology Corporation, a government-funded venture capital "bank." Others, such as Harvard's Lewis Branscomb, have advocated increased funding for existing but underfunded programs such as the Advanced Technology Program at the National Institute of Standards and Technology. Senator Jeff Bingaman (D-NM), chairman of the Senate Armed Services' Subcommittee on Defense Technology, have pushed for an expanded civilian role for the Defense Advanced Research Project Agency (DARPA). Senator Bingaman introduced legislation in 1992 that would drop the word "defense" from the agency's name, returning it to its original designation. Bingaman has also been a key figure in the development of funding for so-called "critical technologies." His legislation led to the creation of the National Critical Technologies Panel, which advises the White House and the Congress on technologies the panel members believe deserve government support. The panel consists of six members from industry, six from government, and the White House Science Adviser.

The sea change in thinking about U.S. technology policy in the wake of the Cold War can be found in a tidal wave of reports and proposals for new directions and institutional reform. The Kennedy School of Government at Harvard University has produced a book on the subject, *Beyond Spinoff: Military and Commercial Technologies in a Changing World* (1992), the last section of which is called "Toward a New Technology Policy." The National Academy of Sciences has released a report, *The Government Role in Civilian Technology: Building a New Alliance* (1992), which calls for "A New Strategy to Facilitate Government Support of Technology." The Center for Strategic and International Studies in Washington, D.C., sponsored a study by Senator Bingaman, defense analyst Jacques Gansler, and CSIS Senior Fellow Robert Kupperman entitled *Integrating Commercial and Military Technologies for National Strength* (1992). The Carnegie Commission on Science, Technology and Government is preparing a long-awaited study on new directions for civilian technology investment, expected in the fall of 1992. In a recent book on economic conversion of the defense sector, *Dismantling the Cold War Economy*, authors Ann Markusen and Joel Yudken outline a new science and technology policy to address urgent national needs. Government support for technological investment has been endorsed by Governor Bill Clinton, the Democratic candidate for president, and he has based much of his platform on the work of Democratic advisers and academic leaders Lester Thurow, Dean of the Sloan School of Management at MIT, and Robert Reich, a political economist at Harvard. Reich's arguments for technology policy were featured in a recent, nationally-televised series on PBS called *Made in America.*

Perhaps most importantly, the National Science Board, the policy arm of the National Science Foundation, released a report of an expert panel studying industrial technological strength on August 12th. The report, entitled *The Competitive Strength of U.S. Industrial Science and Technology: Strategic Issues*, calls for greater government involvement in buttressing the nation's technological and industrial base. The panel's co-chairman, Dr. Roland W. Schmitt, president of Rensselaer Polytechnic Institute, stated in a press release accompanying the report, "Implementation of a national technology policy, establishing a rationale and guidelines for Federal action, should receive the highest priority." As *The New York Times* reported on August 13th, "While many experts have issued calls to action, this one is unusual for its breadth and authority."

The Need to Examine Technology Policy and Democratic Values

There have been periods when American policymakers have thought carefully about how to democratize the policymaking process for government-funded science and technology. In 1969 the National Academy of Sciences released a report which suggested that technological assessment "should provide channels through which citizens' groups, private associations, or surrogate representatives can make their views known. It is particularly important to couple improved assessment with improved methods of representing weak or poorly organized interest groups."

Despite this recommendation, however, very few institutional arrangements have developed for citizens or their representatives to participate in science and technology policymaking. This has been especially true in the past decade, as government investments in technology shifted toward military programs with attendant classification requirements, and as technology programs became tied more closely to highly specialized and performance-oriented capabilities, the assessment of which has required specific technical expertise.

When Federal technology policy was dominated by military priorities because of the Cold War, democratization of the policymaking process was inappropriate for a variety of reasons: the secrecy attached to military high tech programs; the need to tie technological investments to specific strategic goals, which would also remain secret in their details; and because of the unique relationship of private contractors to the Department of Defense. The people who devised much of the nation's defense-dominated technology policy of the past decade have typically had very high security clearances, close ties to the defense industry, and familiarity with the details of strategic doctrine, not to mention technical and engineering expertise.

But if the country's technology policy is headed in the direction of government support for civilian- or commercially-oriented technological investment, this would not only open up opportunities for democratic participation; it would seem to demand wide civic participation. Current trends in government policy for conversion of the defense technology base and new proposals for a civilian technology policy entail support from the public treasury for technologies, people, enterprises, communities, regions, and industrial sectors. The beneficiaries of such policy will enjoy not only financial support but competitive advantage and the prestige of government en-

dorsement. This issue of how these benefits are distributed, to whom, and for what purpose are at the very heart of democratic practice.

Current government proposals and the recommendations of the many studies on technology policy thus far have not adequately addressed the opportunities for expanding democratic participation in science and technology policymaking. They have tended to rely on models derived from the status quo, which have granted the primary policymaking role to experts, industrial leaders, government officials, and academics from elite institutions. The "blue-ribbon" panel tends to be the most favored device. Thus the Federal government's new National Critical Technologies Panel is composed of only thirteen experts selected from industry and government. The Civilian Technology Corporation recommended by the National Academy of Sciences panel would be run by a board of directors, the members of which would be nominated by the President and confirmed by the Senate. Advisory panels would be set up to represent industry, labor, and federal agencies. The Harvard group's book, *Beyond Spinoff*, asserts that "There should be a well-defined process for project selection involving business and technical experts from outside government." (The study team convened by the Carnegie Commission on Science, Technology, and Government is reportedly discussing new democratic institutions that could help shape technology policy, but its findings and recommendations have not yet been released.)

The majority of proposals for new directions in technology policy endorse what can be called a "top down" policymaking strategy, meaning that policy will be largely determined in Washington, and guided by input from selected experts from academia, industry, and perhaps labor. What this approach neglects, however, are potential opportunities for citizen participation through a variety of institutional frameworks, some already existent and some specifically developed in response to the new environment a reconstituted technology policy can produce.

There is a host of reasons for policymakers to pay attention to civic participation in the development of critical national policy: widespread disaffection with "inside the Beltway" politics; explosive alienation in the nation's inner cities; the urgent need for a revitalization of civic ethics; a clear necessity for improvement in linking education to national goals; and the requirement of a widely shared, consensual rationale for investments the nation needs to make in order to build a healthy and equitable economy. Without democratic consent and participation, any new technology

policy will be built on sand, especially given the hard choices that are a product of colossal public debt and chronic budget deficits. A stable democratic consensus will be required for reliable electoral support for expensive scientific and technological investments, and that can only be secured through meaningful public participation. As Dr. Bernardine Healey, the director of the National Institutes of Health, remarked during a recent panel discussion on technology policy at Harvard, "Any policy with a taint of elitism in today's political climate will be doomed to failure."

Questions to Be Addressed By the Working Group on Technology Policy and Democratic Values

For the purposes of the working group's discussion, there will be an assumption that democratic values should be represented in government technology policy. The group will discuss the proper *level* of democratic participation in technology policy-making. That is, the group's deliberation will be embedded in the context of contemporary American political culture, which aspires to ideals of democratic participation but which works with agencies of public and private administration. In other words, the proposed study group will not be working with a *tabula rasa* disconnected from contemporary debates, but neither will it need to be constrained by models derived from the status quo.

The next questions to be addressed are whether technology policy should be any *more* democratic than any other area of U.S. policy, and, if so, what the justification for this might be. There is a case to be made that government programs for investment in technologies that will become part of the national heritage should in fact be more democratic than other government programs, but this will be an issue to be discussed by the working group.

An immediate controversy for the group to take up will be the appropriate role of expertise in any publicly supported technology policy. This has been the subject of countless scholarly works and public disputes. It is a difficult question that may not have a definitive solution, but it will an unavoidable subject of discussion in the group's conversation.

It will be necessary for the working group to address whether there are "organizing principles" for technology policy that have a significant impact on the democratic character of the policy. For example, it has been argued that current technology

policy is largely "technology driven" as opposed to "needs driven," and there have been periodic calls for a more coherent rationale for the wide collection of government investment programs. The working group will address how such a rationale might be democratically derived, or, alternatively, how an expert-generated rationale can acquire democratic consensus.

Two of the most troublesome and controversial issues attached to government investment in science and technology are how to assess the benefit to the nation, and how to equitably distribute financial gains derived from public investment. The group should speculate on mechanisms for participatory technological assessment throughout the life of a publicly funded program. And there should be some focused discussion on proposals for equitable returns on investment to the taxpayer, in direct and tangible form or indirectly through judgments about the contribution to national wealth.

The working group will look at some representative proposals for a redirection of technology policy and discuss their democratic character, how they reflect or fail to reflect democratic values, and how their implementation might affect the democratic process in the United States in the future. The sample proposals will be chosen by the co-principal investigators in consultation with the working group participants. These will be reports, studies, books, or other material that represent different paths for future U.S. technology policy.

Finally, the working group will speculate on some possible alternatives to the samples considered, alternatives that could enhance democratic values and at the same time meet other goals of technology policy. The group might consider, for example, a high tech version of the Agricultural Extension Service with its associated land grant college system. Regional development centers might be discussed, and the group should undertake at least a brief survey of what is happening at the state level. The group might investigate how current "right to know" and "sunshine" legislation might evolve into enhanced means of access to public information about government investments. Models of civic participation in other domains of public life might be examined for their applicability to the development of technology policy. The task for this phase of the working group's deliberation will be to link institutions, perhaps innovative ones, with the optimal level of democratic participation the group proposes.

It should be stressed that the working group will not need to *advocate* any particular kind of technology policy as part of its work, or indeed any technology policy at all. The purpose of the working group will be to assess the democratic character of some leading proposals, and to speculate on innovative institutional structures that might help enhance democratic participation in the development of technology policy. The content of the policy does not need to be specified—and in fact shouldn't be if it is meant to be democratically derived—nor does there need to be an assumption that a democratic technology policy *should* be implemented if it can be described adequately. The focus of the working group will be on democratic values, not on the desirability of a U.S. technology policy. That debate is all around us as it is.

In summary, there are five major areas of deliberation that the working group will be asked to address: 1) the appropriate level of democratic participation in U.S. technology policy, and in particular the relationship of civic participation to the role of expertise; 2) the impact of "organizing principles" or rationales for government investment in technology upon democratic practice and whether these should be democratically derived or used as tools for generating consensus; 3) how the nation can democratically assess government technology investments, and how the benefits of these investments can be judged and equitably distributed; 4) the democratic character of representative proposals for new directions in technology policy; and, 5) innovations in institutions that might enhance democratic participation and democratic values in the development of future technology policy.

Other issues, related to and independent of those listed above, may be identified by the working group participants in the course of the project.

The Schedule of the Working Group's Task

The schedule for the working group will be straightforward and broken down into nine phases:

1. Collection and dissemination of background material.
2. The first national meeting of the group to identify the key issues for discussion.

3. Discussion of the group on the points identified at the first meeting, via electronic mail, telephone, fax, and postal communication.
4. The second meeting of the group to develop the framework of its report.
5. Writing of the report.
6. Review of the report by working group participants.
7. Editing of the report to incorporate participant comments.
8. Publication of the report.
9. National distribution of the report.

Each of these phases is described more fully below:

1. The co-principal investigators, in consultation with the working group participants, will collect a package of material reflecting the most salient controversies of the issue. This material will be copied for distribution to each participant and mailed as background material in preparation for the first meeting. The material will consist of copies of articles, books, studies, reports, and unpublished papers identified as providing a common background for further discussion. This will occur in month one and two of the twelve-month period.

2. The group will meet for the first time for two days, either on the East coast or the West coast (with the second meeting on the opposite coast). At this meeting there will be focused discussion on the points that the group identifies as being central to its purpose. The meeting will concentrate on how to structure the remainder of the discussion that will follow this initial meeting. The group will be facilitated by the co-PIs and logistical arrangements will be coordinated by the administrative director and a part-time assistant. The conversation at the meeting will be recorded in summary form, and copies of the summary will be distributed to the participants. This meeting should take place in the third month.

3. Each participant will be asked to reserve some time in his or her schedule for contributing to the ongoing discussion conducted via electronic mail, fax, telephone, or postal mail. Arrangements will be made to try and channel these communica-

tions through the administrative office in cooperation with the co-PIs, so that while discussion within a subgroup of participants will not be ruled out, as many contributions as possible will be distributed to the entire group. Ideally this will be accomplished through electronic mail distribution lists. For people without access to electronic mail, or those who decline to use e-mail, the administrative office will distribute copies of communications by fax or hardcopy using postal mail. Each month, the co-PIs will provide organized summaries of the discussion to date to the entire group in order to keep the discussion on track and focused and to prevent any sustained misinterpretations of commentary. This discussion will take place from the remainder of month three following the first meeting until the second meeting in the ninth month.

4. The second meeting of the group will take place in the ninth month of the project. At this meeting the group will attempt to develop the basic framework and the consensus points of its report. Ideally, a draft framework will already be developed prior to this meeting so that the discussion can focus on the most controversial issues. Once again, the meeting will be facilitated by the co-PIs, coordinated by the administrative staff, and summarized in a form that will be distributed to all participants.

5. The report will be written by the co-PIs. The report will attempt to reflect the discussion of the group as clearly and as eloquently as possible. A report of about fifty pages is envisioned. This will take about one month.

6. The draft report will be circulated to the participants for review. The participants will be asked to very quickly review the report for its accuracy in reflecting the group's deliberations. This review is not meant to open the door to more substantive discussion, although if there are major points of dissension these may have to be moderated, tabled, or merely acknowledged in the report. The deadline for turning around the report in the review process will be very tight in order to minimize lapses of memory; participant reviews should be done in two weeks from the time of receipt.

7. The report will be edited to reflect changes agreed upon by the participants. This should take no more than three weeks.

8. At the same time the report is being written, the administrative staff will prepare a desktop-published format for the report, and make plans for its distribution. When the final copy is available, it will be loaded into the computer format and sent to a printer. Ten thousand copies of the report will be printed in the eleventh month of the project.

9. The published report will then be distributed free to about 3,000 people: to government officials; representatives of public interest, citizen, technical, professional, and policy-oriented organizations; academics; corporate leaders; and the press. These names will come from a database already under development by Computer Professionals for Social Responsibility. A press release will also be issued to announce the results of the group's deliberations and the availability of the report. The remaining 7,000 copies of the report will be made available for interested citizens at nominal cost through the national office of Computer Professionals for Social Responsibility.

Personnel

Co-Principal Investigators *(curricula vitae attached)*

Professor Philip Bereano is professor of technology and public policy in the Department of Technical Communication at the University of Washington in Seattle. He is the author of the book Technology as a Social and Political Phenomenon. He is a fellow of the American Association for the Advancement of Science, a member of the Board of Directors of the Council for Responsible Genetics and the national advisory board of The 21st Century Project of Computer Professionals for Social Responsibility.

Dr. Michael Goldhaber is director of the Center for Technology and Democracy in San Francisco, editor and publisher of the newsletter Post-Industrial Issues, and author of the book Reinventing Technology: Policies for Democratic Values. He received his Ph.D. in physics from Stanford University.

Administrative Director

Logistical coordination of the Working Group on Technology Policy and Democratic Values will be supervised by Gary Chapman, former executive director of Computer

Professionals for Social Responsibility (1985-1991), now coordinator of The 21st Century Project and director of CPSR's Cambridge, Massachusetts, office. Chapman is the co-editor of the award-winning book *Computers in Battle: Will They Work?* (with David Bellin). He was the founding editor of *The Journal of Computing and Society*. He is the president of the board of directors of ACCESS, a Washington, D.C., based information service on issues in international security. He has served as an adviser to the National Science Foundation, the Office of Technology Assessment, Student Pugwash, and the National Center for Research on Computing and Values. His work on The 21st Century Project is funded by a grant from the Rockefeller Foundation.

Administrative Support

The attached budget calls for a part-time administrative assistant to help coordinate the project and provide clerical support. This person will not be hired until funds are available. This position could be filled by a student interested in the issues addressed by the working group. There are many students at Harvard and MIT interested in such employment and for a group like CPSR.

Working Group Participants

The following people have all been contacted about participating in the proposed Working Group on Technology Policy and Democratic Values, and each has expressed an interest in participating. However, no commitment has been made to any individual about actual participation; each of the individuals named below has been informed that the actual composition of the working group will be determined after funding is secured and the project's schedule is finalized. In particular, it will be important to recontact each individual after funding is available to find out whether his or her participation is still feasible. The list of people presented below, however, should give proposal reviewers an indication of the importance of the working group's purpose given the stature of the people who have provisionally agreed to participate.

Benjamin Barber is Walt Whitman Professor of Political Science at Rutgers University. He is Director of the Walt Whitman Center for the Culture and Politics of Democracy. Dr. Barber is the author of several books, including *Strong Democracy* (1984), *The Conquest of Politics* (1989), *The Artist and Political Vision* (1982), and

others, including a novel. With Patrick Watson, he wrote the prize-winning CBC/PBS ten-part television series *The Struggle for Democracy*, published as a book by Little Brown. He is the former editor (1973-1983) of the journal *Political Theory*. His popular articles appear in many publications, including *The Atlantic*, *The New York Times*, *The Nation*, *The New York Review of Books*, and *The New Republic*. He was educated at the London School of Economics and has a Ph.D. in government from Harvard University.

Harvey Brooks is Benjamin Pierce Professor of Technology and Public Policy, *emeritus*, at the John F. Kennedy School of Government at Harvard University. He is also Gordon McKay Professor of Applied Physics, *emeritus*, at Harvard University and former Dean of the School of Applied Sciences at Harvard. From 1968 to 1972 he was chairman of Harvard's University-wide faculty committee for the Program on Technology and Society. Currently he is a member of several task forces of the Carnegie Commission on Science, Technology and Government, and he co-chairs the Committee on Technology Policy Options in a Global Economy of the National Academy of Engineering. He was a member of the Harvard Dual Use Project at the Kennedy School, which produced the recent book *Beyond Spinoff: Military and Commercial Technologies in a Changing World* (1992). He currently chairs the Kennedy School's advisory committee for the Sidney Harman Program on Technology, Public Policy, and Human Development. Dr. Brooks received his A.B. in mathematics from Yale University, and his Ph.D. in physics from Harvard University in 1940. He is also the recipient of six honorary degrees.

Susan E. Cozzens is Associate Professor and Director of Graduate Studies in the Department of Science and Technology Studies at Rensselaer Polytechnic Institute in Troy, New York. She is the editor of the journal *Science, Technology, & Human Values*. She is the founder and current chair of the Section on Science, Knowledge, and Technology of the American Sociological Association. From 1981 to 1986, Dr. Cozzens was a policy analyst in the Division of Policy Research and Analysis at the National Science Foundation. She has edited or co-edited three books, including *Invisible Connections: Instruments, Institutions and Policy* (1992, with Robert F. Bud); *The Research System in Transition* (1990, with Peter Healey, et. al.); and *Theories of Science in Society* (1990, with Thomas F. Gieryn). She is the author of the book *Social Control and Multiple Discovery in Science* (1989). Dr. Cozzens received her Ph.D. in sociology in 1985 from Columbia University.

Barbara Ehrenreich is an author and social commentator who lectures and writes popular books and articles. She is the author or co-author of eight books, including *Fear of Falling: The Inner Life of the Middle Class* (1989); *The Mean Season: The Attack on the Welfare State* (1987, with Fred Block, et. al.); *Re-Making Love: The Feminization of Sex* (1986, with Elizabeth Hess, et. al.); *The Hearts of Men: American Dreams and the Flight from Commitment* (1983); and others, including her best-selling collection of essays, *The Worst Years of Our Lives: An Outsider's View of the Eighties* (1990). Dr. Ehrenreich is the recipient of many awards and fellowships, including an honorary doctorate from Reed College (1987); a National Magazine Award for Excellence in Reporting (1980, shared); the Ford Foundation Award for Humanistic Perspectives on Contemporary Society (1981); and a Guggenheim Fellowship (1987). In 1989 she was nominated for the National Book Critics Circle Award for the book *Fear of Falling*. Dr. Ehrenreich is a guest commentator on the PBS television show "Listening to America," hosted by Bill Moyers, and she is an occasional commentator on National Public Radio. Her articles have appeared in numerous publications including *The New York Times, The New Republic, Mother Jones, Ms., Esquire, The Nation* and many others. Dr. Ehrenreich received her Ph.D. in biology from Rockefeller University in 1968.

Kenneth Flamm is a Senior Fellow in the Foreign Policy Studies Program at the Brookings Institution in Washington, D.C., where he specializes in the study of technology policy and the American economy. He is the author of the books *In The Global Factory* (1985, written with Joseph Grunwald); *Targeting the Computer: Government Support and International Competition* (1987); and *Creating the Computer* (1988). He contributed to *Changing the Rules* (1989), a conference volume which examined the impacts of technological change, internationalization, and deregulation on the structure of the computer and communications industries. Dr. Flamm is currently completing a study of the origins and economic consequences of U.S.-Japanese competition in semiconductors, and preparing a monograph comparing the diffusion and use of industrial automation in manufacturing in the Unites States and Japan. His service includes work as an advisor to the Director General of Income Policy in the Mexican Ministry of Finance and as a consultant to the Organization for Economic Cooperation and Development, the World Bank, the National Academy of Sciences, the Latin American Economic System, the U.S. Department of Justice, the U.S. Agency for International Development, and the U.S. Congressional Office of Technology Assessment. He has also served on expert advisory panels of the National Science Foundation, the National Research Council,

and the Office of Technology Assessment. Most recently, he was a member of the National Academy of Sciences panel that produced the 1992 report, *The Government Role in Civilian Technology: Building a New Alliance.* Dr. Flamm received an A.B. (honors) in economics from Stanford University, and a Ph.D. in economics from MIT.

Carol Gould is Professor of Philosophy and head of the Department of Humanities at Stevens Institute of Technology in New Jersey. She has also taught at the New School for Social Research, the University of Pittsburgh, Swarthmore College, and the City University of New York. She is the author of two books, *Rethinking Democracy: Freedom and Social Cooperation in Politics, Economy, and Society* (1988); and *Marx's Social Ontology: Individuality and Community in Marx's Theory of Social Reality* (1978). She edited *The Information Web: Ethical and Social Implications of Computer Networking* (1989), and *Beyond Domination: New Perspectives on Women and Philosophy* (1984). Dr. Gould is the recipient of several research grants, including a National Science Foundation EVS grant which convened a national meeting on "Ethical and Social Implications of Computer Networking in Science and Government" in 1986. She is currently working with a National Endowment for the Humanities Summer Stipend for a project entitled "Hard Questions in Democratic Theory." Dr. Gould received her Ph.D. in philosophy from Yale University in 1971.

David Guston will receive his Ph.D. in the Program in Science, Technology and Society at the Massachusetts Institute of Technology in 1992. His fields of expertise are government science and technology policy and American politics. His dissertation is entitled *The "Social Contract" for Science: Changes in the Congressional Governance of Biomedical Science in the 1980s.* He has worked as a research assistant at the National Academy of Sciences, for the Committee on Science, Engineering, and Public Policy (1990-1992), and as an intern at the Congressional Office of Technology Assessment (1987). Mr. Guston is the author or co-author of several published articles, including the chapter "Government-Science Relations" in *The Handbook of Science, Technology, and Society* (forthcoming, edited by S. Janasoff, et. al.); and "The Essential Tension in Science and Democracy," in the journal *Social Epistemology* (forthcoming). Mr. Guston received his A.B. at Yale University with a special divisional major in Technology and Society, graduating *cum laude* in 1987.

Susan G. Hadden is Professor in the Lyndon Baines Johnson School of Public Affairs at the University of Texas at Austin. She specializes in the study of the intersection between technology and public participation. She is the author of two books on the use of technical information to reduce public risk, *Read The Label: Providing Information to Reduce Risk* (1986), and *A Citizen's Right to Know: Risk Communication and Public Policy* (1989). She has published more than fifty articles on telecommunications, citizen participation, risk communication, and policies intended to reduce risks to human health or the environment. She has worked with a wide range of citizen and industry groups to develop programs for access to information about chemicals. She is now working on a major project concerning public policy for public resources, including telecommunications infrastructure, information access issues, education, and the environment. As part of this project, she is conducting a demonstration of the ways in which broadband interactive services in poor minority neighborhoods can empower residents as well as improve service delivery and reduce isolation. Dr. Hadden received her B.A. in general studies from Radcliffe College, and M.A. and Ph.D. degrees in political science from the University of Chicago.

Richard E. Sclove is executive director of the Loka Institute, an association of activists and scholars concerned with the democratic ramifications of science, technology, and architecture. He is also a Fellow at the Institute for Advanced Studies in the Humanities at the University of Massachusetts at Amherst. In 1991-1992 he was a visiting assistant professor in the Department of Science and Technology Studies at Rensselaer Polytechnic Institute. He has also taught at Clark University. He is the author of the book *Technology and Freedom: Toward a Democratic Politics of Technology, Architecture, and Design*, to be published by the University of Chicago Press. He has contributed the chapter "Democratic Theory and Technological Design" in the forthcoming book edited by Langdon Winner, *Democracy in a Technological Society*. He has also published articles on national security issues, the monitoring of nuclear waste, and energy policy. Dr. Sclove received a B.A. in environmental studies from Hampshire College, an M.S. in nuclear engineering from MIT, and a Ph.D. in political science from MIT in 1986. Dr. Sclove is a member of the national advisory board of The 21st Century Project, a program of Computer Professionals for Social Responsibility.

Langdon Winner is Professor of Political Science in the Department of Science and Technology Studies at Rensselaer Polytechnic Institute. He specializes in social and

political issues generated by modern technological change. He is the author of the books *Autonomous Technology: Technics-Out-of-Control as a Theme in Political Thought* (1977); *The Whale and the Reactor: A Search for Limits in an Age of High Technology* (1986); and *Political Artifacts: Design and the Quality of Public Life* (forthcoming). He is also editor of the books *Democracy in a Technological Society* (forthcoming); and *Technology and Human Experience* (forthcoming). He has contributed many articles to a variety of publications, and writes regular columns on technology and society for *Technology Review* magazine and for *IEEE Spectrum* magazine. Dr. Winner is the recipient of a number of grants supporting his research, including a Sustained Development Award from the EVS Program of the National Science Foundation, from 1981-1985, and another NSF Fellowship in 1992-1993. He is past president of the Society for Philosophy and Technology. He has taught at MIT, the University of California at Santa Cruz, and the University of Leiden in the Netherlands. In 1992 he has been a visiting research scholar at the Center for Technology and Culture in Oslo, Norway. Dr. Winner received his B.A., M.A., and Ph.D. in political science from the University of California at Berkeley. He is also a member of the national advisory board of The 21st Century Project.

Terry Winograd is Professor of Computer Science at Stanford University and one of the pioneers of modern computer science. He also has appointments at Stanford in the Department of Linguistics and in the Program in Values, Technology, Science, and Society. Dr. Winograd's research on natural language understanding by computers is often cited as a major milestone in artificial intelligence. It was the basis for his book *Understanding Natural Language* (1972), and his textbook *Language as a Cognitive Process* (1983) as well as numerous articles in both scholarly journals and popular magazines. His most recent book, co-authored with Fernando Flores, takes a critical look at work in artificial intelligence and presents an alternative theory of language and thought which suggests new directions for the design of intelligent human/computer systems. The book, entitled *Understanding Computers and Cognition: A New Foundation for Design* (1987), was named as the best information science book of 1987 by the American Society for Information Science. He recently co-edited a book with Paul Adler entitled *Usability: Turning Technologies into Tools* (1992). Dr. Winograd has developed several new courses at Stanford, including one on Computers, Ethics and Social Responsibility, and a series on the Design of Human-Computer Interaction (sponsored by the National Science Foundation). He directs a project at Stanford called the Project on People, Computers and Design. During the 1992-93 academic year he is on leave, working with Interval Research in Palo

Alto. Winograd was the keynote speaker for the 1988 Conference on Office Information Systems, the 1990 Conference on Computer-Human Interaction (CHI'90), and the first National Conference on Computing and Values (1991). He is on the editorial boards of a number of journals, Including *AI Expert, AI & Society, Journal of Computing and Society, Human-computer Interaction*, and *Computer-Supported Cooperative Work*. Winograd is a board member and consultant to Action Technologies, a developer of workgroup productivity software. He was a founding member of Computer Professionals for Social Responsibility. He has been on the national board since the organization was founded, and served as national President from 1987-1990. He is also a member of the national advisory board of CPSR's 21st Century Project.

Sponsoring Organization

Computer Professionals for Social Responsibility (CPSR) is a ten-year old alliance of people in the computing field concerned about the social impact of information technologies. It is the only public interest organization of high tech professionals in the nation. Its national membership of about 2,100 computer professionals is organized into chapters in over twenty cities. CPSR has three national programs: the Computing and Civil Liberties Project, which addresses public policy issues such as privacy, freedom of expression in electronic communication, public access to computerized information, encryption, and computerized voting; The 21st Century Project, a national campaign to redirect Federal science and technology policy in response to the end of the Cold War; and the Workplace Project, which promotes the responsible and equitable use of computers in the workplace. CPSR has three offices, in Washington, D.C.; Cambridge, Massachusetts; and Palo Alto, California. It is also affiliated with similar organizations in seven countries. CPSR sponsors major conferences such as the first Conference on Computers, Freedom and Privacy; the Participatory Design Conference, which will be held at MIT in November, 1992; a conference entitled Directions and Implications of Advanced Computing, held in Berkeley, California in 1992; and the organization's own annual meetings. CPSR chapters also participate in the development of state and national policies, recently on the privacy implications of Caller Number Identification systems. CPSR publishes an organizational newsletter that is mailed to all members and which covers the organization's work and major issues of computers and society.

The results of the Working Group on Technology Policy and Democratic Values will be distributed throughout the membership of Computer Professionals for Social Responsibility, as well as through the memberships of cooperating organizations such as the Campaign for Responsible Technology, the Center for Economic Conversion, the Association for Computing Machinery, Student Pugwash, IEEE, and others. It is important, for the purpose of evaluating this proposal, to note that the working group's report will be widely distributed among citizens concerned about technology policy and democracy.

Financial Responsibility

Overall financial responsibility for the project will rest with the Board of Directors of Computer Professionals for Social Responsibility, the president of which is Dr. Eric Roberts, associate professor of computer science at Stanford University. Accounting for the project will be managed by CPSR's accounting firm and support personnel in the national office of CPSR in Palo Alto.

Tax Status

Computer Professionals for Social Responsibility is considered an educational organization, a 501(c)3, by the Internal Revenue Service. This status was made permanent in 1987.

Budget

A line-item budget is attached.

Budget for CPSR's Working Group on Technology Policy and Democratic Values

Co-principal investigators[1]	Two investigators at $15,000 each	$ 30,000
Working group participant honoraria	12 at $1,000 each	$ 12,000
Two national meetings		
Travel for 15 people	Average of $450 per person, twice each	$ 13,500
Accommodations for 12 people	12 people for four nights each at $125 night	6,000
Food provided for 12 meals for 17 people	$10 per meal per person	2,040
Logistical expenses for meetings	$1,500 per meeting	$ 3,000
Support and distribution expenses		
Editorial services[2]		$ 3,500
Desktop publishing and graphic design of report		3,000
CPSR overhead [3]		9,600
Part-time administrative assistant		5,520
Photocopying expenses		500
Telecommunications expenses [4]		4,200
Operational postage and mailing of 3,000 reports		5,000
Printing of 10,000 reports		$ 8,500
	Total:	**$106,360**

Notes

1. Investigators' compensation includes FTE payment for three month's work, distributed over twelve months; self-employment tax; and 20% overhead compensation for workspace, the use of computer and communication equipment, and miscellaneous expenses.
2. Editorial services includes copy-editing of report and assistance in the preparation of summaries of the two national meetings.
3. CPSR overhead includes accounting, overhead expenses for administrative supervision, compensation of administrator for time allocated, and expenses incurred for required financial reporting to the National Science Foundation.
4. Telecommunications expenses include telephone, fax, and electronic mail.

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Education

Masters of Regional Planning (Cornell, 1971)
J. D. (honors), (Columbia Law School, 1965)
B. Chem. Engr. (Cornell, 1962)

University Experience

- Professor, 1988, University of Washington, Department of Technical Communication; Adjunct Professor, Women Studies, American Ethnic Studies
- Associate Professor, University of Washington, 1975-1988
- Assistant Professor, Cornell University, 1970-1975
- Engineering and public policy; technology assessment; curriculum development; technological change and social values (particular reference to communication technologies, biotechnologies, AIDS, and household technologies)

Professional Honors

- Fellow, American Association for the Advancement of Science "for contributions to understanding the role of science and technology in society."
- Fulbright Award to support sabbatic at Urban Institute, University of Paris and the Engineering Research Institute, University of Nantes, Fall 1989.

Selected Publications

Technology as a Social and Political Phenomenon, (Wiley, 1976)

"Government Policies," invited entry for *Encyclopedia of Robotics* (Wiley, 1988)

"An Assessment of State Subsidies for 'High-Tech': The Community Perspective," in *Impact Assessment Today* (ed. Becker & Porter, Utrecht, The Netherlands, 1986)

"Institutional Biosafety Committees and the Inadequacies of Risk Regulation," *Science, Technology and Human Values*, Fall 1984

"Household Technology and the Social Construction of Housework," (with Bose and Malloy), *Technology and Culture*, Jan. 1984

"Developing Technology Assessment Methodology: Some Insights and Experiences" (with Lee), *Technological Forecasting and Social Change*, 1981

co-author, *Communications for a Mobile Society: An Assessment of New Technology*, (eds. Bowers, Lee, Hershey), Sage Pub. Inc., 1978

"Is There a Contradiction Between the Practice of Technology Assessment and Democratic Decision-Making?," *International Journal of Bioethics*, 1992 (forthcoming).

Selected Professional Activities

Symposia organizer/presenter, AAAS Annual meetings, 1991, 1989, 1987, 1985, 1982, 1978, 1976, 1975, 1972, 1971

U.S. House of Representatives, Judiciary Committee, Subcommittee on Civil and Constitutional Rights, invited testimony, March 1989, on civil liberties implications of DNA-based identification systems

State of Washington, Nuclear Waste Advisory Council (1986-88)

Member of the Bar, New York State

City of Seattle, Citizen Cable Communication Advisory Board (1982-85)

Member, International Association for Impact Assessment, 1981-present

Member, Council for Responsible Genetics, Board of Directors, 1983- present

Member, Biotechnology Working Group (national coalition of environmental, church, labor, family farm and public interest organizations), 1988-present

Analyst/consultant on AIDS and public policy for ACLU, ACT-UP, AIDSWATCH, 1988-present

Consultant for City of Seattle, King County, Washington State Humanities Commission, U.S. Dept. of Energy (appropriate technology program 1979-81),

Office of Technology Assessment, National Science Foundation, Washington State Superintendent of Public Instruction and numerous school districts, and universities (Tufts, Stanford, Cornell, RPI, Portland State, University of Paris, Hebrew University, Seattle University).

Selected Research Projects

National Science Foundation, ECSEL (consortium of engineering schools to improve curriculum), work on integrating social and economic factors into engineering design, 1990-present

Ford Foundation, curriculum grant to Dept. of American Ethnic Studies, development of course on "Gender, Ethnicity and Technology," 1990- present

Rockefeller Foundation, "The 21st Century Project," Computer Professionals for Social Responsibility, on science, technology, ethics, and industrial structure, 1991-present

U.S. Office of Technology Assessment, Federal Information Policy, 1987- 88

NSF, SCOPI (Scientists and Citizens Organized on Public Issues) Executive Board, 1980 to 1984 facilitator, psych/soc panel, "A Community Conference--AIDS: Who's at Risk?," November 5, 1983, Seattle Center "High Technology Developments in Washington State A Community Perspective," Summer 1984, (also sponsored by Wm. O. Douglas Institute and WashPIRG)

NSF, Institute for Environmental Studies, University of North Carolina, values and biotechnology applications, Fall 1987-1989

"High Technology Developments in Washington State: A Community Perspective," Summer 1984, sponsored by Wm. O. Douglas Institute, SCOPI, and WashPIRG

NSF, technology assessments of electronic message transfer, mobile telephone, video telephone, 1974-81

Ford Foundation, decentralized electricity generation, 1978-81

Nuclear Regulatory Commission, impact assessment of Trojan Nuclear Plant, 1976-77.

Selected Lectures, Talks

Radio and TV (Cable, National Public Radio, CNN, Voice of America, KUOW, KVI, KXA, KING, KPLU, KIRO, CJAZ, KOMO, KCTS, KSTW)

Professional groups (Puget Sound Association for Computers in Education, Washington State Library Association, University Unitarian Church, Washington State Sociological Association, Washington State School Business Officials)

National Audubon Society

AFSCME Union Locals 2083 and 2083C

Consumer Federation of Malaysia

Cornell University Class of '61 25th Reunion

Campus departments and organizations community groups (ACLU, Democratic Party, AAUW, On the Boards Theatre, League of Women Voters).

Rnd w/ add; (2

September 24, 1992

Statement to Defense Conversion Commission,

Department of Defense

Ellen Robinson, Mechanical Engineer

My name is Ellen Robinson. I recently worked as a Senior Design Engineer for a large defense contractor in the design of packaging for accelerometers used in inertial guidance systems for Ballistic Missiles. I worked both as a full time employee and, later, as a part time consultant until February of this year, when I was laid off in one of several continuing efforts of the company to down size its workforce as defense dollars disappeared.

Working as an employee in a military funded project under a defense contractor has given me a greater understanding of the defense industry, government's responsibility in a changing world and the need for defense conversion for our economic survival. Through my employment in the defense industry, I have made several observations. First, there is a tremendous amount of technical expertise and money directed into military projects in both academia and industry, which has greatly shaped and directed our industrial development as a nation. Additionally, these resources have been used to develop, design and produce products that meet stringent military performance specifications. The primary goal of these products are driven more by their performance requirements than by cost and standardization. Many times, the products are low volume, custom parts that require exotic materials, components, processing, fabrication and testing procedures. As a result, these products are expensive and do not necessarily have a

counterpart in the commercial market.

In the defense industry, companies dependent on military funds are very sensitive to the rise and fall of the defense budget and less adept at developing and marketing products for the civilian commercial arena. Since the doubling of the military budget in the 80's, more companies have become increasingly entrenched in these military funded industries.

The emphasis on defense development has led to our military superiority on weapon systems and avionics throughout the world (with the American Public as the customer of these products, paid for by their tax dollars). However, this defense escalation has been developed at a cost. Resources and talents that could have been applied to strengthen and develop civilian commercial markets and infrastructure technologies ~~(transportation, bridges, etc.)~~ were diverted into defense products. Our present industrial base , still shaped largely by this military presence, does not reflect our post Cold War economic needs for developing and marketing civilian commercial products at home and abroad. We, the American Public, need to reinvest in our economic future through the use of tax dollars to develop our civilian economy.

Defense conversion funds, services and policies can greatly accelerate the transition to a commercial economy. Groups from around the country working on conversion activities in their regions have developed excellent programs and platforms to change their military based economy around. Some highlights from these endeavors which I find particularly beneficial from my experience and perspective are listed below. Funding and resources channelled into such activities could help guarantee good return on economic investment for our future.

- Matching funds for the creation and implementation of State Diversification Plans, such as in Washington

State, to assist military dependent communities, businesses and workers to build long term economic strength through diversification.

Another is
- Consortiums of utility, industry, labor and environmental organizations established to promote new technologies compatible with local industries. Consortiums have initiated industries that develop regional commercial technological expertise while creating local infrastructure enhancement and job development. Examples of these consortiums include Calstart in Los Angeles, Ca. and Maglev, Inc. in Pittsburgh, Pa.
- Panel Recommendations from New York's Defense Spending and Impact Report from the Governor's Defense Advisory Panel including Research and Development funding and tax credits for commercial markets, the creation of an Industrial Modernization Block Grant Program and Defense Diversification Programs to help companies target and move into commercial markets.

As a closing remark, I would like to re-emphasize that the federal government has been responsible for the dominant military presence in our industrial base through its extensive funding of highly specialized defense products. However, our present industrial prowess does not reflect the needs of a post Cold War economy, which is primarily concerned with competitive development, production and marketing of commercial goods worldwide. As military dollars become scarce, defense dependent companies and communities will ~~need to~~ make the transition

from military to civilian products for their economic survival. Since the federal government has been instrumental in directing technology up to the present through the use of tax dollars for military programs, it will be necessary for the federal government to, also, be involved as these same industries and communities initiate into the commercial sector. Innovative conversion activities nationwide give us a hopeful glimpse into our country's future development.

September 22, 1992

Department of Defense
Defense Conversion Commission
1825 K Street N.W. Suite 310
Washington D.C. 20006
FAX 202 653 1665

I am a retired business executive who was in charge of a wholesale house which engaged in business in three western states. I have been through a number of economic changes since 1931 and, as a business woman and humanitarian, I was interested in the economic effects.

Seattle Women Act for Peace (SWAP), a branch of National Women Strike for Peace (WSP) had its beginning in 1961. Atmospheric nuclear testing was our first concern and subsequently we became involved in related issues. The diverse backgrounds of our membership enhanced our awareness of social and economic issues. A variety of publications such as The Center for Economic Conversion, The Defense Monitor, The Union of Concerned Scientists etc. serve as our information source. At this point, we look at the future of the next generation with great apprehension. We feel that dramatic changes need to take place. History offers many solutions for dealing constructively with current social and economic needs. Planning and working together with labor, management, large corporations and small businesses, local and federal governments is a necessary condition to implement appropriate changes.

Anci Koppel
Co-Ordinator
Seattle Women Act for Peace/WSP
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SEAT - WOMEN ACT FOR PEACE WOMEN STRIKE FOR PEA

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by Anci Koppel

In 1961, when atmospheric nuclear testing occurred frequently and military scientists disagreed with those in the private sector over the effects on human health from the fall-out, a group of young women in Washington D.C., mostly mothers, decided to call for a one-day strike. Thus was born Women Strike for Peace (WSP), to protest atmospheric tests which were resulting in damage to children's bones and teeth. This first demonstration led WSP to the Committee for Nuclear Information in St. Louis, Missouri, headed by Barry Commoner who subsequently initiated a research project at the dental school of Washington University in St. Louis. Baby teeth were sent to the laboratory and analyzed, the results confirmed our worst fears: the fall-out from atmospheric nuclear testing was indeed entering our children's systems via the consumption of milk.

This was part of a long and hard struggle which WSP and other organizations staged. In the summer of 1963, President John F. Kennedy advanced an agreement to end atmospheric testing of nuclear bombs. The agreement was signed by the Soviet Union and Great Britain. At about this time U.N. Secretary General U. Thant said "The continuing work of Women Strike for Peace on behalf of human survival and human welfare has been a source of

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inspiration to me in my own efforts to achieve world peace."

WSP and SWAP turn for advice and resources to the following: Regarding health -- Physicians for Social Responsibility; regarding civil rights -- American Civil Liberties Union; regarding peace economy and conversion -- The center for Economic Conversion; regarding defense issues -- The Defense Monitor and The Union of Concerned Scientists. And lastly, we rely heavily on the research of our legislative office in D.C. with regard to legislation and how to influence its course.

We have learned that past experience, thought not always applicable, can prove helpful in solving today's problems. And we have substantial past experience. Some of our activists were teenagers or young adults during the depression of the 30's. We experienced what the Public Works Administration (PWA) and the Work Project Administration (WPA) were able to achieve. They not only provided jobs quickly, but the work lifted peoples' self-esteem and gave them hope for permanent jobs in the future. Under some programs there were opportunities for the enhancement of artistic talents in writing, music, art and theater. Many well-known artists were launched through these programs.

It is time now to apply lessons learned during the depression about job creation.

At the end of 1978, William Winpisinger, then president of the International Machinists and Aerospace Union traveled to the Scandinavian countries to study plant closing, relocation, and conversion. He was accompanied by Lloyd McBride, President of

the Steel Workers Union, and Douglas Fraser, President of United Auto Workers. A few months later, on May 1, 1979, their findings were published and are titled Economic Dislocation, Plant Closing, Plant Relocation, Plant Conversion. The library of the Machinists and Aerospace Union can provide a copy.

With the number of plant closings and the amount of relocation occurring in our country since the 70's, it is regretful that this research has not been heeded. In Sweden, when management of a factory wanted to close it down, a conference had to be called between plant management, plant workers and government representatives. All three parties were charged with solving problems and with considering three possibilities:

*Continuing operation with suggestions for improvement from the conferees and the expertise and financial assistance of the government.

*Making it possible for the workers to buy and operate the factory.

*Closing the factory if no other solution would work and helping workers to avail themselves of new skill training without loss of income through government subsidy.

When Japan developed its industrial potential after World War II, it was startling to observe the rapid economic rise of this country which was mandated to adhere to a limit of 2% of the GNP production for military purposes. In the meantime, the

steady increase in the US military budget and in military production caused a productivity decline in our private sector. We now experience the consequences in the catastrophic economic situation manifested in the following statistics:

Each day: 689 babies are born to women who have had inadequate prenatal care; 848 babies are born at low or very low birthweight; 1,512 teenagers drop out of school; 2,795 teenagers become pregnant; and 100,000 children are homeless. Physicians for Social Responsibility (PSR, D.C.).3/92

You, as the Defense Conversion Commission, may not think that the aforementioned statements are relevant to your concern and program. It is our opinion that loss of jobs by defense and military personnel can not be treated separately from the nationwide unemployment problems. Your program for conversion and re-employment must blend with the civilian sector's solutions. Indeed, in the State of Washington, we have been dependent on military contracts and we still are. We have military bases, but we also have loggers, construction workers and subcontractors and small businesses whose livelihood hangs by a thread..

The life of the un- and underemployed and homeless is one of hopelessness and despair. It is telling to read in the newspaper (Seattle Post Intelligencer, August 29, 1992) "Economy slides as profits rise..." "...because corporate cost-cutting included staff and payroll and employment cutbacks, sent profits up to 2.1% to a record of $235 billion after taxes."

It is a Gargantuan task we must undertake together: Labor,

business and governments. Once people see a glimmer of hope, we will be able to establish TOGETHER the greatest asset for our country's future, economy and international prestige.

ECONOMIC DISLOCATION

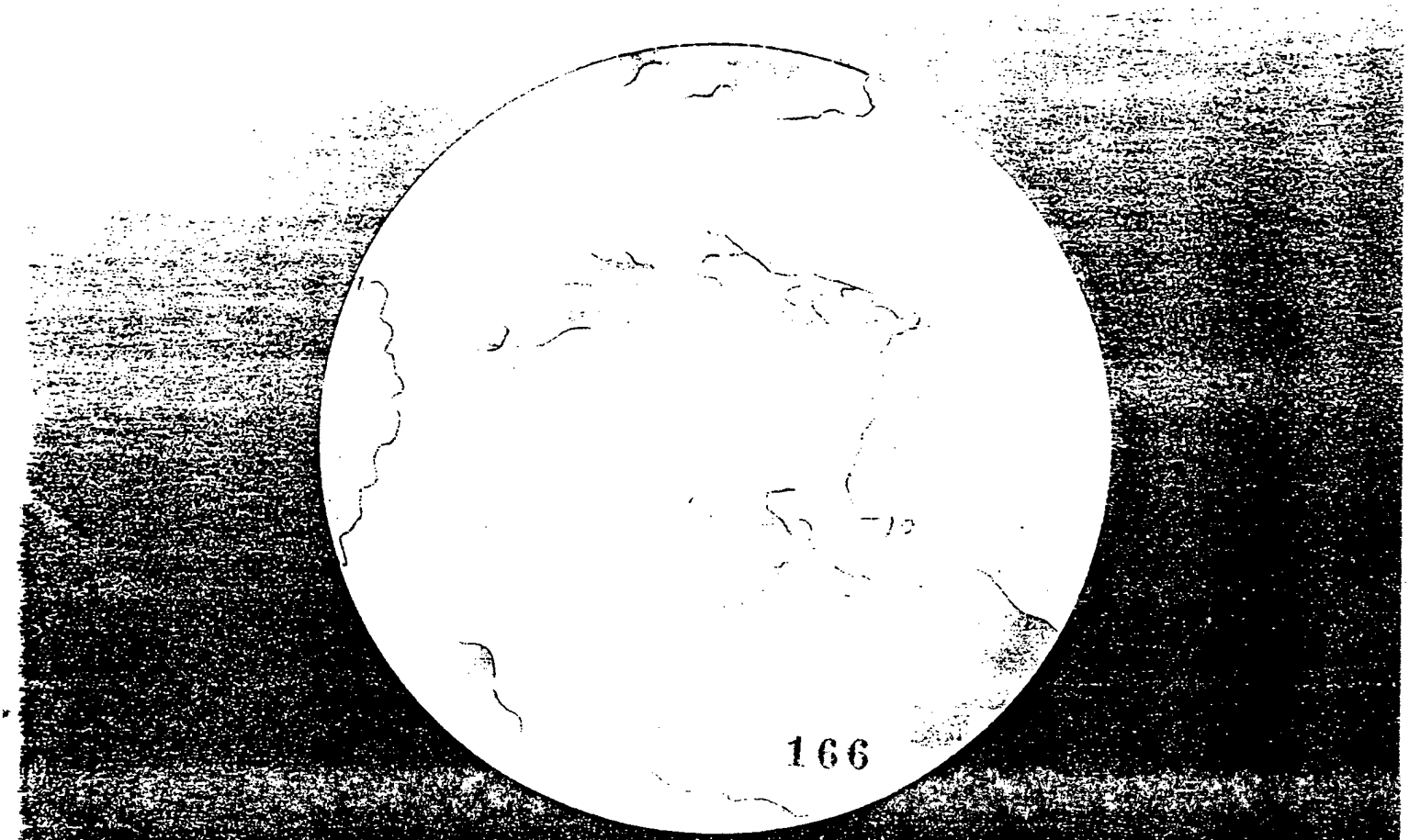
Plant Closings, Plant Relocations and Plant Conversion

Policies and Programs In Three Countries;
Recommendations for the United States

Joint Report of Labor Union Study Tour Participants

May 1, 1979

CONVERTING THE AMERICAN ECONOMY



The Economic Effects of an Alternative Security Policy

Marion Anderson · Greg Bischak · Michael Oden

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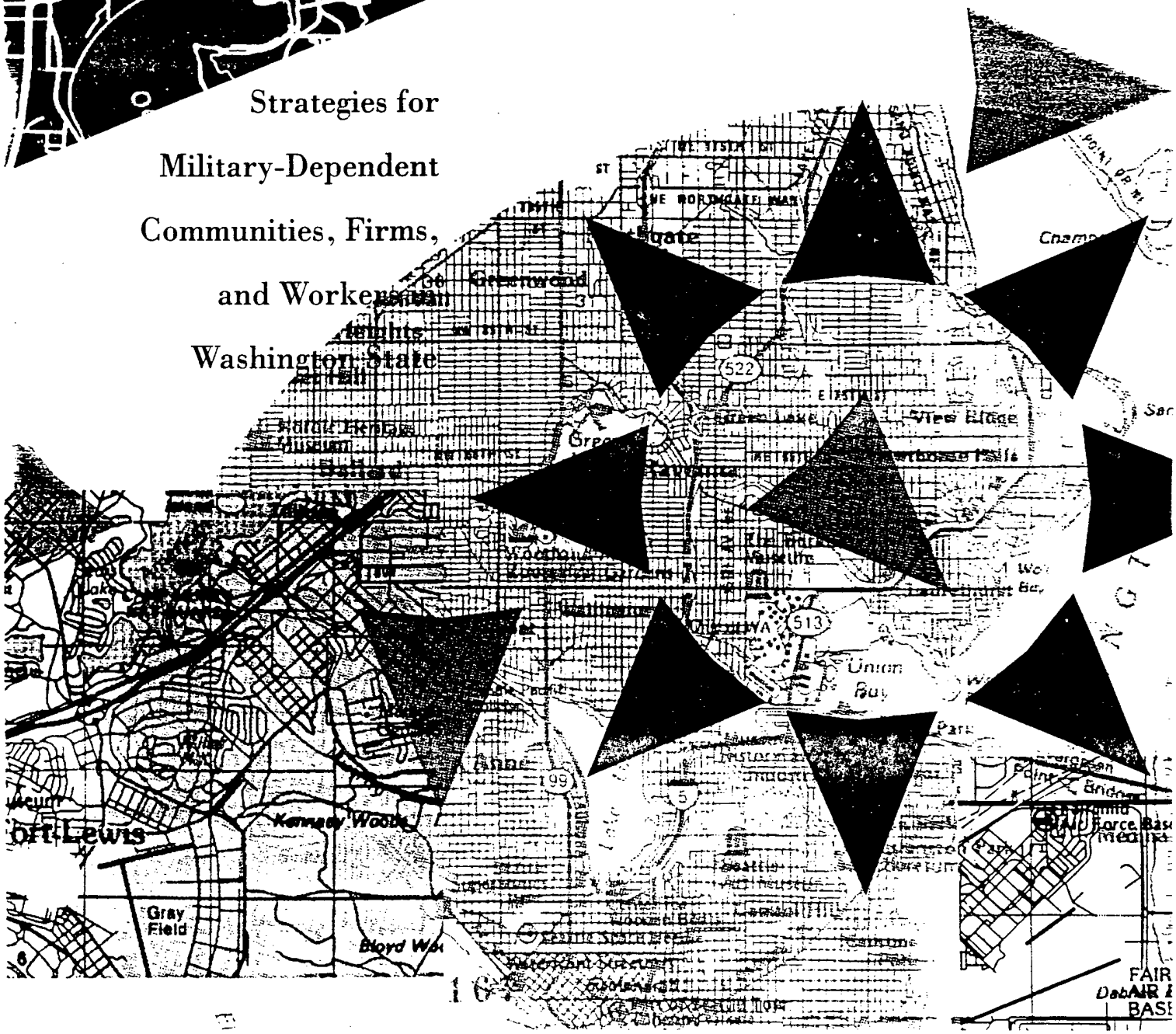
Strategies for Military-Dependent Communities, Firms, and Workers in Washington State



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POSITIVE ALTERNATIVES

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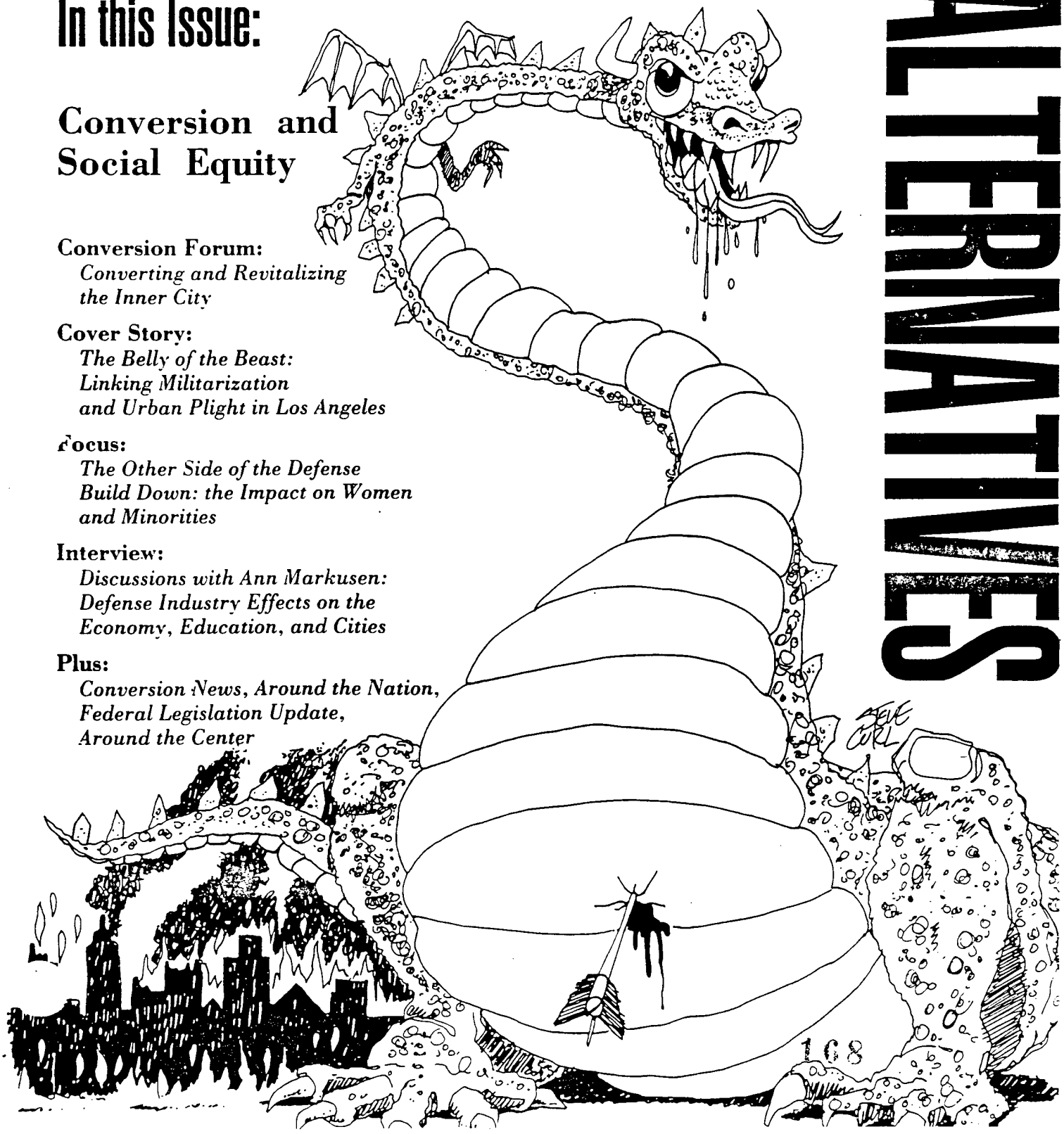
In this Issue:

Conversion and Social Equity



THE DEFENSE MONITOR

The Center for Defense Information believes that strong social, economic, political, and military components and a healthy environment contribute equally to the nation's security. CDI opposes excessive expenditures for weapons and policies that increase the danger of war.

I.S.S.N. #0195-6450
Vol. XXI, Number 5
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Arming Dictators

Defense Monitor In Brief

- The United States continues to lead the world in the sale of weapons to foreign countries, democracies and dictatorships alike.
- In active efforts to promote weapons abroad, the U.S. government last year authorized the sale of a staggering $63 Billion worth of weapons, military construction, and training to 142 nations.
- The U.S. currently provides weapons to 59 authoritarian governments, including Saudi Arabia, Indonesia, Morocco, Thailand, and Guatemala.
- Over the last decade the U.S. exported weapons valued at $135 Billion; more than half, $81 Billion, went to arm authoritarian governments.
- Existing U.S. laws do little to restrain the flow of weapons to governments which have a record of using them against their own citizens.
- U.S. weapons manufacturers actively promote the sale of their products to foreign nations irrespective of human rights abuses, type of government, or aggressive actions against neighboring states.

Despite the end of the Cold War, the United States continues to arm the world. Worst of all, the U.S. continues to arm authoritarian, repressive governments with destructive weapons of war.

The U.S. is the world's number one weapons provider. There are 180 nations in the world and the U.S. regularly sells weapons to 142 of them. In 1991 alone the U.S. licensed the foreign sale of military weapons and construction projects valued at $63 Billion. Forty percent of this ($26.2 Billion) is slated for delivery to 59 authoritarian governments.

Six of the top 10 Third World weapons recipients of 1991 were primarily supplied by the U.S. All six of these recipients (Saudi Arabia, South Korea, Egypt, Thailand, U.A.E., and Kuwait) have authoritarian governments.

The collapse of the Soviet Union and communism has rendered obsolete the traditional reasoning for selling arms to repressive governments. As a July 1992 report by the Carnegie Commission on America and the New World pointed out, **"the end of our global rivalry with the Soviet Union sharply reduces the need to muffle our concerns about unsavory governments because of security concerns."**

No longer is it necessary to compromise American values because of the alleged overriding considerations of the Cold War struggle. Americans can now stand taller by ending the self-defeating policy of arming dictators.

Dictatorships are defined in this *Defense Monitor* as nations in which citizens have no right or power to change their rulers peacefully. Many of these nations have elections, but they are either political charades or fill figurehead offices which hold no real power. Dictatorships in this sense need not be run by a single individual. All too frequently they are dominated by powerful military juntas.

Human rights abuses are common in these authoritarian governments which lack well-established legal systems to protect individual rights. The degree of repression varies among these regimes but they all share an absence of genuinely democratic institutions.

Enterprise Homesteading

Linking Entrepreneurs with Entrepreneurial Communities

Prepared
for the

Defense Conversion Commission

September 24, 1992
Seattle, Washington

MetaDynamics, Inc.

Represented by:

Dean Henney
Delore Zimmerman, PhD

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Enterprise Homesteading
An Overview

The Challenge

- A strong rate of business formation is essential to any healthy, growing economy, providing the primary sources of innovation and new job creation.
- Rural communities and inner cities must increase the number, size and diversity of local enterprise in order to have a stable and viable local economy.
- After years of outmigration, rural communities and inner cities are in relatively short supply of individuals who fit the entrepreneurial profile. That is, midcareer persons aged 30-49 with varied managerial and technical experience.

The Opportunity

- Rural communities and inner cities have the willingess and in many cases the resources to assist in the startup of new business enterprises, the expansion of existing companies, and the assumption of business activites from retiring business people.
- Downsizing in corporate and military organiztions has substantially increased the available pool of midcareer professionals, at the same time that more men and women of all ages are choosing entrepreneurship as a career path.

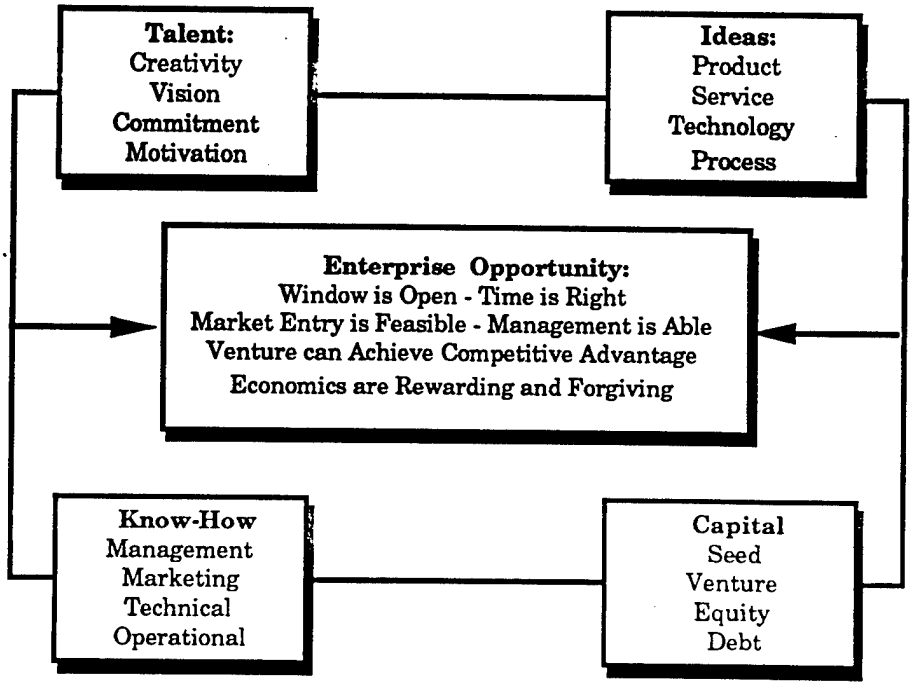
The Approach

- Entrepreneurs and communities will be linked by matching the interests, skills and resources of entrepreneurs with existing business opportunities or strategically targeted business opportunities that have a verified fit with community resources and viable markets.
- Profiles of entrepreneurs and communities will be matched using advanced expert system analyses on a Cray supercomputer.
- Intermediary services will be provided at the early stages to plan, develop and finance the enterprise.

New Enterprise Formation & Economic Growth

A strong rate of business formation is essential to any healthy, growing economy, providing the primary sources of innovation and new job creation. Clearly, the winning economies at the threshold of the next century are rewarding innovation, encouraging entrepreneurship and investing in new businesses that emphasize value instead of volume; apply information, imagination and technology to the production of goods and services; and interact routinely with the global economy.

The entrepreneurial process is most likely to culminate in a successful business venture when the following factors are combined: talent, technology, know-how and capital.[1] Entrepreneurial talent results from the drive, tenacity, dedication and hard work of individuals who, for example, may be dissatisfied with or discharged from current employment, recognize a product opportunity, or have a desire to try a new venture. The second critical ingredient is ideas which must have real market potential within a reasonable time. Capital is the catalyst in the entrepreneurial process without which ideas cannot be realized. Finally, know-how is the ability to utilize existing abilities or find outside expertise in areas such as management, marketing, sales, finance, accounting or business law. A successful business venture is one that integrates these factors.



Enterprise Formation = Talent + Ideas + Know-How + Capital

New Enterprise Formation: Entreprenuers and Entrepreneurial Communities

New enterprise development is a common strategy element in economic development programs at the community and regional levels, both urban and rural. Although many communities continue to spend considerable resources on recruiting outside companies, "an apparent consensus has developed that holds that local economic fortunes are founded upon indigenous venture formation; that is, local entrepreneurs."[3] New firm's founders are almost always local[4], a phenomenon that has been so well documented in new firm surveys that it could almost be taken as an axiom.[5]

Studies of new enterprise formation[6] have found that the only statistically significant association with the birth of new firms (particularly those with export potential) involve social, life course characteristics rather than economic variables. That is, the larger the percentage of midcareer adults and those with education beyond high school, the higher the birth rates of export potential new firms. In the case of new births of local market firms, the presence of young adults and a high unemployment rate exhibited the highest positive associations, although neither was statistically significant. A Minnesota study's conclusions include the following:

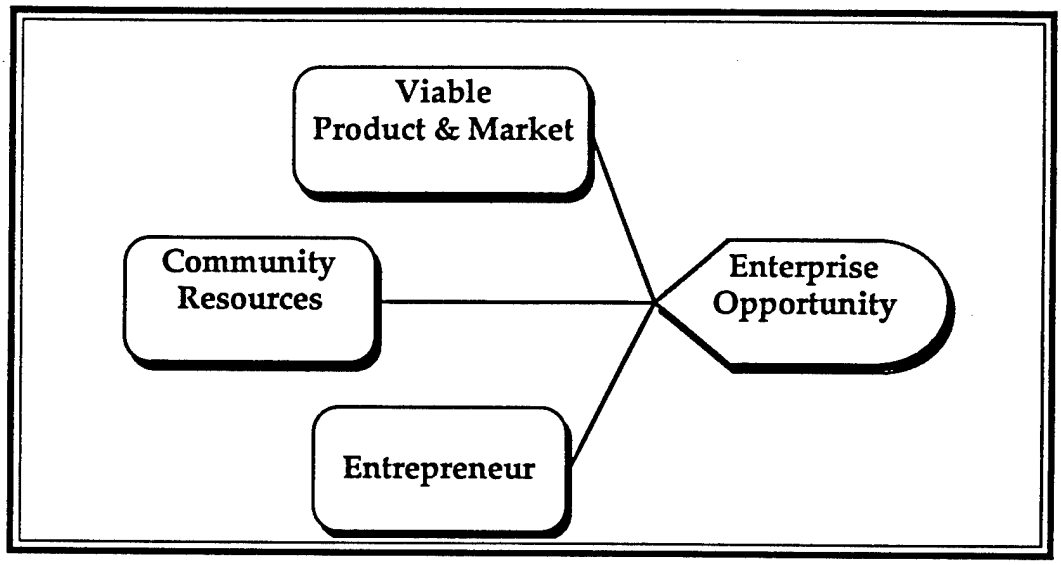
> "the most critical factors in the birth rates of new firms may be difficult to affect with public policy —at least in a short period of time. Most important is the presence of established firms in a given industry as the source of trained individuals in midcareer, those responsible for initiating new firms in export potential industries. It is those college-educated, experienced individuals between 30 and 49 who appear to be absent from rural regions. This may reflect the rural-urban migrations that have been occurring for decades."

After decades of exporting large numbers of talented and skilled youth, many areas of America lack a significant pool of young, midcareer adults with the skills and experiences that are well-suited to the enterprise formation process. This does not suggest that the entrepreneurial spirit is absent; indeed there are numerous examples that we can point to as success stories. Nonetheless, without increasing the indigenous pool of entrepreneurs, these economies will continue to lag in small business startups and, consequently, have difficulty in creating sustained economic growth.

Individuals who fit the entrepreneurial profile are in relatively short supply in rural communities and inner cities	Many communities and development entities have the resources available to invest in new enterprises that can help to rebuild local economies.

Enterprise Homesteading:
Linking Entrepreneurs & Communities

Enterprise Homesteading is the linking of communities with individuals or assembled teams of people that have the managerial, technical and marketing skills suited to build and operate businesses in those communities.



- **Enterprise may be based on:**

  1) Product or service opportunity that is brought by the entrepreneur or venture team.

  2) Opportunity identified by the community that may be 1) an existing business where the owner is retiring, 2) based on local resources or competitive advantages and targeted for development, or 3) a spin-off from an existing local or non-local business.

- **"Enterprisers" can be :**

  1) Individual entrepreneur or venture team with product or service in hand

  2) "Loose managers" - who did or now work for large companies but are looking to join a startup team or start a business

  3) Voluntary or involuntatry separations from the military who are looking to start a business or join a startup team.

Recruitment Strategies for Enterprise Development: Historical & Contemporary References

Targeted recruitment and the provision of incentives to people with particular talents, training and abilities is a longstanding practice.

- Catherine the Great of Russia recruited skilled farmers and businessmen from Germany in 1763. The incentives provided included:

  - free transportation
  - free land to farmers
  - interest-free loans for 10 years
  - no taxes for 5 to 30 years
  - freedom of religion and freedom from military service

- **The American Homestead Acts of 1862, 1909 and 1916** brought thousands of settlers to the farm lands of the Midwest United States; individuals and families that came to live on the land because of incentives offered by the government and the railroads.

  - free tracts of land to provide the basic productive resource
  - promise of easy access to rail transport
  - realization of the dream to own a home

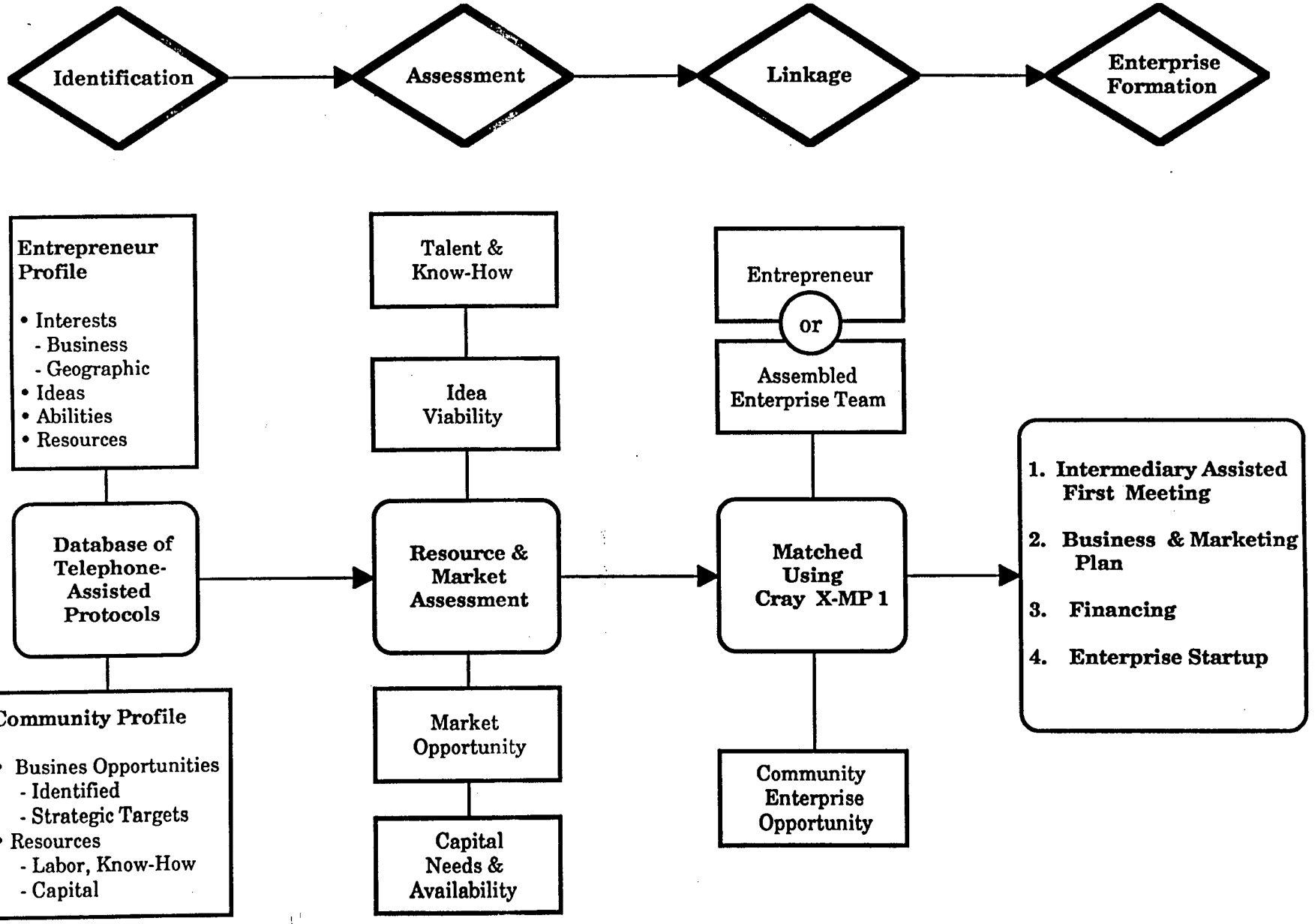
- Recruitment of professionals in health, insurance and other fields is a common practice today among rural communities. Incentives that are used include:

  - stipends for expenses while in college and paying off school loans
  - income guarantees
  - providing pre-siting training
  - cash awards and bonuses
  - providing office space
  - initiating joint ventures with existing organizations
  - appealing to quality of life factors, e.g. small town values, safety

Development and Delivery of the Service

The foundation for Enterprise Homesteading will be two national databases created on an Apollo 3500 workstation for subsequent matching analysis on a Cray X-MP1 computer. We anticipate submitting a Phase II Small Business Innovation Research proposal to the United States Department of Agriculture in early 1993 to develop and pilot Enterprise Homesteading.

TASK	3 YEAR OBJECTIVE
1) **Build and maintain a database of entrepreneurs that can be used to identify interests, ideas and abilities that can be mobilized to start new businesses.**	• 6,000 Military Separatee Entrepreneurs & • 10,000 Civilian Entrepreneurs on the Network
2) **Build and maintain a database of community profiles that can be continually updated to include emerging business opportunties.**	• 3,500 Communities & Development Organizations on the Network
3) **Develop and execute expert system for matching entrepreneurs and communities using a Cray X-MP 1 supercomputer.**	• 2,500 Potential Matches Identified
4) **Assessment & intermediary services to implement the linkage.** -> Preliminary assessment of the market opportunity and its fit with the local community, the entrepreneur & management team, and available capital investment. -> Initial introduction of the entrepreneur to the community that establishes the entrepreneur-community relationship from a common understanding of the parties' resources and needs.	• 300 Intermediary Assisted Linkages & an Indeterminate Number Unassisted



Enterprise Homesteading

Delore Zimmerman

Mr. Zimmerman has been a managing partner of MetaDynamics, a research, planning and development company with offices in Grand Forks, ND and Crookston, MN since 1986. Prior to that he was a planner at the Northwest (MN) Regional Development Commission (1982-86) and a research assistant at the Institute for Policy Research and Evaluation, Pennsylvania State University (1981-82). His experience includes over 10 years in research, planning and development in the areas of community and regional economic development, technology research, development and transfer, proposal and grant writing, and change and innovation in organizations and communities. He is a sociologist with undergraduate and graduate degrees from the University of North Dakota and a Ph.D. from the Pennsylvania State University. He has additional training from the University of Chicago's Graduate School of Business.

His professional experience includes:

- Principal investigator on a Small Business Innovation Research project for the US Department of Agriculture, to investigate new ways for starting new ventures in rural communities.
- Coordinating the efforts of 18 higher education institutions in working with business and industry to carry out applied research, technology adoption/adaptation, and new product commercialization.
- Helping companies to raise investment capital from public and private sources.
- Helping industries to obtain funding for research and development to commercialize new products and technologies.
- Conducting market research and designing strategic marketing plans for new products.
- Working with economic development organizations to develop long-range strategies for growth.
- Serving as a research assistant for a National Institute of Mental Health study of economic development efforts in 100 communities while at the Institute for Policy Research and Evaluation, Pennsylvania State University.
- Serving as a contributing editor for technology and economic development related topics for the American Sociological Association's Environment and Technology Section newsletter
- Co-chairman of the Rural Policy Research Interest Group (1992-93), Rural Sociological Society

Publications and reports include the following (selected):

"Enterprise Homesteading for Rural Development." Presented at the VIIIth World Congress for Rural Sociology, Pennsylvania State University, University Park, PA. August, 1992.

"Rural Reconstruction: Points of Departure." In The Forum: Rural Development Policy , The Rural Sociologist. (1991 Spring).

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"Local Economic Development through Technology Development and Transfer." Environment, Technology and Society Newsletter, American Sociological Association (1989 Fall)

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'The Mobilization of Territorial Alliances to Enhance Economic Development." Dissertation: The Pennsylvania State University, Department of Sociology. University Park, PA. 1986.

Dean M. Henney

Mr. Henney joined MetaDynamics as a consultant in 1992. Prior to this he served as a reservist Captain of Marines in Desert Shield and Desert Storm. From 1989 through 1990 he was a management Consultant with the Federal Practices Office of Coopers & Lybrand in Arlington, VA. His assignments there included strategic planning seminars with the Bureau of Mines and USAF, and a major defense contract audit project with the Defense Logistics Agency. He is Co-Founder of IMAGICA, an international non-profit organization devoted to raising awareness in the visual, literary, and performance arts of children, and is Editor-in-Chief of The Journal of Children's Arts. He is a board member of the American Journey of the Heart Foundation, an organization seeking support for the victims of the Chernobyl disaster in the Ukraine. Mr. Henney resides on the farm where he was raised near Winger, MN.

His professional experience includes:

* Laid the strategic groundwork for IMAGICA, developed the format and layout design for The Journal of Children's Arts, and initiated numerous international contacts for the IMAGICA organization.

* Allied and NATO cross-training assignments as a Marine reservist member of ANGLICO.

* Design and development of a Rural Area Network (RAN) to link 11 communities via interactive telecommunications. The RAN will provide distance learning opportunities for youth and adults as well as access to information services and the ability to interactively exchange business and medical information.

* Developing strategic plans for the implementation of Enterprise Homesteading in all fifty states.

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Allen, D. and V. Levine. 1986. *Nurturing Advanced Technology Enterprises.* New York: Praeger.

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Statement of
Dean M. Henney and Dr. Delore Zimmerman
MetaDynamics, Inc.

Before the
Defense Conversion Commission
Department of Defense

Concerning
Enterprise Homesteading as a Response to Military Downsizing

Seattle, Washington
24 September 1992

Mr. Chairman and Members of the Commission:

We are pleased to have this opportunity to testify before the commission, and I would like to especially thank Robin Higgins for mentioning the public hearings to me last month. We feel that the research information we have to share offers an opportunity for a significant percentage of separating servicemen and women; and it lays out a system for job creation on a national scale.

Your panel exists to review opportunities for service members, civilian DOD employees, and communities affected by military downsizing. The reduction in force has created unexpected "windows of opportunity" for the men and women who are re-entering the civilian economy. Our Focus Groups indicate that a significant percentage of exiting service members are prepared to become job creators, rather than job hunters.

The American Dream has a number of inherent parts: home ownership, strong family ties, and opportunities to raise ones standard of living. Most - if not all of us - have given thought to the idea of owning our own business. This entrepreneurial dream offers the hope of being in control, setting ones own course, and risking an idea in the hope of ultimate gain.

Unfortunately, the lone entrepreneur must overcome a great many barriers before the idea can ever come to fruition. The decision to risk ones own capital is daunting enough. Then comes the need for a professional business plan,

financial projections, and marketing studies. Other factors further inhibit the process.

Let me provide an illustration: if you wanted to find out about job openings in Dallas, you could easily obtain a listing from your local Jobs Service office. If you wanted information on homes, any realtor could make the connections necessary to obtain listings. But if you were interested in starting a computer service business or owning a hardware store, where would you turn? How would you find out about business opportunities in cities nationwide? Enterprise Homesteading offers those connections.

Enterprise Homesteading will consist of a national entrepreneurial assistance system. Databases within the system will consist of individual entrepreneur and community profiles that can be used to match opportunities with resources.

Individuals will confer with business advisors about their particular area of entrepreneurial interest, experience and training, available financial resources, and locational preferences. Communities will profile their existing businesses and their future economic growth opportunity areas. For instance, a rural midwestern community might have a strong interest in establishing a telecommunications business center to process medical claims. Or, an urban inner-city might recognize an opportunity for establishing a taxicab training academy along the lines of the London model.

Cities and small communities are made up of unique concerns, demands, and potentials. What they have in common is a very real need for job creators.

In the course of our discussions with exiting service members we learned a lot about the Transition Assistance Program. I have also met with Mr. Robert Stein, Director of Operation Transition. The transition information presently offered is very thorough in terms of preparation for re-entry into the jobs market. Resume preparation, interviewing skills, and networking are discussed over the three-day course. However, little direction or support is given to the 15% who want to become employers.

Potential employers need information on business planning, accounting, marketing, financing,and opportunities. Enterprise Homesteading will offer just this sort of professional information.

The research and program plan offered by MetaDynamics holds immediate interest for service members departing active duty. On a larger scale - and here I would ask you to consider our plan along the lines of federal labor, commerce, and economic development strategies, we have prepared a systematic, straightforward plan of action for jobs creation.

How MetaDynamics can assist the Defense Conversion Commission:

MetaDynamics would like to profile the "RIF'd" servicemen and women who have a strong entrepreneurial desire. Enterprise Homesteading could become part of the Transition Assistance Program. Our conservative projections indicate a potential profile population of six thousand by the end of calendar 1993. These are men and women who have the skills training, leadership seasoning and experience, and financial stability necessary to turn their dreams into reality.

We have already conferred with economic development authorities in Pennsylvania, North Dakota, and Minnesota, and will meet tomorrow with Oregon officials. Our strategy with state development authorities and Small Business Administration officials will center on the preparation of profiles of urban and rural places willing and able to work with new entrepreneurs. Our immediate goal is the creation of individual and community profiles to begin the matching process.

The American Dream is about opportunities. Enterprise Homesteading can help turn entrepreneurial ideas into viable job opportunities.

Testimony of Paul J. Kostek

before the

Defense Conversion Commission

September 24, 1992

Mr. Chairman and commission members. My name is Paul Kostek and I am an electrical engineer and have been working in the avionics industry for the last 3 years. Prior to this I spent 10 years in the defense industry. I also am the Chairman of the Institute of Electrical and Electronics Engineers (IEEE), Inc. committee on Manpower.

My purpose here today is to present recommendations on defense conversion as it relates to engineers. Below is a summary of the items that I will be addressing today.

- Retraining programs for any displaced defense workers should be based on identified industry needs. Rather than create stand-alone training/retraining programs, employers should be eligible for a tax credit for hiring and training defense workers. This would be a more effective use of funds and eliminate the need for extensive industry surveys and establishment of training programs. This would also provide employment opportunities in a more timely manner.

- Ease anti-trust laws to allow firms to enter cooperative relationships in new product development. This action, accompanied with the recent elimination of the recoupment requirements placed on defense contractors, will help firms transition from military markets to commercial markets.

- The problems faced by displaced defense engineers are not skills issues, but rather the perceptions of commercial employers. Methods and practices used by the defense industry are considerably different from the commercial market. Government and professional societies need to work toward changing these perceptions.

Training/Retraining

I do not believe that a government sponsored retraining program is required for engineers displaced by defense contractors. Rather I would recommend that employers be given tax credits for hiring and providing training to these displaced engineers or allow inclusion under companies affirmative action programs or provide affirmative action credits. This is an extension of the hiring requirements that are included in HR5006 (Defense Authorization Act), where in Sect 4322 item a) Condition of defense contracts: "... shall include a provision requiring that during the period that the contract remains in effect the contractor, in hiring employees in an occupational speciality, shall give a first right of hire to any displaced defense worker with with skills in that occupational speciality."

Encouraging the hiring and training of engineers by employers would eliminate the need for the government to perform industry surveys to identify what areas retraining programs should cover. This would also limit occurrences of retrained engineers being unable to find employment in their new fields upon completion of a retraining program. The time and resources required to develop training programs, which would include any industry surveys, would have to be started now to be in place to support those presently laid-off and those who will be impacted by future lay-offs.

If a retraining program is undertaken I would recommend that the following be included as a part of the package: job placement, relocation assistance, and financial support in the form of benefits and severance pay extensions at the rate of one month per year of service. This would be of particular importance to older and non-degreed engineers. Both of these groups could face a difficult challenge in finding employment. This will be a loss to the U.S. economy, since no level of current technical knowledge can replace the wealth of experience offered by our older engineers who know "how" to get a product to market and have the experience in dealing with customers.

Business Practices

The recent elimination of recoupment fees will encourage the dual-use development of products, which will provide DoD access to many of the improvements that result from product commercialization. This could be done without additional research funding and shorten the implementation schedule.

Modifications to the existing anti-trust laws would also ease the transition from defense to commercial markets by allowing firms to collaborate in the development, manufacturing and marketing of products. This will be especially important to smaller firms that are needed to produce smaller quantities of unique products for DoD, but must also diversify into commercial markets.

Business Practices cont.

Guidance is also required from the DoD in the establishing of a vision for the future of the U.S. defense industry. This should include the definition of how products and services will be procured from vendors and the identification of unique products/services that will require special support from DoD. These actions would help companies to assess new business opportunities and redefine their manufacturing, service, and marketing, either remaining a totally focused defense contractor, converting to commercial only, or integrating both defense and commercial. Included as a part of this effort should be the continued streamlining of the procurement process, including the elimination of unnecessary requirements for MIL-Spec parts and processes.

The Practice of Engineering

If there is one area that the DoD and professional societies can work together on, to improve the future employment opportunites for engineers, it is in the perception of defense industry engineers. Public and private perceptions of defense industry engineers capabilities must be changed. Frequently engineers employed in the defense industry are perceived as being unable to meet commercial requirements of cost and schedule. Because of the extended delivery schedules of defense projects and the application of military specifications, practices and procedures defense engineers are seen as being a poor fit for commercial companies where new products must be market ready in 18-24 months. Salaries are also considered to be higher than that of the commercial sector. The OTA study "After the Cold War" which was published last year addressed these particular issues. Regarding salaries the study states: "... statistical evidence suggests that salary levels for engineers with comparable experience and academic qualifications are not clearly higher inside defense than outside." "What emerges as the most important factor, however, is whether the engineer has remained flexible by keeping technical skills up-to-date. Career-long education-- a responsibility of both the engineer and the company, achieved through postgraduate courses and job rotation-- is paramount."

Engineers employed in the defense industry are required to adhere to the practices and procedures required by the contracting organization. Much emphasis is placed on the methods and practices used and not on the resulting innovations achieved by engineers. The successes of firms diversifying products for application in commercial markets demonstrates that engineers are adaptable to the requirements placed on them. Essentially, engineers are being penalized for being able to adapt to the requirements of defense projects.

Conclusion

I believe that through the use of tax credits and other inducements employment opportunities can be found for engineers without creating large scale retraining programs. We must also ensure that opportunities are provided for older engineers.

The recent updating of recoupment requirements and the proposed relaxing of U.S. anti-trust law will help companies in diversifying their products.

The DoD and professional societies should also work together to address the image problem faced by defense engineers. This can be done by highlighting the technical innovations of the defense industry and how these have been applied to commercial markets. Successful transitions by engineers from defense to commercial industry, and most importantly engineers who have helped their employers transition products from military to commercial applications.

References

After the Cold War - Office of technology Assessment 1991
(pages 21 and 22)

HR 5006 1993 Defense Authorization Act
Section 4322 - Defense Contractor Hiring Preference for Displaced Defense Workers

Outline of

Testimony of Paul J. Kostek

before the

Defense Conversion Commission

September 24, 1992

Below is a summary of the items that I will be addressing.

- Retraining programs for any displaced defense workers should be based on identified industry needs. Rather than create stand-alone training/retraining programs, employers should be eligible for a tax credit for hiring and training a former defense worker. This would be a more effective use of funds and eliminate the need for extensive industry surveys and establishment of training programs. This would also provide employment opportunities in a more timely manner.

- Eliminate or decrease the recoupment requirements presently placed on defense contractors for military products that are commercialized. Also ease anti-trust laws to allow firms to enter relationships in new product development.

- The problems faced by engineers are not skills issues, but rather the perceptions of commercial employers. Methods and practices used by the defense industry are considerably different from the commercial market. As a result many commercial firms feel engineers from the defense industries will not fit in there organization. Government and IEEE needs to work toward changing these perceptions.

Biography of Paul Kostek

Paul Kostek is serving his third year as Chairman of the Manpower Committee of the Institute of Electrical & Electronics Engineers, Inc. This committee monitors employment trends impacting Electrical, Electronics and Computer engineers in the U.S. The committee's activities include: monitoring legislation; reviewing and commenting on studies relating to manpower; and educating members and the public on engineering manpower issues.

Mr. Kostek also served as the Chairman of the Seattle Section of the IEEE. And is a member of the Aerospace & Electronics Systems Society Board of Governors.

Paul Kostek is a Senior Member of the Institute of Electrical and Electronics Engineers.

Mr. Kostek is a Senior Design Engineer with Sundstrand Data Control in Redmond Washington. Mr. Kostek is in the Avionics Systems Division of Sundstrand working in Data Management.

Prior to joining Sundstrand Mr. Kostek spent eight years with the Boeing Company working on a range of projects including the 757, B-1B Avionics, and Product Development for Navy Systems.

While at Boeing Mr. Kostek served on the Executive Board of the Seattle Professional Engineering Employees Association (SPEEA) from 1984-1987. Mr. Kostek represented SPEEA on the Joint Training Advisory Committee (JTAC) from 1984-87. This committee identified potential training projects for engineering and technical employees.

Mr. Kostek holds a BS from Southeastern Massachusetts University. And has undertaken graduate work at the Polytechnic Institute of New York.

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Department of Defense
Defense Conversion Commission

"Enclosure A" Background Information

Gentlemen:

My name is Bill Jenkins, a member of the Board of Directors for Fraser, Inc.

"Enclosure A" of this presentation, contains a short personal Resume, plus a couple of letters from my EGO file, which relates to the years I have spent on the T-AGOS program.

This program, accelerated and made critical by the WALKER Brothers Spy Case, was decreed by the Navys' Naval Sea System Command, to be a 100% Commercial "buy", and it was to be managed by the Supervisor of Shipbuilding using personnel assigned to him, from the Military Sealift Command (MSC). The theory being that MSC would be able to enforce the Commercial "buy" philosophy, and thereby, with the help of the United States Coast Guard and the American Bureau of Shipping, build and deliver the vessels on time and near or within budget.

Well, it was a battle, but it WORKED!! In the eight years of my involvement, two things, consistently caused problems, which I feel today, are apropos of this Committees' deliberations;

First: <u>The Mil-I, Mil-Q, Mil-Spec Philosophy and Mentality which pervades the Department of Defense.</u>

Probably, appropriate for Combat Craft, particularly Nuclear propelled vessels or Supersonic or Stealth Aircraft, but in my opinion, totally inappropriate to one of your duties viz: "cooperative ventures between the Federal Government and Companies predominately engaged in Defense Related Activities, etc."

UNLESS THIS COMMITTEE MANDATES THAT SUCH JOINT VENTURES UTILIZE ONLY COMMERCIAL STANDARDS, SUCH AS AIA, ASTM, SAE, API, ETC., ETC., YOU ARE DOOMED TO FAILURE IN THIS AREA!!

It takes far less people to administer a Commercial approach to any problem, which means less Department of Defense involvement. They will fight you all the way!!

SECOND: Basic Procurement Policy Must Change

This may well be outside the purview of the Committee, but here it is anyway.

The present near strangle hold control of Procurement and Contracting by Lawyers and Bean Counters, must yield to reality! Only the lowest Responsive Bidders, not the lowest Dollar Bidders, should be considered in any award!!

My defination of "Responsive", particularly on the part of equipment or critical machinery suppliers, includes the Condition that said supplier is fully capable of remaining and equally fully intends to remain, in business, over the life-cycle of the equipment or machinery being supplied. Perhaps this is his first Government Bid; So What! If he meets the above criteria, then, he could be considered "Responsive". Dealing with reputable manufacturers and OEM'S is the primary way to control life-cycle costs.

The final say as to who is "Responsive" and who is NOT should rest with the end user - the Customer!! The one who has to use and maintain whatever is involved.

This will go a long way towards eliminating claims and overruns, and most certainly, it will virtually eliminate the one-shot entrepreneur.

In closing, I would like to address a comment or two to Mr. Lavin of the Department of Commerce. With all due respect Sir, Do we as a nation need a Merchant Marine or don't we? I think we do, and DESERT STORM bears me out!!

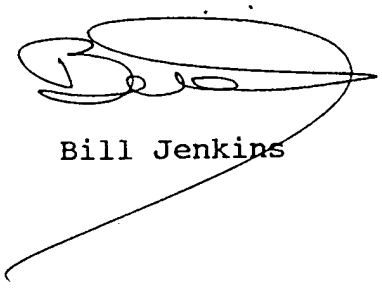
Assuming I am correct, I strongly feel that your Department should promptly and aggressively push for some level of revitalization of our Merchant Marine!! For one thing, it would go a long way towards mitigating the impact of Department of Defense downsizing on the U.S. Shipbuilding Industry!

Time is of the essence!! The decision as to HOW MUCH shipbuilding capability this Nation needs and WHERE IT SHOULD BE LOCATED, is long overdue!!

If such a decision isn't made quickly, there won't be any shipyards (worthy of the name) left to worry about - and I don't think that that is in anyones' best interest!

Members of the Committee,

I thank you for entertaining my thoughts,



Bill Jenkins

RESUME

William (Bill) Jenkins

BORN: March 4, 1922 New York City

ATTENDED: Villanova College, Pennsylvania

GRADUATED: U.S. Naval Academy, June 1944

SERVED: World War II and Korean War

Resigned regular United States Naval Commission, Accepted United States Naval Reserve Commission - Retired as Captain, United States Naval Reserve

EMPLOYED AS:

A) Sales Engineer Power Generating Equipment

B) Port Engineer Commercial Steamship Company

C) Assistant Director of New Construction Commercial Steamship Company

D) Port Engineer, Military Sealift Command

E) Construction Representative, Military Sealift Command

F) General Manager, Fraser Boiler & Diesel, Inc., Retiring in November of 1991

Positions A) through F) covers approximately 40 years experience.

PRESENTLY: Serving on Board of Directors for Fraser, Inc.

ENCLOSURE "A"

DEPARTMENT OF THE NAVY
SUPERVISOR OF SHIPBUILDING, CONVERSION, AND REPAIR, USN
SEATTLE, WASHINGTON 98115

IN REPLY REFER TO
T-AGOS/NC80-2046
Ser 171-4991
6 June 1986

From: Supervisor of Shipbuilding, Conversion, and Repair, USN, Seattle, WA
To: Mr. William Jenkins, (GM-830-14), Deputy Resident Supervisor, Tacoma, WA

Subj: NAVY MERITORIOUS CIVILIAN SERVICE AWARD; PRESENTATION OF

Ref: (a) NAVSEAINST 5305.3

1. Your performance of duty as the Deputy Resident Supervisor and Deputy T-AGOS Project Officer for the period 25 January 1981 thru 2 June 1986 has been exemplary. In recognition of this outstanding service, and in accordance with reference (a), you are hereby awarded the Navy Meritorious Civilian Service Award.

2. From the design phase thru the delivery of eight Ocean Surveillance Ships, you have been responsible for technical guidance and quality assurance on this critical program. Your professionalism in clarifying design problems, coordinating with regulatory bodies, and supervising the Q.A. program has been pivotal in the successful execution of the T-AGOS contract. In spite of significant turmoil in the management and financial stability of Tacoma Boatbuilding Company, you have consistently achieved excellent quality on vessels presented to the Board of Inspection and Survey for acceptance for Naval Service. Your consistent emphasis on proper contractual dealings with the Contractor helped make the T-AGOS contract free of construction change controversy. And finally, your utilization of Military Sealift Command crew members as part of the final acceptance trial team resulted in smooth turnovers to the operating crews of the completed vessels.

3. Your leadership and engineering excellence are in the finest traditions of Naval Service and deserving of special recognition. In addition to the Navy Meritorious Civilian Service Award, please accept my sincere appreciation for a job well done.

P.F. Grasser

ENCLOSURE "A"

DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND
WASHINGTON, D.C. 20362-5101

IN REPLY REFER TO
9000
OPR: 383A4G
Ser 383/91-0179
1 Aug 91

From: Commander, Naval Sea Systems Command
To: Mr. Bill Jenkins (Ret.)

Subj: LETTER OF APPRECIATION

1. The contract award for the first of the T-AGOS monohulls was signed on 27 September 1980 with USNS STALWART (T-AGOS 1) delivered early in 1984. From the very first introduction, this program has experienced many successes and achievements. Early operations quickly proved that the T-AGOS monohulls would revolutionize subsurface surveillance; and a consistently impressive readiness for deployment contributed materially to meeting the continued Soviet submarine challenge. Among the many class achievements, USNS ADVENTUROUS (T-AGOS 13), was named as the "Outstanding Oceangoing Ship of 1989" by the Maritime Reporter & Engineering News. Since the first mission, these ships have successfully completed many surveillance missions in high seas and have lived up to the positive attributes embodied in their names.

2. When the last T-AGOS monohull passed the SCN Work Limiting Date on 31 March 1991, it was the culmination of over ten years of hard work, achievement and honors associated with this program. These noteworthy results were the products of teamwork, professionalism and dedication exhibited by the many individuals and organizations that were committed to the T-AGOS/SURTASS effort.

3. The quality of ships delivered and their demonstrated ability to survive the most demanding environment are indicative of the "up-front" planning, procedures established, methodology employed and your attention to detail. In addition, your contribution was essential in resolving contract disputes and other issues during the ship construction process. Also, the guidance you provided to the T-AGOS program contributed to its overall success.

4. In recognition of your contribution to this program, I want to express my deepest appreciation for your efforts and the dedicated spirit that made the T-AGOS monohull program successful. You have reason to be proud of what this program has achieved; I wish you continued success in the future. Congratulations on a job well done.

J.M. Todd
By direction

Washington State University
Small Business Development Center

245 Todd Hall
Pullman, WA 99164-4727
509-335-1576
FAX 509-335-0949

Department of Defense

Defense Conversion Commission Hearing

Testimony by:

Lyle M. Anderson
State Director
Washington Small Business Development Center
Washington State University
245 Todd Hall
Pullman, WA 99164-4727

September 24, 1992

Washington State University
Small Business Development Center

245 Todd Ha
Pullman, WA 99164-4727
509-335-1576
FAX 509-335-0949

TO: Department of Defense
Defense Conversion Commission
September 24, 1992

Esteemed Commission Chair:
Honorable Members of the Commission:

My name is Lyle Anderson. I am State Director for the Washington State Small Business Development Center (SBDC) program and a member of the executive committee for the national Association of Small Business Development Centers (ASBDC). I am representing the interests of both of these organizations at this hearing today.

I have distributed copies of my testimony as well as copies of a position paper written by Mr. Gregory L. Higgins, Jr., State Director for the Pennsylvania Small Business Development Centers.

I understand that the commission is interested in issues related to the changing roles of defense and their potential effect on impacted communities. Part of the impact, especially as it relates to military base closings,

reductions and procurement adjustments, will directly affect the economic vitality of the surrounding communities and businesses.

As part of the defense conversion process I urge the commission to consider supporting the creation of a defense adjustment assistance program that is designed to provide direct asssistance to small and medium sized businesses operating in the impacted area.

As addressed in Mr. Higgin's paper, evidence suggests that in addition to losses in civilian employment resulting from base closings, a large number of firms in the impacted area will experience significant decreases in earnings and in employment. Furthermore, the impact of base closings and the additional reduction of facilities, combined with the reductions in procurement in this already difficult economic period, create a very dangerous environment for the survival of many small firms.

Faced with these economic conditions businesses must determine the impact these closings and adjustments will have on their operations, their markets, their products and their margins.

Again, as pointed out by Mr. Higgins, "while large firms most often have the financial resources or the in-house expertise to develop and analyze information required for these

strategic decisions, most small and medium sized firms do not. It is also quite likely that many, if not most, do not have the resources to buy that expertise."

To address these issues, I will focus my remaining remarks on two areas: 1. the ability of the national Small Business Development Center program to implement an adjustment assistance program for defense dependent firms; and, 2. the ability of the Washington State Small Business Development Center to provide services to defense dependent firms.

The SBDC program was established by Congress to provide business development and technical assistance to small and medium sized firms facing market opportunity or adverse conditions. The program is built upon the premise that critical information and expertise can be transferred to the small business owner or operator to improve the potential for success. Additionally, the program is designed to increase the operations and decision making skills of the small firm's leadership.

Building on these premises the national SBDC program has developed a set of special capabilities to serve the small business sector. For example, there are more than 700 SBDCs operating throughout the country with specifically tailored programs operating in each of the 50 states plus Puerto Rico and the Virgin Islands. Most of these programs not only provide one to one business skills development counseling and training, but also provide special assistance in such areas

as non-defense procurement, export market development, product development, technology development and commercialization as well as ties or linkages to other business and technical programs designed to assist small businesses.

Let me use our Washington State program to illustrate the depth and breadth of our services. We operate 16 business counseling centers and 25 business training centers throughout the state of Washington. The counseling centers are responsible for serving more than 6000 small businesses each year. 2500 of these businesses receive in depth counseling designed to positively affect the way these firms do business. Yearly analysis of these firms supports the conclusion that businesses provided with in depth counseling assistance will create more than 750 new jobs each year and average $25,000,00 in new investment each year.

In addition to our basic business development services we operate an innovation assessment center. This center evaluates new inventions with an objective of determining the product's potential for commercial success. We also operate a small business export assistance center and act as the Washington state regional affiliate for the NASA Regional Technology Transfer Center located at the University of Southern California. Through the NASA RTTC we are able to provide firms with access to information and expertise inventoried at NASA and the other federal laboratories. Additionally, we work closely with other business and technical assistance providers throughout the state including our Department of

Trade and Economic Development, local economic development centers and associate development organizations and private industry councils. Finally, we operate a very effective business research center whose focus is to use research to solve small business problems or identify strategies for business development.

In the state of Washington, therefore, we have in place a small business assistance infrastructure capable of delivering general business development services enhanced by special programs to serve critical innovation and technology markets.

As pointed out by Mr. Higgins in his paper, with additional funding we can have the capability of developing and implementing a specific business development adjustment assistance program for defense dependent firms. This program would include the following elements:

1. <u>The Development of Preliminary Information on Potential Area or Company Impact</u>: SBDC will examine proposed base closings and reductions in procurement to determine the probable impact on the impacted area's small firms.

2. <u>Development of Parameters of the Adjustment Program</u>: The SBDC will identify other adjustment program providers to assure non duplication of effort and to insure the program is designed to complement other assistance being offered.

3. Outreach to Advise Small Firms of Assistance Available: The SBDC in cooperation with other state, local and private sector organizations, will organize a series of workshops and conferences to alert small and medium sized firms on the potential impact of base closings and defense procurement reductions. Time at the workshops will be committed to familiarizing participants with the range of services available to assist them.

4. Individualized Assistance to Small and Medium Sized Firms for the Development of a Business Adjustment Strategy:

SBDC will assist firms to

1. Determine impact on an existing firm's markets, products and services;

2. Assess other market/product opportunities;

3. Determine the potential for innovation or diversification;

4. Develop accurate projections for market development;

5. Identify sources of financing;

6. Link the firm with other organizations who can provide assistance; and,

7. Provide assistance as well as linkages to other programs for displaced individuals considering starting their own business.

At both the national level and the state level, SBDCs are well positioned to contribute to a defense conversion program aimed at providing adjustment assistance to defense dependent firms. We look forward to the opportunity to work with the Department of Defense's Defense Conversion Committee to solve the problems created by new mandates for defense.

Wharton
Wharton School of the University of Pennsylvania

Pennsylvania Small Business Development Centers
A unit of the Sol C. Snider Entrepreneurial Center

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3733 Spruce Street
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Tel: (215) 898-1219
FAX: (215) 573-2135

Gregory L. Higgins, Jr.
State Director

SMALL BUSINESS DEVELOPMENT CENTERS ADJUSTMENT ASSISTANCE PROGRAM FOR DEFENSE DEPENDENT FIRMS

Section 1 - Program Justification and Outline

I. Background

With the projected reductions in defense procurement and the military base closings, many small firms will face or are already facing a difficult period of adjustment.

Evidence from base closings suggests, in addition to losses in civilian employment on the base itself, a large number of firms in the area will experience significant decreases in earnings and in employment. While the evidence also suggests recovery over the long-run, many small firms lack the financial or the management resources necessary to survive the loss of a significant segment of their market during the adjustment period.

In terms of reduction in defense procurement, many small manufacturing firms are especially vulnerable since they have depended very heavily or exclusively on the Defense Department as the market for their products.

The impact of the closing of 34 bases and reduction of facilities in 48 additional locations combined with the reductions in procurement and an already difficult economic period, create a very dangerous environment for many small firms to survive and to prosper. This adjustment calls for a national program to assist smaller firms. Fortunately, the SBDCs represent a nationwide system capable of providing such assistance.

To adjust successfully, small firms will have to evaluate realistically the impact on their markets and determine if additional customers/markets or new products and services will have to be developed in order to generate sufficient revenue to maintain the viability of the enterprise. These small firms must conduct

the business, strategic, and financial planning necessary to construct a successful adjustment strategy.

While large firms most often have the financial resources or the in-house expertise to develop and analyze information required for these strategic decisions, most small and medium sized firms do not. It is also quite likely that many, if not most, do not have the resources to buy that expertise.

II. SBDC Capacity

A. Geographic Distribution and Basic Business Development Assistance

With over 600 offices in every state, Puerto Rico, the Virgin Islands, and the District of Columbia, the Small Business Development Centers, on a daily basis, assist small firms to obtain the required information, to incorporate this information in their management decisions, and to build the management capacity of the business owners. Annually, the SBDCs provide training and consulting to over 350,000 firms and individuals around the United States. The SBDCs represent the only national network providing the information and technical assistance needs of this key sector of the economy.

B. Special Capabilities

In addition to the general capability to assist firms with their information and management requirements, SBDCs also operate programs which can help to turn this necessary readjustment into a proactive program.

1. Non-Defense Procurement

For example, many SBDCs operate procurement assistance programs providing information, not simply on defense procurement, but also on federal procurements by non-defense agencies, state and local governments as well as the private sector. These programs frequently operate computerized systems matching company capabilities with procurement opportunities on a weekly or even daily basis.

2. Export Market Opportunities

Many, if not most, SBDCs have capacity to provide information on foreign market opportunities and some also operate computerized systems to provide this information on a regular basis. SBDCs also assist firms to develop strategy and financing for market entry, and to understand the technicalities of the export process.

3. Product Development

Some SBDCs operate programs to assist firms with the engineering and testing required for development of new products or processes. The university setting of most SBDCs frequently allows easy and inexpensive access to expertise in engineering and the hard sciences.

4. Technology Transfer and Commercialization

Again, many centers have the capacity to assist firms in the assessment of technology and in the evaluation of commercial potential.

5. Linkage with Other Resources

While many SBDCs do not at present have capability in all the areas described, they participate in a network of economic, technology and trade development organizations and often act as referral agents. SBDCs, in this context, can assist firms to identify and utilize other appropriate state and federal resources.

III. Outline of SBDC Adjustment Assistance Program

A. DEVELOPMENT OF PRELIMINARY INFORMATION ON POTENTIAL AREA OR COMPANY IMPACT: SBDC will examine proposed base closings and reductions in procurement to determine the probable impact on small firms in the state or service region. Since the type of action will affect different types of firms and sectors of the economy very differently, adjustment programs will have to be tailored to meet the varied circumstances.

B. DEVELOPMENT OF PARAMETERS OF ADJUSTMENT PROGRAM: since it is quite likely other governmental organizations will be involved in responding to the potential impact, the SBDC will identify those organizations and their proposed responses and will design their programs to complement other assistance being offered.

C. OUTREACH TO ADVISE SMALL FIRMS OF ASSISTANCE AVAILABLE: in cooperation with other state, local and private sector organizations, the SBDCs will organize and market a series of workshops and conferences to alert small and medium sized firms on the potential adverse impact of base closings and defense procurement reductions. These workshops will also be designed to impart information on the necessity for individual company adjustment strategies.

D. INDIVIDUALIZED ASSISTANCE IN DEVELOPMENT OF BUSINESS ADJUSTMENT STRATEGY. SBDCs will assist firms:

1. To determine probable impact on the market for the firm's products and services;

2. To determine if alternative markets or customers can be identified. These might include, foreign markets, non-defense federal procurement, local or state government procurement or private sector procurement;

3. To determine if their production processes are such that new products or services might be developed:

   a) through internal development; or
   b) by transferring technology from federal labs, universities, or private sector;.

4. To determine markets for new products or processes and to design a strategy for entering those markets;

5. To develop accurate projections on the work associated with product development and/or entry into new markets;

6. To identify sources of financing to cover the costs for the adjustment strategy; and

7. To link the firm with those other institutions to assist in implementation of the strategy.

IV. Program Evaluation

The SBDCs already have systems in place to evaluate client acceptance and economic impact of their programs, these would be modified to specifically measure success against the objectives of the adjustment program.

Section 2 - Implementation Process

I. Assumptions

A. The role of the Small Business Development Center is to work with owners of small businesses to assist them to evaluate the impact or potential impact, and to develop and implement realistic strategies for mitigating that impact. While the Small Business Development Center will coordinate its activities of local and state agencies as they relate to employee retraining and industry recruitment, its focus must be on the owners or potential owners of small and medium sized firms.

B. Substantial potential impact in terms of numbers of businesses likely to be affected must be demonstrated for Small Business Development Centers to participate in this program. In calculating impact the SBDCs will consider not simply base employment and prime contractors and subcontractors but also those businesses with markets dependent upon the employees of those entities.

Because the type of assistance is similar to that already offered by the Small Business Development Centers, it is assumed that unless a relatively large number of firms are significantly affected (for planning purposes utilize 300) the adjustment assistance will be provided within the basic program.

C. To be effective, the program must be proactive rather than reactive. That is, the evaluation and development of strategy for adjustment should precede the reduction in expenditure or base closing.

D. The State Small Business Development Center will be the applicant for assistance. In this manner, administrative costs can be spread across the entire network and savings will be realized.

E. Since the purpose of this program is to provide assistance in states in which a substantial number of businesses have been affected, the minimum size of the grant will be sufficient to employ an adjustment team having, at a minimum, marketing, productivity, and business planning expertise. The minimum grant would be $150,000 to the equivalent of 2 professionals, 1 secretary, and expenses.

F. Since this program will benefit from the other resources employed by the Small Business Development Centers, and because the Small Business Development Centers are

already providing match to generate those resources, no matching funds will be required.

II. Application Process

A. The Small Business Development Center will prepare an application describing the number of potentially impacted firms and an estimate of the magnitude of the impact.

B. The application will describe related adjustment and other economic development programs and the Small Business Development Centers intended relationships with these programs.

C. The Small Business Development Center will describe sectoral characteristics of the affected businesses (e.g. defense dependent manufacturers make up 20 percent of the affected businesses).

D. Based upon characteristics of affected businesses, the Small Business Development Center will describe its strategy for:

1) outreach
2) types of assistance to be offered
3) structure of assistance (e.g. workshops, one-on-one consulting, computerized access to market information, other specialized assistance)

E. The Small Business Development Center will describe the staffing of the adjustment assistance program and how that program is integrated into the other services and activities of the SBDC.

F. An evaluation system will be described as a part of the application process.

III. Funding Required

According to the Office of Technology Assessment's study After the Cold War: Living with Lower Defense Spending while fairly good estimates can be made on the impact of base closings, for the impact of cutbacks in weapons programs "...the data needed are scattered and inadequate." In that context, if one combines data on the studies of most defense dependent states, (Table 6-2) and the military base closings and realignments with the greatest economic impacts (Table 6-7) a total of 27 states will potentially experience a significant economic impact. Due to the inability to accurately locate all significant subcontracting activities and the adjacent state effects, it is likely the numbers of states with significant impacts will be at lease 32.

Assuming three states will require minimal funding ($150,000), ten states will receive the maximum permissible ($1,500,000) and the remaining 19 will receive an average of $800,000. The program, if all states were involved simultaneously, would cost $30,650,000 per year.

Since this program must be proactive and since benefits to companies in terms of their competitiveness (identification of additional markets and products) will occur even if the reductions do not materialize, it is recommended the program be funded at $30,000,000 per year for a four year period.

TESTIMONY OF KING COUNTY COUNCILWOMAN CYNTHIA SULLIVAN

before the

DEPARTMENT OF DEFENSE DEFENSE CONVERSION COMMISSION

Mr. David Berteau, Chair

September 24, 1992

Introduction

Chairman Berteau and members of the Defense Conversion Commission, welcome to Seattle and thank you for this opportunity to speak to you today. I am King County Councilwoman Cynthia Sullivan and I would like to address some of the concerns here in our community.

Local Background

I am sure you know that among defense related contractors in this region, the Boeing Company is far and away the largest in both King County and the State of Washington. The 1991 Report for the King County Economic Development Department written by the Northwest Policy Center of the graduate School of Public Affairs at the University of Washington reports that in 1991 Boeing accounted for 86% ($ 3,403 million out of a total of $ 3,955 million) of the Military Contract Revenue in King County, but only for 60% (44,574 employees out of 73,655 total employees) of the direct, indirect and induced employment related to these revenues. Boeing itself accounted for 22,512 employees in King County.

With the conversion of the defense budget, large firms such as Boeing can more readily reduce their work forces. These ex-employees can be easily identified, located and, where appropriate, be provided with any assistance required to transition into new employment or careers. The smaller firms with employees whose job are indirectly related to or induced by military contract revenue will have a significantly harder time making these same adjustments. Small firms that reduce employment by one, two or even ten employees will be

significantly more difficult to directly identify with a reduction in defense related contracts, but the individual employee who is let go will still have the same need of re-employment, training, counseling and other services. These individuals will just be more difficult to locate and therefore less likely to receive any assistance.

Worker dislocations in King County in 1992 are expected to be a minimum of 5,500 and this does not include the more than 7,000 workers who have been given notice by Boeing. A specific example is the recent closure of the Frederick and Nelson Company. Of the 1,400 employees who lost their jobs, approximately 600 or 43% applied for retraining to move into other jobs. A special grant was obtained for this re-training, but even the $800,000 obtained will only provide for 220 of these individuals. If future lost jobs also have this same re-training need (40% of those losing their jobs) we must be prepared to find ways to provide job re-training. The $3,500 to $4,000 per individual for this training is also reflected in the Economic, Dislocated and Worker Adjustment Assistance ACT (EDWAAA) 1992 grant which will train 150 workers with a total of $503,000. These figures for training do not include other forms of assistance these unemployed workers may require during training, which can last anywhere from three or four months to as long as two years.

Community Needs

The EDWAAA grant which I discussed above was received in June of 1992 and before the end of August all funds had been committed. Anyone needing assistance under EDWAAA after August is put on a waiting list and if there is any additional funding forthcoming they might then be able to receive the necessary training. This shortfall in funding leaves the community with a large corp of individuals who are in need of training in order to find employment. The number of individuals requiring training could be as high as 2,200, not including any Boeing layoffs, and presently within the County we have the financing for training of

350 individuals. There is a large gap which would only grow larger without significant resources being added with any revision in defense related contracting in King County.

Institutional Constraints

There are two constraints which I want to discuss. the first is a local one. The available training slots in local institutions are even now oversubscribed. These institutions do not have the capital resources available to add any new positions and would need assistance to do so. The second constraint is an international one, but could be equally important in making defense conversion more difficult on King County and other impacted communities. The North American Free Trade Agreement (NAFTA), when it goes into effect, will prohibit offset practices and other discriminatory buy-national (Buy American) requirements. If under NAFTA Federal dollars could not be channeled to impacted areas there would be limited means of assisting impacted businesses with their conversion from defense contracting. The consumer power of government is a powerful domestic tool which NAFTA seems to give away in exchange for the vague hopes of expanded trade opportunities. I am not sure that King County or other effected communities can afford this.

Recommendations

I would like to recommend to this Commission that it includes not just the necessary retraining funds for those who lose their employment due to defense conversion, but that they also include funding for all of the necessary services which are needed for these individuals. While unemployment insurance might last for six or even be extended for as many as nine months, some training programs take up to two years. I also hope that your recommendations will include working through existing agencies in the impacted communities, not establishing a parallel bureaucracy to deal with defense conversion displaced workers. In King County we have agencies already working with displaced workers and assisting business who are impacted for other reasons. These

agencies can provide the assistance needed if given the proper resources, I urge you to use them.

Again, I want to thank all of you for this opportunity today.

NorthWest Research Associates, Inc.
P.O. Box 3027 • Bellevue, WA 98009

23 September 1992

Defense Conversion Commission
Suite 310
1825 K St. NW
Washington, DC 20006

Dear Commission Members:

I look forward, tomorrow morning, to meeting with you in a roundtable format, as co-chair of the Washington State Advisory Committee on Community Diversification. Because I will have that opportunity and because your time for public testimony in Seattle no doubt will be in high demand, I have decided not to request time for oral testimony. Instead, by means of this letter, I accept your invitation for written testimony as a means for presenting my more personal perspective as president of a small business (30 employees) that traditionally has been heavily involved in contracting its services to DoD.

Introduction

Our company performs research in the physical sciences -- primarily in geophysical fluid dynamics -- and provides related technical services. In 1989, our business grossed $3.2M, about 3/4 derived from DoD contracts. With the onset of the defense buildown, revenues dropped to $2.5M in 1990 and '91. By careful management, primarily reduction in external subcontracting, we have been able to maintain our employment base except for layoff of one PhD researcher and decrease of support staff by one through attrition. In 1992, our revenues should once again approximate $3M, with about 1/3 now derived from non-DoD sources. Clearly we need to diversify and convert to a much greater degree.

.I believe the foregoing experience to be quantitatively less traumatic than the norm among small DoD contractors, but I also believe it to be qualitatively fairly typical. That is, we have minimized direct layoffs by passing the burden of decreased revenues on to subcontractors as much as possible. In my work on the above-mentioned state committee, I have interacted with owners of small companies engaged primarily in subcontracting -- notably, machine shops that traditionally have served Boeing. Through my own corporate experience and, more particularly, through my interaction with them, I know first hand the economic dislocation presently occurring due to the buildown. Based on that experience, and hopefully based also on a somewhat broader national perspective, I offer the following thoughts for your consideration.

Observations and a General Recommendation

I perceive three identifiable responses to the dislocation. First, some defense contractors and their Congressional champions seek to hunker down and delay spending cuts (e.g., Seawolf submarine). While quite understandable in human terms, this reaction clearly is uneconomic

from the viewpoint of the nation at large. The related phenomenon of seeking to increase arms exports is, in my view, not merely uneconomic but potentially extremely dangerous to our national security in an era of unsettled international politics. While both survival of some companies and re-election of some politicians may seem to argue for this latter twist, I assert that its promotion for such purposes betrays substantial deficiency of conscience.

The second, more productive, response has been the attention given to dual-use technology. I concur with the current fairly broad consensus that dual-use thinking is moving us in the right direction, but I believe it to be too narrow in focus. It retains Cold War thinking, since it places defense technology in a still-hallowed position. It also is intertwined with a partial red herring -- "competitiveness." Of course the U.S. must compete in a global economy, but the steps needed do not scale linearly or simply from those of individual companies. An economy as deep and broad as that of the U.S. can be strengthened by focused attention on domestic needs as well. I believe that attempts at direct extrapolation through consideration only of "commercialization" will lead to

> (a) a game of catch-up (replete with copy-cat "competition") behind Japan, Germany, Singapore, and others who have developed broader industrial policies; coupled with
>
> (b) counter-productive government meddling in decisions that should be made in the private sector -- e.g., gambling on which consumer products will be winners. (Are we really convinced the public needs high-resolution TV? If so, why won't the free market take care of that need?)

The third approach, which I urge you to consider carefully, is redirection of defense-derived economic assets toward solving large-scale problems in which the federal government has a legitimate interest. Appropriate global and national needs of the coming generation are quite clear. Among others, they include environmental understanding and restoration, modernizing of education, and attention to neglected infrastructure. It seems sensible to me to combat the economic dislocation stemming from defense buildown by redirecting our enormous defense-based technological strengths toward such productive ends.

We seem to persist in denying that the U.S. has an industrial policy. Yet it is clear that we have had one for at least 50 years, and it has produced the world's most successful military-industrial-academic complex. One may or may not believe that the nation should have paid more heed to President Eisenhower's warning in this regard. The present fact is that this complex represents an enormous technological asset. I urge you to recommend incorporation into our national conversion strategy the sensible step of partially redirecting that existing economic strength coherently. I urge refocusing it in part on the large-scale problems of our day, many of which are not directly amenable to total solution in consumer-driven open markets. Elements of such redirection are outlined in the last chapter of the detailed study by Markusen and Yudken (1992)*, of Rutgers University, which I commend to your attention. Dual-use thinking appropriately focuses on commercialization; also needed is a broader vision focused on identified societal needs and interests.

---

*Markusen, Ann and Joel Yudken, *Dismantling the Cold War Economy*, Basic Books (A Division of Harper Collins), 1992.

Response by Industry

A Speculation:

If Congress and the Administration were to provide a reasonably coherent roadmap, industry soon would march toward the vision. One often hears defense manufacturers assert that they "tried diversification into civilian products, but it didn't work." In Washington State, examples often given include Boeing's attempts during the late 70s and early 80s to produce mass-transit vehicles and power-generating windmills. There may be several factors that contributed to its lack of success, but I think there is one over-riding one. Consider the behavior of its primary customer/financier in these ventures. The same government that virtually guaranteed a market for military aircraft for the better part of 50 years abandoned an economic and environmentally sensible energy policy after about four years.

Examples from One Small Company:

Not only large companies could contribute to a revitalized technology-based economy redirected at real societal needs. So could small ones such as ours. In NWRA's own efforts to diversify and convert, we have undertaken three initiatives, recently submitted one proposal, and are attempting to develop other ideas. They include the following:

(1) A desktop-computer-based program ("Dicer") for visualizing truly three-dimensional databases in a variety of applications, including medicine and other sciences;

(2) A second visualization program ("F-Sharp") that we may commercialize, stemming directly from work for the Air Force;

(3) Lines of research directed at understanding dynamical properties of the stratosphere and mesosphere related to ozone depletion and global change;

(4) Development of a solar/geophysical observatory and database for widespread shared use in teaching fundamental concepts and the nature of scientific inquiry in secondary schools;

(5) Potential application of vortex-reduction techniques developed for the Navy to identified needs in civilian aviation.

Dicer is our first open-market product, developed under a Small Business Innovation Research (SBIR) Contract from the National Science Foundation (NSF), with Apple Computer as our Phase III partner. Our capability to develop it evolved from our own need for tools in visualizing data we were analyzing for Navy and Air Force applications. F-Sharp was developed under an SBIR Contract from the Air Force. Topic (3) stems from a previously existing capability in our company, which we have expanded in our attempts to diversify away from undue defense-dependence. Topic (4) is the subject of a proposal we've submitted to NSF, stemming directly from experience of one of our staff members as an Air Force officer. During his military career, he commanded a solar/geophysical observatory used by the Air Weather Service in assessing and predicting global radio-transmission conditions. Topic (5) involves on-going work that we're doing for the Navy and that we see as applicable to questions of airport capacity.

I present the foregoing merely as examples of directions in which one small company is attempting to go on its particular path toward diversification. They also illustrate how intertwined those directions are, not only with the open market, but more particularly with

societal needs in which the federal government has legitimate interest. The only directly related action I would urge you to take is to support continuation and expansion of the SBIR Program. I regard it as the singularly most successful effort the federal government has undertaken toward conversion and diversification of small defense-dependent firms, even if that was not its original intent.

A Final Concern

Related to the success of our defense-based industrial policy is the fact that basic research in this country now is heavily dependent on that policy. I fear that too narrow a focus on commercialization under the guise of "competitiveness" could seriously undermine the scientific strength we have developed. To illustrate the basis for that fear, I cite just two examples with which our company happens to have direct experience.

For many years, the Air Force has launched "rocketsondes" that carry atmospheric sensors through the troposphere and stratosphere and well into the mesosphere. They are launched to provide assessment and permit prediction of operational flight conditions, but the data they return have been very valuable for civilian research as well.

As you no doubt are aware, currently pressing scientific questions center around the existence or lack thereof of global warming in the troposphere. Such warming is difficult to detect and should be accompanied by cooling at higher altitudes. Researchers at the National Oceanic and Atmospheric Administration (NOAA) of the Commerce Department have reported such cooling based on a few years of data from the rocketsonde network, but there has been question regarding possible confusion with variations in radiative output from the sun. Researchers at our company, working under a NOAA contract, now have performed painstaking analysis of a longer span of rocketsonde data, and we believe they have been able to sort out the solar effects, revealing a clear cooling trend.

I must issue a caveat regarding the foregoing statement, since the NWRA research I've quoted has not yet undergone peer review. The point I want to make is that the rocketsonde database is highly valuable to research on important questions of global change, and its continuity is vulnerable due to the defense buildown. For many years, there had been two to four rocketsonde launches per month from about 20 sites throughout the world, sometimes as many as ten per month. Presently, there are only sporadic shots from three or four sites, all in support of specific missions such as Space Shuttle flights. Just at the time when it may become crucial to continuous tracking of atmospheric temperature trends, continuity of the rocketsonde database is seriously threatened.

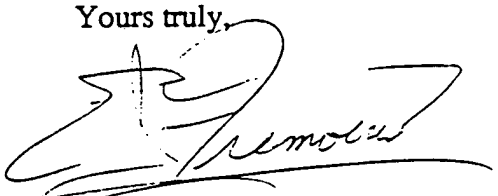
In my own research on the ionosphere (the upper reaches of the atmosphere, responsible for traditional shortwave communications and a disruptive influence on some satellite communications), a similar situation impends. A promising new technique for imaging ionospheric structures by means of radiowave tomography is very dependent upon signals transmitted from the Navy Navigation Satellite System, which is slated for operational demise in 1995 or '96.

My concern is that the utility of numerous DoD activities to non-military research on large-scale scientific questions may be overlooked in our national pre-occupation with "commercialization." My plea is that such activities, when found demonstrably useful, be

continued. This should be done either by DoD, when meeting a continuing bona fide defense need, or by transfer, together with sufficient budget, to NOAA, NASA or other appropriate civilian agencies or contractors thereof. I urge you to give serious consideration to such matters as you struggle with the important questions of conversion and economic diversification.

Thank you very much for your consideration and for the opportunity to meet with you tomorrow.

Yours truly,



Edward J. Fremouw
President

EJF2937l:nc

FREMOUW LETTER #2

NorthWest Research Associates, Inc.
P.O. Box 3027 • Bellevue, WA 98009

25 September 1992

Mr. David J. Berteau, Chairman
Defense Conversion Commission
Suite 310
1825 K St. NW
Washington, DC 20006

Sub: Conversion of basic research

Dear Mr. Berteau:

In Seattle yesterday morning, I stressed the widespread dependence of scientific research in the U.S. on DoD programs and operations and on defense funding. I appreciated your response to my point that too exclusive a focus on commercialization in conversion efforts could risk overlooking the nation's needs for a sustained level of basic research. I have written your Commission a letter expanding on my thoughts and concerns.

Today I noticed the enclosed article on p. 1 of *Eos*, the Transactions of the American Geophysical Union, dated 15 September (Vol 73, # 37). If the timing could be worked out, it seems to me that some interaction between the Conversion Commission and the Special Commission on the Future of NSF (highlighted on the enclosure) could be very useful in dealing with the foregoing point.

Again, thanks for your efforts and those of your Commission.

Yours truly,

Edward J. Fremouw
President

EJF2948L:kab

Encl.

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Director Urges NSF: Adapt to "New Order"

The National Science Foundation must respond to dramatic changes in world affairs and science by expanding its purview, or risk losing its vitality, agency director Walter Massey recently told NSF staff.

"I'm not sure we're making a difference, or the difference that the nation needs," Massey said in a recent interview. As he sees it, the current transformation in NSF's environment is as significant as the circumstances that led to the agency's founding. "I think it is imperative that NSF determine its place in this new order," he says.

Present strategic planning has the potential to shape NSF's role not just for years but for decades, Massey maintains. He has been elaborating his vision for NSF's future in recent speeches, using language that often closely echoes directions given the agency by the Senate Appropriations Committee in ıly.

A Special Commission on the Future of ıe National Science Foundation, now being appointed by the National Science Board from academia, industry, and government, will take a hard look at the agency's mission over the next few months. A key task of the board, which is the policy-making body for NSF, will be to suggest how the agency can better apply research to spur technological advances.

Massey is urging that NSF support a broader array of research as well as strengthen ties to industry and other government agencies. He also calls for more interdisciplinary research and greater integration of education and human resource activities across the agency.

The commission will doubtless consider the argument by Massey, National Academy of Sciences president Frank Press, and others that the margins between basic and applied research are increasingly breaking down in many fields. "Scientific advances and technological progress have become ever more dependent on each other," Massey said, pointing out that biotechnology, for example, could not advance at its present rate without improved instrumentation. Since investments in research yield technological dividends more quickly than in the past, NSF must identify and support specific areas here this occurs, he said.

Does the transformation Massey envisions mean that NSF will shift its focus to research with clear practical results? The director argues that his changes will actually strengthen NSF's support for academic research, its traditional agenda. The agency already funds individual scientists and small groups, as well as larger centers, that work with industry, he points out. But while NSF will not limit itself to targeting research with great economic potential, he acknowledges that "it's going to be very difficult to discuss these issues and reassure people." Nonetheless, he says that one of his goals is to demonstrate more broadly how public investment in research and education pays off. "We can make a new case to the American public to support individual investigators," he says, thereby bolstering the agency's longtime mission.

In line with Massey's aim to expand NSF's leadership and strengthen links to other federal agencies, the director notes that NSF has already deepened working relations with the Department of Education, the National Institutes of Health, and the Defense Advanced Research Projects Agency. The foundation will also now begin to work more closely with the National Institute of Standards and Technology, he said.

Another aspect of NSF's evolution is its expanding support for education, which some scientists view as a threat to their research money. But education ventures are actually becoming more intertwined with research funding at the agency. "This coupling must be extended to meet the increased science and technology demands of the workplace," Massey says. Exemplifying these linkages are NSF's growing program to support undergraduate research, on-campus teaching/learning centers to design programs for future teachers, and agency support for minority-industry programs—none of which should be seen as competing with research, Massey argues. He expresses "very little sympathy" for scientists who worry only about their own research funds. "Nothing I say will be good news to them," he notes.

With NSF facing a no-growth budget next year, after years of hefty increases, Massey's plans for the agency may seen doubly ambitious. But the director maintains that immediate budgetary woes should not distract from charting NSF's long-term course. If the agency can make a case for expanding its role, he says, it will then receive the budgetary resources to carry it out.

How does Massey assess support for the geosciences within NSF? The area has done very well over the past few years compared to other sectors, he says, because of successful long-range planning, exemplified by the Global Change Program. This effort is now proposed to "graduate" from its current status as a presidential budget initiative to a national research program next year.

The 15-member NSB commission will provide an outside 'validity check" on the direction NSF wants to take, Massey said. The commission will hold three open meetings at NSF (September 17, October 16, and November 7, from 8:30 a.m.–5:00 p.m.) to examine the agency's future. The commission solicits public comments on two issues: how NSF can enhance the health of the U.S. academic system, and whether—and how—it should broaden its traditional mission and work to forge stronger ties between academia and industry. Comments should be mailed or faxed by October 15 to the NSB Commission on the Future of NSF, Room 546, NSF, 1800 G St., N.W., Washington, DC 20550; fax 202-357-7346; e-mail: NSBCOMM[@]NSF.GOV (Internet) or NSBCOMM[@]NSF (Bitnet).

NSF will accept comments even while the board is considering the commission's recommendations. The board is then to develop detailed guidelines to implement the changes. If the process goes well, Massey says, some prototype programs will be included in the fiscal year 1994 budget.—*Lynn Teo Simarski*

TAMSCO®

TESTIMONY RECEIVED AT K-STREET DURING SEATTLE HEARING

25 September 1992
DoD Conversion Commission

Testimony of
Nicholas R. Innerbichler

Mr. Chairman and Members of the Committee, my name is Nicholas R. Innerbichler. I am President of Technical and Management Services Corporation (TAMSCO). I appreciate the opportunity to appear here in Washington, D.C. at your headquarters in lieu of attending the public hearing held yesterday in Seattle. I understand the Commission is reviewing the impact of reduced defense spending upon the economy and exploring the potential for assisting personnel leaving DoD as well as companies facing reduced production.

I came here today to testify about the impact reductions within DoD are having upon my company, and to recommend alternative measures that will preserve the very competent base of small and disadvantaged businesses (SDB) like TAMSCO that support our federal procurement process. Even in the face of severely reduced DoD spending, small and disadvantaged businesses should not be sacrificed in the interest of sustaining larger businesses.

First I would like to acquaint you with TAMSCO.

TAMSCO is a small and disadvantaged, minority-owned business certified by the Small Business Administration (SBA) under the 8(a) program. Approximately 60% of our total business base, and all of our manufacturing base, consists of prime contracts with various agencies of the DoD or subcontracts with other primes to the DoD. TAMSCO employs 475 persons. Products and professional services include:

a) the manufacture of electronic assemblies and subassemblies such as stabilization control amplifiers, power supplies, test sets, circuit card assemblies, cables and wiring harnesses, and other mechanical and electronic equipment traditionally procured by DoD;
b) the design, development, production and installation of highly complex ADP and telecommunications systems;
c) systems engineering and integration;
d) integrated logistics support of fielded systems;
e) electronic production of state-of-the art technical publications and graphics; and,
f) quality assurance, configuration management, and program management services.

TECHNICAL AND MANAGEMENT SERVICES CORPORATION
4041 Powder Mill Road Suite 500 Calverton, MD 20705 (301) 595-0710

The corporate office is located in Calverton, Maryland. Operations other than manufacturing are located on the east coast. Our manufacturing division is located in Lake County, Montana. Lake County is designated by the federal government under the Small Business Act as a Labor Surplus Area. As such, the government is particularly interested in developing contracting opportunities to employ that labor force.

Production capabilities, facilities, equipment and products are more fully described in a brochure which I would like to leave with you. I can provide more copies should you desire.

IMPACT OF REDUCED DOD SPENDING UPON TAMSCO

Reductions within DoD follow a succession of unprecedented events that have devastated the small business community. Although we must be pleased with the falling of the Berlin Wall and the cessation of the both the Gulf War and the Cold War, reduced DoD spending:

- undermines the primary source of contract opportunities for 8(a) firms: DoD has provided over 90% of 8(a) contract opportunities to date;

- follows a period where requirements targeted for set aside for small and disadvantaged businesses were converted to sole source procurements from the original equipment manufacturers (OEM) due to the national urgency imposed by Desert Storm Operations; that work has not been returned to small and disadvantaged businesses;

- stimulates greater contention for less work as small and disadvantaged firms now compete with large business for work traditionally set aside for small and disadvantaged concerns;

- comes at a time of recession for firms engaged in professional services as well as manufacturing, and when access to working capital for small business is very severely curtailed due to problems with the banking industry;

- exacerbates the situation faced daily by 8(a) companies where well-intended technical representatives and contracting officers return to the original equipment manufacturer regardless of federal mandates to the contrary and in spite of our proven performance.

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TAMSCO now concentrates on survival rather than SBA approved business development plans and graduation from the 8(a) program. Business plans were in large part based on expanding alliances with large DoD primes such as those listed in the aforementioned brochure. The business base and infrastructure we have developed over the past several years is so easily eroded. The manner in which DoD has reduced its spending and proposes to do so in the future further aggravates the economic struggle we face. We have not been able to fill contract ceilings on existing contracts. Reduced revenue hinders development. Manufacturing, systems development and integration objectives are no longer attainable during the remainder of our participation in the 8(a) program. Our very best customers are not able to determine what or when they are going to buy.

Orders on existing contracts have been reduced. Examples of this include:

a) We have operated the plant in Polson, MT, since February of 1987 at roughly 40 to 60% of capacity. In July 1991 we secured our largest manufacturing contract, $5.4M over 30 months, to manufacture spare parts with a major prime as our subcontractor. This opportunity took two years to bring to fruition. On 14 September 1992, we were asked by that customer to reduce quantities to 41% of the contracted amount.

b) We won a competition set aside for SDB concerns for a 5-year, $25M, Indefinite-Delivery Indefinite Quantity (IDIQ) type contract to provide integrated logistic support services. The award was delayed two years due to protests. We were required to propose to the government's best estimate of 192,000 man-hours of effort each year for five years. The contract was initially awarded to us in January 1991 and terminated for convenience due to protests shortly thereafter. After another round of best and final offers and enduring $250K in defending ourselves and the procuring agency through four protests, we were awarded the contract a second time on 12 February 1992. Nearly nine months into the first year, we operate at less than 8% of the level bargained for.

c) We are a subcontractor to a large business on another 5-year IDIQ contract for integrated logistic support services with a different customer. Together with the prime, we operate at less than 10% of the level bargained for, nearly one year after the bargain was struck.

d) In the third year of yet another subcontract to a large business for integrated logistic support services, we operate at less than 15% of the level bargained for.

e) For the past two years, manufacturing orders on an 8(a), 5-year IDIQ contract have been less than 1% of amounts projected and incorporated in pricing projections.

Procurements have been canceled or delayed. During FY91 and FY92, 30 procurement opportunities on which TAMSCO bid were subsequently canceled. 15 had been set aside for

competition either for small business, small and disadvantaged business, or 8(a) firms. One had been negotiated by the PCO following a DCAA audit. In at least one case we know of, follow-on production work for the Navy was delayed nearly one year. In other cases, options have expired or have been extended by mutual consent.

Reorganization limits versatility of 5-year IDIQ contract. Through consolidation, reorganization and decentralization, one customer has severely limited access to buying activities on this major, 8(a) manufacturing contracting vehicle.

Work is returned to government depot. On one contract, the Navy has started to retain work in-house on test set cables and adapters instead of exercising options with us, yet pricing of options had been included in the evaluation criteria on the small business competition. On another contract, the Navy changed an Indefinite-Delivery Requirements type contract for refurbishing test sets to an IDIQ type contract in order to retain work in-house. Under the Requirements contract, the customer was obligated to obtain all requirements for the refurbishing of the specified test set from TAMSCO and pricing had been established on that basis. This is happening while other agencies are taking action to privatize depot level maintenance and support.

Work performed successfully by TAMSCO is returned to the OEM. Notwithstanding regulations establishing a 5% SDB and a 20% small business goal within DoD which have never been attained, and regulations requiring the repetitive set aside of work performed successfully by small and disadvantaged businesses, officials who undoubtedly should know better continue to target follow-on production for sole source procurement from the OEM! Three examples are relevant.

a) In the first case, we invested more then $300K in constructing automated test equipment peculiar to the product which we intended to amortize over anticipated requirements. This is our most sophisticated product and we build it at roughly one-third the cost of the OEM. And yet after delivering 70 units and while still completing production of the remaining 31 units, the same procuring command was processing a sole source award back to the OEM! We had been monitoring the requirement for more than two years. It originated with the Navy and procurement was later delegated to the very Army command with which we were under contract to build 101 units. After considerable effort by TAMSCO and the SBA, the command decided to award 127 units to TAMSCO on a letter contract. However, the command also let a letter contract to the OEM for 50 units with an option for 40 units, claiming that it was part of a complete systems buy rather than a purchase of individual units. Our unsolicited bids to the OEM were not acted on and the OEM has no intention of subcontracting that effort to TAMSCO.

b) On another contract that has been operating at less than 30% of negotiated levels for each of the last four years, the command insisted on returning production of technical manuals on modern aircraft to the OEM in spite of our proven performance on the same work at 60% of the OEM cost; in spite of the FMS customers' preference for TAMSCO; and in spite of the fact that TAMSCO provides the manuals in magnetic media to facilitate subsequent updates by the customer as the configuration changes over time, whereas the OEM would not. This still is very sensitive politically. However, action by TAMSCO convinced the procuring agency to award the follow-on work on the existing contract.

c) Senior procurement officials openly debate the value of small business and build-to-print operations as a viable element of spare parts acquisition. Under the guise of a cost-saving measure, some propose eliminating the requirement that OEMs provide technical data packages for systems developed under contract; this would surely kill small business participation and build-to-print. Others see right through this and recommend the OEM deliver the engineering data and technical drawing package actually used by the OEM in producing the item. Please refer to letters originated by David K. Wilson, Supervisory Procurement Center Representative, U.S. Army Missile Command, Redstone Arsenal, Alabama dated September 10, 1992; April 20, 1992; and November 14, 1991; copies attached. Failure to secure adequate technical data packages will return work performed by small and disadvantaged business to the OEMs and toll the death knell for those small and disadvantaged business. This in turn will lead to the disenfranchisement of a very productive element of our population, continued economic disparity, and civil unrest.

Reduced DoD spending frustrates Breakout Program. It is important to understand that when combined with the visceral instincts of technical personnel involved in procurement, reduced DoD spending counteracts the entire breakout program. Contrary to public mandates, technical representatives are reluctant to identify work that can be performed by small business concerns and to reduce OEM participation to the work that can be performed best by that OEM, given cost, technical risk, quality and other public considerations. This is evidenced in a number of ways, some of which have been discussed above, in regard to technical data packages, subcontracting plans, DoD mandates for attaining contracting goals of 5% for SDBs and 20% for small businesses. You should also consider the manner in which agencies communicate procurement plans. Here I am referring to the Competition Advocates Shopping List, also known as CASL. I have attached a summary of the very first CASL we processed internally by computer. We were looking to use our computers to match our manufacturing capabilities with advertised procurement plans for our existing customer base before expanding to incorporate potential customers. We are qualified to build in excess of 200 items; this includes items we have already produced and all

items we have bid on. Normally a CASL is available in hard copy and frequently on electronic bulletin boards. We asked our customer to provide magnetic media which we converted for use on a Macintosh personal computer. We first generated a report that could be compared to the original to verify our operation. Then we began to search through the planned procurements. The results were shocking! Out of 5,419 planned procurements listed in the CASL and valued at $2 Billion in FY92 and nearly $1 Billion in FY93, not one was identified by the customer as suitable for first time breakout! Out of 231 procurements listed as suitable for competitive acquisition for the first time valued at $104 Million in FY92 and $35 Million in FY93, none had a technical data package suitable for full and open competition! This information would not have been apparent from the hard copy of the CASL or from on-line query via the electronic bulletin board but was readily determined from the magnetic media using Microsoft File. My conclusion: this customer intends to work with OEMs and is not interested in breakout programs for small business or even full and open competition.

Confusion on Procurement Integrity compounds impact of DoD reductions. 8(a) contracting has been hindered dramatically by confusion surrounding agency interpretations of potential conflicts between self-marketing aspects of the 8(a) program and the Procurement Integrity Act. During the confusion, and in apparent defiance of SBA correspondence clarifying responsibilities of SBA personnel, one of our customers conducted a criminal investigation of the Procurement Center Representative for matters entirely within his purview that were performed clearly within SBA guidelines. He was exonerated. Nonetheless, the experience nearly crushed the individual and certainly dimininshed our desire to develop further 8(a) business with that customer. [The investigation was not related to business with TAMSCO and the individual is is not the PCR who authored the attached correspondence.]

HOW TO PRESERVE SMALL AND DISADVANTAGED BUSINESSES AND 8(A) PARTICIPATION IN THE FEDERAL PROCUREMENT PROCESS

1. Support existing SBA programs and in particular, the 8(a) program.

2. Support pending reform legislation affecting 8(a) firms, H.R. 5732. While it is true that the recession has hurt many firms, 8(a) firms across the country have been hit hardest by the massive changes in DoD procurement plans brought about by the rapid, serendipitous decline of the Russian military threat. The Defense Department has been the most supportive of the federal agencies in terms of implementing an 8(a) procurement program. In fact, 90% of the 8(a) contract

dollars have come from the Department of Defense. Consequently, the sudden downturn has directly impacted the 8(a) business community.

The evidence of this devastation is everywhere. Earlier this year, Hughes Aircraft Company announced a restructuring and layoffs of 9,000 personnel. After acquiring the missile programs from General Dynamics, Hughes then announced an additional layoff of 4,000 personnel. Similar restructuring and layoffs were announced by Lockheed, General Dynamics, Westinghouse and Boeing. Last weekend, the Los Angeles Times reported Fortune 500 companies were currently laying off 2,200 employees per day. If these companies are experiencing such difficulties, imagine how a small, relatively young 8(a) company is faring. TAMSCO and other firms in the 8(a) community do not seek direct federal subsidies or assistance. Rather, we seek additional time in the form of a moratorium on graduations for 8(a) companies, and continued support for small and disadvantaged business programs. Additional time is needed:

- to allow the economy to turn around;
- for the DoD budget transformation to take shape;
- to allow TAMSCO and similar companies to develop new business plans that further diversify away from the Pentagon;
- to allow the federal government to adopt an active and meaningful minority business development program in all the agencies; and,
- time is needed to allow the Congress and the Administration to review and hopefully revamp the entire minority business development effort.

As a businessman, I know how important timing is to the success of all endeavors. One of the reasons I am here today is because I know that time is running out for many 8(a) companies, not just TAMSCO.

There is growing evidence and consensus that many of the reforms to the 8(a) program adopted by Congress in 1988 simply have not been effective. Both the General Accounting Office (GAO) and the Commission on Minority Business Development, established by the 1988 reform legislation, have recently detailed the many problems plaguing the SBA and the 8(a) program. According to both reviews, the SBA has been an ineffective champion for 8(a) companies.

For example, the SBA took up to two years after the 1988 legislative mandate to implement the regulations for 8(a) competitive acquisitions -- those anticipated to exceed $3 million for services or $5 million for manufacturing. During that two-year window, agencies issued almost no contracts over the competitive thresholds for fear of being subject to lawsuits or procedural complaints from either the SBA or losing firms. During 1990-1991, only 67 of the nearly 8,000 8(a) contracts awarded were competed! In other words, almost no contracts of a meaningful size were issued by any federal agency for two years, thus negating most of the additional program life granted by the reform legislation.

I ask for your support of very important legislation affecting 8(a) firms known as H.R. 5732, copy attached. H.R. 5732 proposes a 1-year moratorium on graduation of 8(a) firms. It protects many existing 8(a) companies from financial ruin while Congress and the Administration review the very important recommendations forwarded by the Commission on Minority Business Development in its final report.

3. Clarify the role of self-marketing under the 8(a) program and responsibilities under the Procurement Integrity Act.

4. Stimulate more effective subcontracting by major prime contractors.

a) Require SDB and SB subcontracting plans in evaluation of proposals.
   1) Specify in criteria section of RFP.
   2) Grant points for exceeding 5% SDB and 20% SB goals.
   3) Disqualify primes with plans below 5% for SDB and 20% for SB.

b) Enforce subcontracting plans.

5. Honor mandates within DoD agencies to contract directly with SDBs.

a) Preserve work performed by SDBs through repetitive set aside.

b) On system level buys, direct major primes to SDBs qualified at unit or box level.

c) Educate technical and procurement personnel on benefits of working with SDBs.

6. Maintain SB, SDB and build-to-print as integral part of procurement process.

a) Procure system development of major systems from major primes.

b) Get adequate technical data packages from OEMs.

c) The taxpayer is better served with lower overhead and better quality.

This concludes my testimony. I would like to thank you for this opportunity to discuss issues of primary interest to TAMSCO. The economic transition we face is particularly challenging during this time of recession. I appreciate the need for change and for balance within the procurement process. Please preserve a place for the small and disadvantaged businesses. We cannot perpetually disenfranchise a segment of the population without fostering the civil unrest that is traceable to underlying economic disparity. I would be pleased to respond to any questions you may have and I offer the assistance of my staff to further your objectives.

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