



Paradoxically, Post Cold War Conversion Without Leadership

Ann Markusen

Conversion takes gumption, a willingness to look for new solutions rather than stay mired in old problems, and it takes the vision to see beyond next month's bottom line or next week's paycheck to what could be in a year or two, even a decade or two.

— Virginia Nesmith, St Louis Economic Conversion Project (see p. 4)

Twenty-first century history books may well conclude that both the United States and the former Soviet nations had a difficult time dismantling their Cold War economies. Decades of high spending and the nurturing of defense complexes behind "walls of separation" from the civilian economy left both countries with formidable structural challenges. The fits and starts in Russia and Ukraine are well known. The slow, often choppy progress in the United States is less so.

Despite hopeful signs at the beginning of the 1990s, leadership to cut Cold War spending levels and weapons systems expeditiously to "right size" the U.S. defense industrial base has been woefully lacking. Presidents Bush and Clinton were quick to promote arms exports undercutting conventional arms control progress. Clinton's efforts to cut defense spending have been countermanded by a Republican Congress, which restored billions of white elephants to the budget and eliminated almost all conversion programs. Pentagon passivity toward mergers has undercut its dual use and conversion policies.

As a result, defense budgets remain unnecessarily high, talent stays locked in the defense sector and the United States is about to embark on a renewed conventional arms race where competition is mainly with itself. Nevertheless, despite poor leadership, a substantial amount of conversion is taking place.

Security strategy and defense budgets should be driven by an evaluation of contemporary threats to American security, which have subsided by orders of magnitude since the Cold War. Although in May the Defense Department's Quadrennial Review (QDR) recommended the cancellation of several high priced weapons systems, it appeared to be almost wholly budget-driven, retaining other Cold War weapons while arguing for new ones.

Military and civilian defense leaders continue to contend that the world is more dangerous than ever. Defense Secretary William Cohen, in his message accompanying the release of the QDR, warns that "new threats and dangers—harder to define and more difficult to track—have gathered on the horizon." But the QDR fails to make a compelling case for who the new enemies are or how the nation could best defend against them. It suggests that peacekeeping, urban terrorism and information warfare are apt to become increasingly important, but then it grandfathers in systems like the B-2 bomber and Seawolf submarine.

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Conversion of Lawrence Livermore National Laboratory: Goal or Distraction

Greg Mello

Lawrence Livermore National Laboratory (LLNL), located about 40 miles southeast of Oakland, California, is one of three nuclear weapons labs operated by the Department of Energy (DOE). The others are Los Alamos National Laboratory (LANL) and Sandia National Laboratory (SNL), both located in New Mexico. LLNL has been operated by the University of California since it was founded in 1953.

Livermore and Los Alamos both work on the "physics package," which contains about 5 percent of the overall number of parts in a typical nuclear weapon. Sandia handles the "weaponization" of that explosive, comprising the other 95 percent of parts.

LLNL has an annual budget of approximately \$1.0 billion with about 7,200 full-time staff and some 2,000 contract employees. Its defense mission directly

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The United States FY 1998 Defense Budget

Liesle Heeter and Steven Kosiak

The budget agreement between the president and Congress caps the fiscal year (FY) 1998 budget for national defense at \$268.2 billion, a 1 percent drop in real terms from the current FY 1997 budget.

Under this agreement, national defense would receive \$1.384 billion in budget authority (BA) over the FY 1998-FY 2002 period, an increase of \$4.2 billion from the administration's February budget proposal and \$17.1 billion more than Congress included in its 1996 plan. If fully implemented, the new plan would see defense budgets fall over the next three years by 3.3 percent in real terms, flatten out in FY 2001 and rise slightly in FY 2002, to a nominal \$289 billion, a 3 percent real decline compared to today's budget. This budget plan, which encompasses the Department of Defense (DOD), Department of Energy (DOE) defense activities and other departments' and agencies' defense-related activities, was approved by Congress in its June passage of the Congressional Budget Resolution (CBR).

Before the Quadrennial Defense Review (QDR), completed in May, DOD was facing a mismatch between its plans and projected funding of perhaps \$50 billion over the next five years, and \$10-20 billion annually over the longer term. The QDR proposed cuts in a number of major weapons programs, including all three of the Services' three new fighter programs. It also set forth modest cuts in force structure, reductions in the size of the national guard and reserves, and two new rounds of base closures. The QDR assumes, however, that DOD will achieve its most significant reductions in support, infrastructure costs, through outsourcing and other initiatives. Although such savings are possible and should certainly be pursued, the QDR probably banks too much on these savings, given congressional resistance to additional base closures and changes needed to allow greater outsourcing. Consequently, in the next few years, the administration and Congress will probably again be confronted with either having to boost defense spending or further scale back plans.

The House and Senate each passed FY 1998 defense authorization bills that would provide \$268.2 billion in national defense. This funding level is consistent with the CBR and about \$2.6 billion more than President Clinton's \$265.7 billion request submitted in February (prior to the budget agreement). The two authorization bills also trimmed the request for DOE defense-related activities by some \$2.5 billion. As a result, both houses were able to add over \$5 billion to the administration's FY 1998 request for DOD. Procurement and research and development (R&D) accounts received the bulk of this addition, while about \$700 million went to military construction and family housing.

While the defense authorization bill *authorizes the appropriation* of funding for defense, the defense, energy and water, military construction, and several other appropriations bills determine actual defense funding amounts. The cumulative total of the House- and Senate-passed appropriations bills would provide \$268.2 billion and \$267.4 billion, respectively, for defense.

Similar to the authorization bills, the House appropriations bills would shift \$2.6 billion and the Senate, \$1.8 billion, from DOE's defense activities to DOD's budget. Once again, most of the increase would go toward the R&D and procurement of new weapon systems: the House appropriations bill would add \$4 billion and the Senate, \$3 billion, in acquisition funding. Both bills would also add about \$800 million for military construction.

In September, Congress will reconcile the differences between the House and Senate versions of these bills. President Clinton has already threatened to veto the final authorization bill, scheduled for completion in mid-September. The two most problematic provisions are added funding for more B-2s and the deadline for withdrawing U.S. troops from Bosnia, both from the House authorization bill. By contrast, the appropriators, who are trying to meet a September 30th deadline (the end of the fiscal year), have generally eschewed veto-triggering provisions.

- The House authorization bill, as amended in a 278-148 vote, would require U.S. peacekeeping troops to leave Bosnia by June 30, 1998. The Senate bill language expressed a similar sentiment, but would not have the force of law. Clinton has threatened to veto the authorization bill if the House provision is retained.
- Both authorization bills rejected the administration's request for legislating two new rounds of base closures in 1999 and 2001. These closures were recommended in the May 1997 QDR as one in a series of steps to reduce DOD's overhead costs to free up additional funding for other programs such as weapons modernization.
- All four bills increase procurement funding. The House and Senate authorization bills would add \$3.7 billion and \$4.1 billion, respectively. By comparison, the House and Senate appropriations bills would add \$3.2 billion and \$2.9 billion, respectively. In all cases, this would result in the first real increase in the procurement funding since FY 1985.
- Funding for ballistic missile defense (BMD) programs would go up under all four bills. The administration requested \$2.581 billion in R&D funding for the Ballistic Missile Defense Organization (BMDO) plus \$385 million in BMD-related procurement funding to be provided to the services. The House authorization bill would add \$808 million and the Senate version, \$578 million, in R&D funding to BMDO's budget. In addition, both bills would shift procurement funding from the services' budgets back to BMDO, where it had been provided in the past. Similarly, the House appropriations bill would contain \$707 million more and the Senate, \$645 million more, in BMDO R&D funding. Both appropriations bills would similarly move BMD-related procurement funding back to BMDO. All four bills would add \$474 million for national missile defense programs and would boost funding for the Navy's Theater-Wide missile defense system. Scheduling delays and testing problems have caused the House appropriations bill and both Senate bills to recommend a cut the administration's request for the Theater High Altitude Area Defense (THAAD) program.

The House and Senate differ on a number of major weapons programs: B-2 bomber, the CVN-77, the next Nimitz-class nuclear carrier, F-22 tactical aircraft, New Attack Submarine, and F/A-18E/F.

B-2: The administration requested \$356 million for continued development of the B-2 and \$174 million for procurement, including \$22 million to shut down the production line after 21 planes are built. Both House bills would add \$281 million to re-establish portions of the B-2 production line and \$52 million as a down payment on acquiring another nine bombers. (An amendment to the appropriations bill to rescind this funding was rejected, 200-222.) The Senate authorizers, however, would cap production at 21 and prohibit funding for maintaining the B-2 industrial base.

CVN-77: The administration requested \$18 million in R&D funds for CVN-77, the last Nimitz-class aircraft carrier. Under the administration's current plan, CVN-77 would receive \$645 million in advance procurement funding (for long-lead items) in FY 2000 and the balance of \$4.5 billion would be provided in FY 2002. Both House bills would provide an additional \$17 million for CVN-77 R&D. By contrast, the two Senate bills would not only add \$17 million more for R&D, but also would provide an unrequested \$345 million in advance procurement funds for the carrier. By beginning construction of the carrier earlier than now planned, the Senate expects to reduce the overall cost of CVN-77.

F-22: The Air Force requested \$2.1 billion in R&D and \$81 million in advanced procurement for the F-22, the first two of which are to be procured next year. According to the QDR, the service plans to buy 339 planes, 58 of which are to be procured between FY 1999-FY 2003. The House authorization

bill fully funds the request, while the Senate, expressing concern about starting the aircraft's production while its development is still underway, cuts \$420 million in R&D and eliminates the procurement funds. The House appropriations bill fully funds the request, although it would shift \$6 million in procurement back to R&D. The Senate appropriations bill trims \$213 million from the R&D request and denies the procurement request.

New Attack Submarine (NSSN): Last year Congress directed the Navy to procure the first four boats of a new class of submarines between FY 1998 and FY 2001, dividing the work between two shipyards, Electric Boat and Newport News Shipbuilding, which would then compete to build future boats of the new class. But, in its FY 1998 request, the Navy proposed that the shipyards jointly produce these four boats between FY 1998-FY 2002 to save up to \$600 million. The service requested \$395 million in R&D and \$2.6 billion for the first boat, including \$285 million in advance procurement funds. The House authorization bill would reject the new cooperative procurement plan, while the Senate would approve the administration's new plan.

F/A-18E/F: The Navy request contains \$2.1 billion to procure 20 Super Hornets and \$91 million in advance procurement funding for 30 aircraft in FY 1999. The House authorization bill would provide just \$1.348 billion for an unspecified number of F/A-18E/Fs, preferring to slow procurement. By contrast, the Senate authorization bill and both appropriations bills would fully fund the administration's request.

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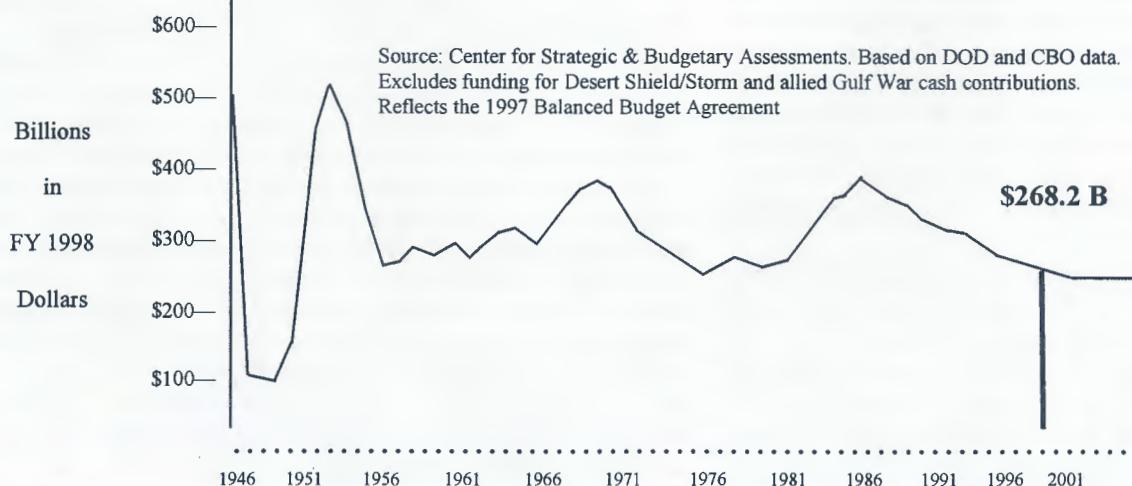
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Defense Budgets, FY 1946—FY 2002



The St. Louis Story on Conversion

Virginia Nesmith

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In the fall of 1996, the St. Louis media followed with great interest the competition for the prototype contracts on the Joint Strike Fighter. McDonnell Douglas, Boeing and Lockheed Martin were in the running; McDonnell Douglas lost out. But three weeks later, McDonnell Douglas announced merger plans with Boeing and early in August the deal was completed. Boeing is considering placing some of the work on the new fighter in St. Louis at the former McDonnell plant. And area officials once again watch eagerly for the "new lease on life" production of new weapons could bring to the regional economy.

Before the fall of the Berlin Wall in 1989 about 13 percent of St. Louis jobs were tied to military spending. McDonnell Douglas was the largest employer in the region, with 43,000 employees. In addition to McDonnell Douglas and its hundreds of thousands of subcontractors, there were nearly 500 other prime military contractors in the metropolitan region and five military bases and installations. Between 1991 and 1996, contract cancellations and cost-saving measures led to the loss of nearly 20,000 jobs at McDonnell Douglas and 36,000 other defense-related jobs.

Community Builds Support for Change

Because of groundwork laid by economic conversion advocates, St. Louis responded quickly to news of pending military cuts. In 1990, area government officials, business and community representatives formed a Defense Adjustment Committee. The committee looked around the country for best practice models and applied for federal conversion dollars to put some of those into effect. Worker re-training and job search help was offered. Entrepreneurial training, business incubators and a revolving loan fund were set up. Management re-training was instituted at 22 small- and mid-sized firms through the Management Assistance and Technology Transfer Program (MATT). This incorporated elements of manufacturing excellence, activity based costing, and worker participation in decision making to help firms approach processes and products differently.

The programs helped. Surveys of former McDonnell Douglas workers indicated that a majority of laid-off workers found other employment. New business startups had a higher than usual success rate, and MATT-participating firms retained employees. St. Louis had adjusted to downsizing. But with the exception of some firms in the MATT program, St. Louis has not converted.

The military industrial base has not been replaced by a comparable commercial base. Unions, corporate executives and government officials have not been proactive or creative in pursuing conversion. Most of the new jobs have been in service and retail. Downtown St. Louis chose to focus its attention on tourism, sports and gambling rather than on support for the remaining manufacturers. Real wages in the St. Louis metropolitan area fell by three percent between 1989 and 1994.

McDonnell Douglas refused to consider conversion seriously. Company executives were not interested in major conversion opportunities such as producing mass transit cars for the now completed Metro-Link system passing right outside the company's door. Nor were they interested in sharing the bounty from the billions of dollars in federal research and development moneys they had received. Several religious orders proposed that

McDonnell Douglas join with the St. Louis community in developing a technology transfer center and venture capital fund based on models developed by Massachusetts Institute of Technology, the Argonne National Laboratory, the Long Island Research Institute and Lancashire Enterprises in England.

The partnership would have enabled them to launch some of their technologies with commercial applications, creating new business and jobs for some of the talented workers they were laying off. McDonnell Douglas officials refused to consider the proposal. They and Missouri's senators chose instead to lobby for increased military spending and to market weapons abroad.

To remember the name of a new product one has to hear it at least 18 times, advertisers say. St. Louis, the country for that matter, heard about economic conversion for a short time. While not exactly a household word, it at least became a familiar term to mayors, economic development officials, production workers and a few company officials. But conversion advocates did not have the money and government did not have the will to practice it enough to ingrain the message in our national conscience.

The conversion message is complex. It encompasses a moral dimension about the spread of weapons; an awareness that conflicts worldwide are fueled by U.S. armaments, and an ability to understand economic arguments about the pitfalls of subsidizing arms sales whose offset agreements threaten U.S. jobs. It requires understanding the drain military spending puts on capital and human resources because "national security" is so narrowly defined that money for public health, education and the environment is out of reach for millions in need.

When talking to people in a military-dependent city there are inevitably those whose livelihoods would be at stake if the military budget was cut. Until federal, state and local officials get serious about creating viable commercial manufacturing jobs to replace military work, conversion arguments will fall on deaf ears.

Conversion: Do It and It Will Pay

Conversion takes money. The government may have spent nearly \$16 billion nationally between 1993 and 1997 on conversion-related programs. But it was not enough. It takes money to support existing industry, to help with modernization and expansion plans. And it takes government money for new product development in transportation, environmental clean-up and emerging technologies. Conversion will pay, if we invest in it.

Conversion takes gumption, a willingness to look for new solutions rather than stay mired in old problems, and it takes the vision to see beyond next month's bottom line or next week's paycheck to what could be in a year or two, even a decade or two.

Conversion takes courage, courage to acknowledge that weapons have consequences once they leave the factory, that weapons rob the poor and destroy lives the world over. Conversion takes heart; it means deciding our values do not lie in perpetuating cycles of violence—then putting money on the decision. It takes people—lots of them. The recent mergers have magnified the power of the military lobby. Unless we magnify our own voices we do not stand a chance. And it takes persistence. "Defense adjustment" aside, the country still hasn't gotten the message about conversion. It means telling it again—and again—and again.

Networking and Education: Heart and Soul of Conversion Efforts

Joanne Sheehan

In 1976 the first of 29 Trident submarines was under construction at General Dynamics Electric Boat shipyard in Groton, Connecticut, the so-called "submarine capital of the world." This was the beginning of a 14 year boom in defense spending and high employment for southeastern Connecticut's New London County, a relatively quiet and undeveloped area proud of its shipbuilding heritage and the fact that nearly 60 percent of its 110,000 available jobs and 81 percent of its total payroll went to the military.

But only 18 Trident submarines were built, a fact that shook many in the community, and in 1992 President George Bush further depressed the people in the area by announcing his intention to build only one Seawolf submarine, the Trident's technologically superior nuclear powered follow-on. As with the Trident, the Defense Department had planned to have Electric Boat build 29 such subs, but the end of the Cold War cut the number significantly. Politics saw that a total of three Seawolfs were built, but by the early 1990s the sun had begun to set on high-priced defense spending—even in Groton.

Electric Boat Lays Off 2000 Employees

Six months prior to Bush's announcement, General Dynamics, the owner of Electric Boat, issued a warning that it planned to downsize. A few short months after the Bush announcement, Electric Boat management laid off more than 2,000 workers, prompting many in the community to develop "Save the Seawolf" and "Save the Shipyard" campaigns.

General Dynamics' strategy using layoffs to mobilize the community worked. The politicians, business community, Electric Boat workers, media, and others were at least partially successful in their campaign to reinstate the Seawolf, but even at \$2 billion for each of the three copies, it was apparent to most that Groton's heady days as submarine capital of the world were over.

In the midst of the "Save the Seawolf" campaign, members of War Resisters League/New England expanded, eliciting help from people who took a different view. Believing that military cutbacks did not mean the end of the world, they formed the Community Coalition for Economic Conversion which was committed to the development of an effective grassroots organization supportive of economic conversion. This was not a new idea. Conversion efforts began in the 1960s when Electric Boat was building the Polaris submarine. Few listened as Defense Department procurement brought additional employment to the area. But in 1978 a small conversion movement developed, which brought the moral or "principles" issue of defense spending to the forefront. Still few listened.

Ironically, it was Electric Boat that forced the issue with subsequent rounds of layoffs. The Community Coalition's first challenge was to find a way to reach out to union members and others. It organized a "Listening Project Community Survey," an organizing tool that involved in-depth, open-ended and non-threatening interviews encouraging participants to examine their

thoughts about defense spending. This helped in the development of effective organizing strategies and it enlisted new recruits. The idea was to network with economic development organizations, unions and community groups while building a stronger grassroots base for economic conversion.

In 1995 the Corporation for Regional Economic Development invited interested parties to join a manufacturing cluster group to develop plans to assist in the diversification and development of manufacturing as defense contracts dwindled. Few manufacturers joined the effort, but public interest grew and additional people began to participate. This led to the development of another useful organizing tool that involved manufacturers. Before this was done local manufacturers had not been involved, but this effort helped break the ice.

Three-Part Plan Begins to Pay Off

That same year coalition members began to work with the unions at Electric Boat. In 1996, with 7,000 more layoffs expected, union representatives and coalition members developed a three-part plan, which included:

- A new level of coordination and commitment, stating the need for union and community involvement to turn planning documents into real jobs;
- A full community lobbying effort to secure conversion and transition funds from federal, state and corporate sources;
- Addressing the question of how funds were to be spent. It was agreed that "Quick fix" approaches such as tourism pay far less than does manufacturing.

A number of collaborative efforts have resulted from this. For example, coalition members began working with the Private Industry Council on an application for Department of Labor funding for displaced worker services. This has resulted in full funding for (1) peer counseling; (2) workshops on skills profiling to add detailed information about individual skills; and (3) a program enabling workers to reach out to companies and union representatives outside the area to identify firms. This funding was only recently received. Meanwhile a new round of layoffs at Electric Boat has begun. But this work promises to help workers better identify training needs.

Still There is a Need for Change

It is clear that such a militarily oriented region has a military mindset: follow commands, the experts will tell you what to do. For a community that has been economically—and therefore psychologically—dependent on the military for decades, changes on many levels need to take place.

Raising the issue of principles—should we depend on weapons production for our livelihood?—continues to be seen by some as unpatriotic. But success depends on consciousness-raising through listening projects and popular education workshops, which comprise the heart and soul of any public effort because they encourage people to think through the issues. Only then is it possible to organize a successful grassroots effort for conversion.

Good for Networking: Only \$10, call 212 768-2080.

Buy your copy of ECAAR's *Directory of Major Non-Profit Organizations Working in the US on Arm Reduction Issues*

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So the QDR does not pass the test of demonstrating demand. What about supply? The QDR makes strong and controversial statements on how to change the way national defense is supplied. It argues for cutting manpower and military bases while increasing the equipment it buys from the private sector by 50 percent. The rhetoric runs thick: "The drawdown is now over, the dividend from procurement reductions has been spent, the procurement holiday must end, and investment in modernization needs to rebound." But with expenditures of \$40 billion a year, procurement remains higher in real terms than in the mid-1970s.

Within procurement, the greatest aspirations are for weapons associated with the Revolution in Military Affairs (RMA). The RMA is supposed to connote that bundle of precision bombing, battlefield intelligence and management techniques exhibited in the Gulf War. But the efficacy of these methods is hotly contested by defense analysts and scholars. Furthermore, it is increasingly difficult to imagine wars of this sort in our future. The emerging missions—peacekeeping, countering terrorism, guarding against electronic warfare and sabotage—will require skilled manpower more than remotely controlled precision-guided munitions.

Industrial Base Strategy

In the early 1990s, Pentagon leaders and President Clinton emphasized procurement reform which would take down the "wall of separation" between military and civilian work and encourage dual use technology development. The point was to lower costs and increase quality by increasing the number of competitors, while lessening defense dependency and thus political pressures from contractors. But dual use and conversion initiatives were swamped by countervailing Pentagon support for arms exports and defense mergers. Today we face a dwindling number of defense giants who are just as defense dependent as a decade ago. Since 1989, the number of large contractors accounting for two-thirds of Pentagon defense product sales has fallen from 17 to seven, and in most major weapons systems, only one or two are capable of competing.

In Europe and elsewhere, American defense mergers are often interpreted as Pentagon directives, reducing prospects for transatlantic cooperation and, by prompting "national champion" responses, exacerbating the excess capacity problem. In fact, the Pentagon has not practiced a pro-active industrial base policy and lacks any analysis to fashion one. Without a plan, it acquiesced in a restructuring strategy driven by financial market pressures. Although mergers are showcased as cost-saving, driven by budgetary demands and the need to achieve economies of scale, they are chiefly motivated by expectations of short term financial gain and long term enhanced market power and political clout.

Most mergers have been of a market extension not a horizontal integration type, and few weapons production lines have closed. Where cost savings have occurred, it is due principally to reduced management and marketing overheads and to subcontracting and relocation, this with adverse consequences for incomes, regional economies and blue collar employment. Mergers have squeezed out diversification and conversion strategies in top corporate suites and split diversified companies down the middle.

Because of their enhanced ability to lobby and influence Pentagon strategy, fewer and more powerful defense contractors

will mean higher military budgets at the expense of civilian and private investment and social spending. The pressure to maintain existing systems in production will continue, and the prices of weapons are apt to remain high. The Pentagon will have fewer options for evaluating and choosing among contractors and thus may need more rather than less regulation. As the new giants will remain heavily defense dependent, pressures to export and to maintain "Buy American" practices will persist, encouraging similar behavior by other weapons-producing nations. On the economic front, the mergers are frustrating efforts to strengthen the performance of the civilian economy and to devote defense-bred skills and technologies to other pressing national problems.

Conversion Progress

Despite contradictory policies and Pentagon foot-dragging, conversion success is more widespread than commonly believed. Over a decade of defense cuts, many U.S. firms both large and small have increased their civilian sales and retained workers who otherwise would have been laid off. Many large firms, depicted as "dinosaurs" by some American critics and excused by others as too specialized, have in fact parlayed their technologies into new markets. Rockwell, TRW and Hughes were able to lower their defense dependency significantly over a period of six years by applying aerospace expertise to automotive projects such as urban traffic management and intelligent vehicle information systems. Boeing has excelled in both civilian and military markets, aided by internal mobility practices allowing personnel to move easily between civil and military work. Even the most aggressively merged company, Lockheed, is profitably making civilian communications satellites and managing Medicare systems.

My Rutgers teams' interviews with hundreds of small and medium-sized firms show that a majority increased civilian sales while enduring deep defense cuts. As with large firms, civilian sales do not in these transitional years make up for defense losses, but they do cushion the blows. Many were able to use defense profits to explore new products and markets, and many did so explicitly to avoid layoffs. Also, new firms have been founded on defense technologies, hiring former defense employees.

Government programs, especially those managed at the regional level with state and federal funds, have been quite helpful to firms in transition. Many have benefited from technical assistance programs, which help firms draw up a business plan and acquire appropriate consulting help. Some have won technology transfer grants or gone into partnerships with government labs. Many credit regional revolving loan funds with their surviving the two to five years generally needed for successful conversion.

The peace dividend is there for the taking. We have managed to trim the budget to where it was before the Carter/Reagan buildup, but we seem to be in denial about the end of the Cold War. If the president, the Pentagon, and congressional leaders were unambivalently committed to creating a military force, national arsenal and industrial base consonant with our 21st century economic and security realities, we could reap a significant enlargement of the peace dividend. Complementary downsizing, restructuring and conversion policies could efficiently manage this transition, freeing federal dollars for other purposes and releasing talent, technology and capital.

Conversion in Israel

Joan Holtzman

Israeli defense conversion must be understood in its own context. A critical element is to recognize that Israel continues to have one of the highest proportional military budgets in the world—roughly 16 percent of its total state budget for 1997, according to official documents. It also continues to receive substantial military assistance from the United States and to require almost all of its young people to serve in the armed forces. These facts, and Israel's defense posture in general, can of course be explained in terms of the ongoing real and perceived threats to the country's security.

For Israel, the end of the Cold War did not make its hostile neighbors go away or resolve the issues between Israel and the Palestinians living in occupied lands.

The end of the Cold War has however had its effects. It directly shifted the balance of power in the Middle East and indirectly led to the peace process which, though currently stumbling, is still alive. As a result, Israel has modestly reduced its defense spending and allocated new expenditures to the furtherance of the peace accords.

Driven in part by the desire to compete in the "new global economy," and in part by the need to absorb and find employment for the huge influx of Soviet immigrants—many highly trained scientists, engineers and technicians among them—Israel has moved quickly to create jobs.

It has developed economic policies to encourage capital investment—both private and in the form of grants to approved enterprises. It has increased its investments in physical infrastructure and education, and actively favored export-oriented growth. More recently, following significant reductions in unemployment, the state has begun to free up human capital by adopting a policy of downsizing public-sector employment.

In this context—and given Israel's advanced military know-how—defense industry conversion was a natural path to pursue. Economic incentives were in place to develop new and varied commercial applications of military technology. At the same time there has been no shortage of experts to make things happen—not only those who had worked for defense firms but also some who simply knew a lot from their long association with the armed forces. (Men in Israel are required to serve in the active reserves until age 50.) There was also a pool of talent to draw on from the new immigrant population.

Even the fact that much of Israel's industrial base, including its aerospace, communications and electronics industries was all interrelated—being either controlled or supported by the government—was a help rather than a hindrance. There

existed no great "wall of separation" (as in the United States) between the military and civilian sectors, and defense-serving firms often had experience in commercial civilian production as well. Thus, with appropriate pulls and pushes, it was relatively easy to diversify or to spin off new companies.

The results in the past six years have been impressive. The huge company, Israeli Aircraft Industries, has broadly expanded its efforts to diversify. In one notable example, it adapted the pilotless military planes it continues to manufacture to the civilian objective of fire-fighting. Other defense companies have recognized the market potential for new environmental technologies and have moved in that direction. Support for such ventures comes from the Israeli Export Institute which has created a special marketing department devoted to environmental technologies.

At the same time hundreds of small private companies have been formed with the explicit purpose of redeploying military technology for the consumer market. All this activity has no doubt contributed to the fact that Israel increased its GDP by 40.5 percent and its business-sector product by 50.2 percent in the period between 1990 and 1996.

Typical of the new high tech start-ups is Emultek, a Jerusalem-based company founded in 1990 by three former Israeli Air Force pilots. With backgrounds in systems design and engineering, and experience in developing the Favi fighter airplane, the trio invited a fourth scientist to help implement their vision of building a family of software products. Taking as their model software originally designed to simulate the cockpit of the fighter jet, the firm created a generic version that could be used as a simulation tool for a variety of commercial products. Their most specific targets are telecommunications, consumer electronics and medical equipment.

The appeal of some of the advanced software being developed in Israel is that it allows users to simulate both the appearance and the functionality of a product without having to build physical prototypes. Engineers and potential customers can detect design flaws and correct them before the product goes into the development stage, thereby saving both time and money. (A side benefit is the reduction of environmental impacts from wasteful production.)

Emultek continues to serve the defense industry, as do most of Israel's new high tech firms. But its founders see clearly that their future lies elsewhere—in the commercial markets of the Pacific Rim, Europe and especially the United States. With appropriate effort and good will, conversion from military to civilian production could become a major reality in Israel.

This article is based on an article in *Positive Alternatives*, Summer 1997, and is published with the permission of the Center for Economic Conversion, Mountain View, CA, where Joan Holtzman is Associate Director.

Ratification of the Comprehensive Test Ban Treaty—At What Price?

Alice Slater

The long sought Comprehensive Test Ban Treaty (CTB) signed last September by President Clinton falls far short of its description as "comprehensive," and it does not ban certain nuclear tests.

In a so-called "sub-critical" nuclear test, the Energy Department on July 2 detonated 3.3 pounds of deadly plutonium with chemical explosives 1,000 feet below the desert floor at the Nevada Test Site without causing a chain reaction, hence "sub-critical." Another detonation is planned in September with four others scheduled for 1998 as part of a 10 year \$40 billion "stockpile stewardship program" which will enable U.S. weapons makers to design new nuclear bombs in computer simulated virtual reality.

Commentary

These computers are not laptops. The program includes the stadium sized \$3.4 billion National Ignition Facility at Lawrence Livermore National Laboratory, computers as large as houses, and technology for prototyping new weapons and developing virtual manufacturing. The deployment of a new post-cold war nuclear weapon, the B61-11 earth penetrating "bunker buster" has been revealed, and a replacement for Trident submarine nuclear warheads is in design, with plans for flight tests in 2002 and 2003.

Clinton's 1995 announcement supporting CTB negotiations was coupled with a promise to deliver on the stewardship program, ostensibly to secure the "safety and reliability" of the U.S. arsenal. Yet in 1992, Clinton decided not to end a nine month testing moratorium, declaring that the weapons were safe and reliable and that the costs of resumed testing outweighed the benefits. At that time, Walter Isard's analysis for ECAAR of the costs and benefits of restarting the tests was widely circulated to decision makers in Washington and was credited by the Senate Foreign Relations Committee's technical advisor as "fundamental in forcing the Executive Branch to face up to the fact that they were going to spend billions in the name of safety but for very minimal gains."

Noted retired weapons designers, Ray Kidder (Livermore) and Richard Garwin (Los Alamos), agree the United States can maintain the arsenal's safety and reliability without the costly stewardship program. Kidder argues that the underground tests will raise international distrust of U.S. good faith intentions to comply with the CTB, and both say the better option would be to maintain the capability to re-manufacture existing weapons, without the need for new designs which could create the need for ever more tests. Indeed, during the debate on whether to extend the 1992 moratorium, the Congressional Record revealed that since 1950 there have been 32 airplane crashes with nuclear bombs aboard, and although two of the crashes resulted in the scattering of plutonium (over Thule Greenland and Palomares Spain) none of the warheads ever exploded! Then why this deal with the labs?

Clinton promised to provide the Pentagon and the weapons producers with the ability to design new nuclear weapons to buy their acquiescence for Senate ratification of the CTB. History presents a sad parallel. In 1963, when President Kennedy sought ratification of the Partial Test Ban Treaty, writes Deborah Shaply in *Promise and Power: The Life and Times of Robert McNamara*:

The foes of the test ban in Congress, who were ready to do battle with Kennedy and expected to gain momentum from military testimony, were disappointed. The chiefs

did testify for the treaty, because in the locked room they had demanded an enormous price: more funding for the weapons labs, preparation to test quickly in case the Soviets violated the agreement, and other conditions. The net effect was to strengthen the weapons labs, expand U.S. underground testing, and continue the arms race.

The irony is that continued design capacity for a new generation of nuclear weapons, in exchange for Pentagon support for CTB ratification, will undermine its international entry into force. For the CTB to become a binding agreement, all 44 nations with nuclear reactors on their soil must become signatories. (This unusual requirement is an acknowledgment of the bomb-making capacity of nations in possession of commercial reactors.) India and Pakistan will not sign the CTB as long as the U.S. continues its program. Using U.S. technology to design nuclear weapons serves as an invitation to less developed countries to test and develop nuclear arsenals by more antiquated methods.

India, reacting to the U.S. sub-critical test, stated that its opposition to the CTB as "not genuinely comprehensive" was vindicated because the treaty contained "loopholes ... exploited by some countries to continue their testing, using more sophisticated and advanced techniques," and is a discriminatory non-proliferation measure that does not contribute to global nuclear disarmament. China too expressed its concern to the United States.

Polls Show Support for Nuclear Weapons Elimination

The U.S. public is clearly opposed to such activities. A recent poll by Celinda Lake of Lake Sosin Snell and Associates indicates that 87 percent of all Americans think the United States should negotiate a treaty to eliminate nuclear weapons just as the world has done for chemical and biological weapons. And 84 percent said they would feel safer if they knew for sure that all countries, including the United States had eliminated its nuclear arsenals.

Public concern is increasingly echoed by some of the most distinguished scientists and military leaders. The National Academy of Sciences has called for much deeper cuts in the arsenal — 1,000 bombs and then to a few hundred each for Russia and the United States. General Lee Butler, Commander of U.S. Air Force and Navy strategic nuclear forces from 1992 to 1994, has been joined by a number of high ranking military leaders in saying the continued possession of nuclear weapons increases international insecurity because their very existence in some nations provides an incentive for others to acquire them. This warning, coupled with overwhelming public concern, should be a signal to the United States to support a true CTB unencumbered by the proposed \$40 billion reserved for testing.

Former ECAAR Project Director William Weida, with Greg Mello of the Los Alamos Study Group, calculated in 1995 that a passive curatorship program of the arsenal, while it awaits dismantlement, would cost only \$100 million a year. It is time to stop the continued nuclear arms race and put an end to the final chapter of the Cold War.

Alice Slater is President of Global Resource Action Center for the Environment (GRACE) and former Executive Director of ECAAR.

For copies or more information about the Abolition 2000 public opinion poll, call 212-726-9161.

(Continued from page 1)

commands about two-thirds of its resources and heavily influences most of the rest.

Extensive stockpile surveillance data show that nuclear weapons have been kept in a highly reliable condition with small effort from the two nuclear labs. The modern weapons selected to remain in the U.S. stockpile into the next century are extremely safe and reliable. Maintaining the existing nuclear arsenal requires only a small fraction of the personnel now employed for this purpose at the weapons labs.

For many reasons, LLNL's continuing role for nuclear weapons is less secure than LANL's: encroaching suburbs, a cramped site, no on-site nuclear waste disposal, continuing protest in the liberal and relatively affluent East Bay region, and less-focused political support than the New Mexico labs enjoy. Most important, LLNL has nothing like the large plutonium infrastructure present at LANL, which will soon be upgraded to provide hundreds of thousands of square feet of modern nuclear factory space. LANL will soon also have the best hydrodynamic test facility, which unlike the National Ignition Facility (NIF) being built at LLNL, is directly useful for testing real weapons.

Of the 10 weapons types to remain in the stockpile after current dismantling, only two deployed weapons, the B83 gravity bomb and the W87 warhead, are Livermore designs. A third Livermore weapon, based on a LANL design, the W84 ground-launched cruise missile warhead, will be retained but not deployed. Concerned about misspent resources and lost research and development (R&D) opportunities, then-Chairman George Brown of what is now the House Science Committee wrote DOE Secretary Watkins in 1992 urging him to establish LLNL as a civilian technology laboratory, transferring LLNL's nuclear defense missions to Los Alamos. Brown's idea didn't take, but a bill was subsequently introduced in the House to establish a DOE lab closure commission.

Watkins' successor, Hazel O'Leary, spoke of the possibility of a "green lab" in California. Her "Galvin Panel" later recommended that LLNL's defense missions be transferred to Los Alamos.

In 1994, the Congressional Budget Office suggested that closure of LLNL was an option, along with the downscaling of DOE's ambitious stockpile stewardship plans.

These threats to LLNL's nuclear weapons future were defeated, but the common reasoning behind them remains sound. As budget pressures continue, LLNL's *raison d'être* needs scrutiny again.

That *raison d'être* is now the stockpile stewardship program, established by the FY1994 Defense Authorization Act. This program is funded in excess of \$4 billion annually—an amount greater than the average constant-dollar expenditure on nuclear weapons research, development, testing, and production throughout the Cold War. It does not include waste management costs, the maintenance of mothballed facilities, or the storage of nuclear materials, which add another \$2 billion. Half the full amount—\$3.0 billion—is spent by DOE at its three weapons labs, which also receive substantial sums from the Pentagon.

What is driving these large budgets is the requirement to retain the capability to certify and manufacture new designs without nuclear testing, a feature of the 1994 Nuclear Posture Review. The program is thus not a conservative "stewardship" program at all, but

a highly aggressive design-oriented program that will provide unprecedented capabilities to the labs, gravely damaging U.S. non-proliferation and arms control goals. Bizarre as it may seem, the goals of the program include the replacement of many or possibly someday *all* the fully-tested designs in the stockpile with new, untested weapons. This program merits radical downsizing, with LLNL meriting some of the first cuts.

There are alternatives for LLNL other than redundancy on the one hand and closure on the other. But conversion will be difficult, for several reasons:

LLNL managers will fight conversion with every tool available. This is because only LLNL's nuclear weapons mission is perceived as a unique national mission and funding niche. Threats of weapons cutbacks have historically redoubled LLNL's weapons advocacy.

The large-scale funding of new missions implied by conversion comprises national conversion as well as lab conversion—not at present a realistic scenario. The culture of secrecy, the lack of support for new civilian programs, and the competition for funds between existing programs and new initiatives make an extremely challenging environment in which to begin new missions.

What Will It Take?

Trauma will probably therefore be needed at LLNL to bring about cultural transformation before any new civilian missions can succeed at any but the smallest scale. Conversion, by definition involves inadequate trauma. The bulk of the funds available for civilian missions at LLNL are technology transfer funds legislated to be used only in ways that also benefit military missions.

Costs at LLNL remain high, despite some recent improvements. These barriers make conventional conversion nearly impossible at LLNL. But there are other options:

Conversion with downsizing.

Radical downsizing, then conversion.

Closure or near-closure, partial privatization, and subsequent incremental conversion.

Conversion of LLNL is not one decision but a large suite of decisions, which will be individually made by a large number of actors. What happens will necessarily depend on political circumstances which are certain to change in unknown ways. Nevertheless, if at all possible, it would be desirable to shield important "seed" programs at LLNL from loss of key personnel.

The nation does not need LLNL as a weapon lab, and may in fact not need LLNL at all. New missions at LLNL could be dangerous, or could distort otherwise-promising technology choices, and should be carefully considered on their merits—largely independently of short-term regional employment considerations. Conversion and job creation may be better achieved by closure or radical downsizing.

"Lawrence Livermore National Laboratory: Its Role After the Cold War," the report on which the above article is based, has not been sent to the DOE or tested on Capitol Hill, but the information about the weapons laboratories warrants further dissemination, which is why ECAAR has chosen to publish it. Copies of the report can be obtained from Los Alamos Study Group Executive Director Greg Mello, principle author of the study by calling 505-982-7747. The point of view in the article is entirely that of the author.

Should ECAAR Have a New Statement of Purpose?

Following a proposal at the Board of Directors Meeting in January 1997 in New Orleans, a small committee conducted two rounds of correspondence on the possibility of changing the ECAAR name while keeping the acronym, and on the desire to update the statement of purpose to be more in line with the current multi-polar world.

Although a number of alternative names were considered, none found favor, and the suggestion that we should, perhaps, find a name that would not make an *a priori* commitment to "reduction," was not widely supported.

Consequently, it seems likely that our name will stay and our statement of purpose will be updated. The draft that follows subsumes the comments from members of the study committee.

"We seek to undertake and promote objective economic analysis and appropriate action on common global security issues, and to examine critically the value of armaments for world security and peace.

"We start by noting the high cost of war to the lives of those involved, directly and indirectly, and the increasing risk that the present military-dependent, competitive global security system will fuel uncontrollable conflicts between and within states. Consequently, we support and work for policies and institutions to ensure that changes within states are achieved through peaceful democratic processes, and that international disputes are managed without war. We support the creation of systems by which international disputes can be solved through negotiation, arbitration and judicial proceedings through an enhanced United Nations or the equivalent or through other multinational institutions.

"We seek opportunities to undertake both general and specific analyses which can contribute to clear thinking on the relative value of alternative policies and expenditures, especially when there are options that can reduce dependence on military power.

"We also seek to define and promote a

concept of security which takes full account of the power and influence that comes from educated, economically sound nations, and from international systems that would be fully developed and creatively used for the peaceful settlement of disputes.

"In the past, economists have tended to regard war as an external disruption of the normal peaceful course of events. Yet war and large military budgets have reduced human welfare and harmed the environment far more than inflation, business cycles, and many other factors that economists regard as the business of their profession. ECAAR encourages economists to apply the tools of economic analysis to questions of war, security, and peace."

Your comments on this draft would be welcome. We anticipate that the Board of ECAAR will make a decision on the wording of our statement of purpose at its Chicago meeting on January 3rd, 1998. Please send any suggestions to the ECAAR office before Christmas.

ECAAR & Peace Science Society International Panels at the 1997 American Economic Association and Allied Social Science Associations Meetings Chicago, January 3-5, 1998

Saturday, January 3

8:00 am: Peace Economics I: *Contributed Papers*

Hyatt (Stetsen Suite E) Manas Chatterji presiding

Carl Lundgren, *Conflict Resolution in a Federation of Unequal States*

Dietrich Fischer, *The United Nations System and the Prevention of the Costs of Civil Wars*

Dorrie Weiss, *Basic Elements of an Effective Treaty on Conventional Arms Trade*

10:15 am: Peace Economics II:

Conflict Management and Reduction Measures

Hyatt (Stetsen Suite E) Carlos Seiglie presiding

Charles H. Anderton, *Exchange in the Shadow of Conflict*

Marcus Norland, Sherman Robinson and Ligang Liu, *Economics of Korean Unification*

2:30 pm: Peace Economics III: *Impact of Defense Cuts and Conversion*

Hyatt (Stetsen Suite E) Walter Isard presiding

Ann Markusen, *Defense Conversion: Indicators of Success to Date*

Sandra Hoffmann, *Impact of Defense Cuts on the California Economy: A Computable General Equilibrium Approach*

Discussants: Dietrich Fischer and David Gold

Sunday, January 4

8:00 am: *Arms Trade Analysis, Policy, Trade-Offs and Trends*

Hyatt (Stetsen Suite A) Sol Polachek presiding

Ron Smith, *An Evaluation of Arms Trade Models*

Iwan Azis, *Critical Trade-Offs in Arms Trade Policies*

Nancy Happe, *Recent Trends in Arms Trade*

Discussant: Judith McDonald

10:15 am: *Demilitarization in Africa: Prospects, Obstacles and Opportunities*

Hyatt (Stetsen Suite E) Robert J. Schwartz presiding

Lloyd Jeffrey Dumas, *Democratization, Demilitarization and*

Development: Building Peace and Prosperity in Africa

Terry Crawford-Browne, *Apartheid and the South African Armaments Industry*

Jurgen Brauer and Andre Roux, *South African Pre-and Post-*

Apartheid Military Expenditures: An Empirical Look

Discussants: Dietrich Fischer and Sharron L. McPherson

2:30 pm: *What is the Future of the Russian Economy?*

Hyatt (Stetsen Suite E) Michael D. Intriligator presiding

Marshall I. Goldman, *Can You Get There from Here: What Must Russia Do to Become a Normal Market Economy?*

Padma Desai, *Russia's Economy Under A Cloud: Some Silver Linings*

Stanley Fischer and Jorge Marquez-Ruarte, *The Future of the Russian Economy*

Jacques Fontanel and Fanny Coulomb, *The Armaments Industry and the Future of the Russian Economy*

Discussants: Kenneth J. Arrow, Stanislav Menshikov, Serguey

Braguinsky

You are Invited to the General Meeting of Economists Allied for Arms Reduction at 4:45 pm Saturday, January 3rd The Hyatt Hotel, Chicago (Stetsen Suite E)

ECAAR's Isard Publishes *Commonalities In Art, Science and Religion*

Walter Isard, Co-Chair of Economists Allied for Arms Reduction and professor Emeritus at Cornell University and the University of Pennsylvania, recently published *Commonalities In Art, Science and Religion; An Evolutionary Perspective*.

The 418 page hardback (ISBN # 1 85972 475 2) costs \$48.50 from Ashgate Publishing Company, Old Post Road, Brookfield, VT, 05906. For enquiries about the book, call 802-276-3162. For orders only, call 800-535-9544.

Contents include: The Teilhard scientific-religious framework; biological evolution theory; linguistic and dynamic modes, rate-dependent and rate-independent processes, and systems theory; physical, chemical and cosmological processes, and hierarchical structure; order within seeming disorder, chaos and system transition; hierarchical social organization; some relevant mathematical space-time development models and examination of the jump (transition) problems; evolution of Western painting; the evolution of Mediterranean and Western religion; commonalities and rise and fall of civilizations; synthesis and implications from 2000 AD and beyond; index.

Radiation and Public Health Project (RPHP)

This project will analyze the strontium-90 content of baby teeth in U.S. children born since 1979. By calling 1-800-582-3716, you can order free RPHP booklets and instructions for collecting baby teeth for use in the study. Similar research 40 years ago showed 20-fold higher than normal SR-90 levels in the teeth of children born in peak years of above-ground nuclear tests. The findings led to support for the Partial Test Ban Treaty prohibiting such tests.

Boeing and McDonnell Douglas Merge

On August 4, the Boeing Company acquired the St. Louis-based McDonnell Douglas Corporation. The \$16 billion dollar deal is the latest and largest in a series of recent defense mergers.

The new Boeing Company will generate an estimated \$50 billion in annual sales and employ 220,000 people across the United States, as a major world player in the production of commercial and defense high-tech aircraft and equipment. Its product line will include a commercial airline fleet and jumbo jets as well as the Eagle, Harrier and Raptor jet fighters, the new Hornet FA-18, Globemaster cargo planes, Chinook and Apache military helicopters, Slam, Harpoon and Jassm missiles, Delta rockets, the Space Shuttle, and the future Space Station.

The new company is also expected to receive a Department of Defense contract to build the new Joint Strike Fighter and the F-22. These two contracts would provide federal money far into the next century and could result in building 3,000 to 5,000 new fighters for the United States military, with additional sales abroad. The merger was approved by the Federal Trade Commission but vehemently opposed by the European Union to protect the rival Airbus. The deal was concluded after Boeing made several concessions, including the scrapping of sole-supplier contracts, but American, Delta and Continental already declared they will buy only Boeing jets. *The Seattle Times*, August 3, 1997.

From the Local Press will be a more comprehensive section in future issues of the ECAAR NewsNetwork. This entry was compiled by Piero Violante, ECAAR Research Assistant.

Globalization of European Military Industry and the Arms Trade *Also the Launch of ECAAR-UK*

On Friday and Saturday, September 19th and 20th, a conference on globalization will be held at Middlesex University Business School, near London. It is cosponsored by the host Business School, by ECAAR-UK, and by the Trust for Research and Education on the Arms Trade (TREAT).

The conference will focus on the changing structure of the European arms industry. It will consider how the industry is becoming global, how the companies are internationalizing, and the implications of these developments for policy.

The speakers scheduled to address the plenary sessions include John Lovering, Neil Cooper and Paul Dunne from three British universities, Elizabeth Skoens from the Stockholm International Peace Research Institute, Ann Markusen from Rutgers University, Michael Brozka from the Bonn International Center for Conversion, Will McMahon from Campaign Against the Arms Trade, and Wendela de Vries from AMOC.

The conference will also officially launch ECAAR-UK.

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Lockheed to Buy Northrop

In a \$11.6 billion agreement, Lockheed Martin on July 2 announced its intentions to buy Northrop Grumman Corp., creating a company with annual revenue of \$37 billion, employing 230,000 people. The fusion, according to Lockheed Martin's Norman R. Augustine, chairman and CEO, will make the company more efficient and competitive for the 21st century. Lockheed, maker of the F-16 Falcon and the Trident missile, and Northrop Grumman, maker of the B-2 Stealth Bomber and the MX missile system, have collaborated on the F-22 fighter jet and its early warning system. *The Lawrence Eagle Tribune*, July 3, 1997.

Electric Boat Christens Second Seawolf

Groton, Connecticut-based Electric Boat, builder of the 688-class Seawolf submarine, and others on September 1 christened the second of three boats. The Navy initially planned to build 29 such boats, but by the early 1990s the Defense Department decided to reduce procurement costs by building only three.

The christening was attended by many local officials as well as Senator Daniel Inouye, Navy Secretary John H. Dalton, the head of Naval Reactors, Adm. Frank "Skip" Bowman, commander of Submarine Group Two in Groton,

The 353 foot long, 40 foot wide nuclear powered submarine will be designated the USS Connecticut when it is commissioned in November 1998. The new generation submarine, at a cost of more than \$2.5 billion a copy, will carry a 134-man crew, has an underwater cruising speed of at least 22 knots and can dive below 800 feet. *The Day*, September 1, 1997

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ECAAR will soon limit its mailing list to people who have been in active contact:

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