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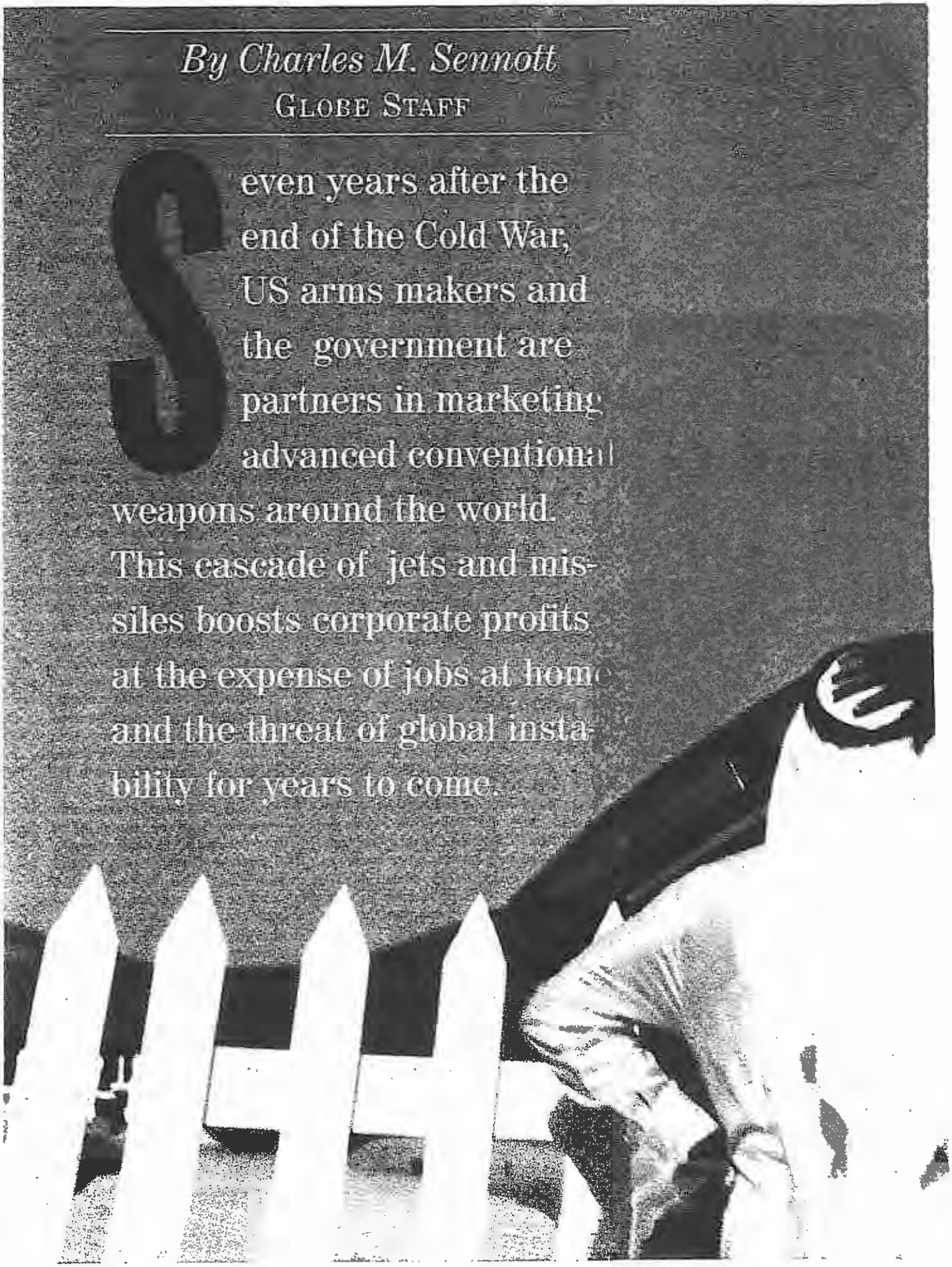
A SPECIAL REPORT

Armed *for* profit

THE SELLING OF US WEAPONS

By Charles M. Sennott
GLOBE STAFF

Seven years after the end of the Cold War, US arms makers and the government are partners in marketing advanced conventional weapons around the world. This cascade of jets and missiles boosts corporate profits at the expense of jobs at home and the threat of global instability for years to come.



GLOBAL ARMS TRADE

USA: sales superpower

DUBAI, United Arab Emirates – Sleek fighter jets made in the USA glimmer on a desert tarmac while American top-gun pilots hover like car salesmen.

Courting oil-rich sheiks and princes, the pilots enthrall the royalty with war stories from Desert Storm.

This is the Dubai Air Show, where the glitter of marketing meets the drab-green reality of war. It is a six-day extravaganza that is the Third World's largest showcase of the latest high-tech weaponry.

"These things can fight, we found that out," Gulf War hero Eric Dodson boasts to a group of Emirates' royalty viewing the merchandise. With $5 billion to spend, they are in the market for 80 fighter jets.

An Emirates air force commander among the entourage seems in awe of the

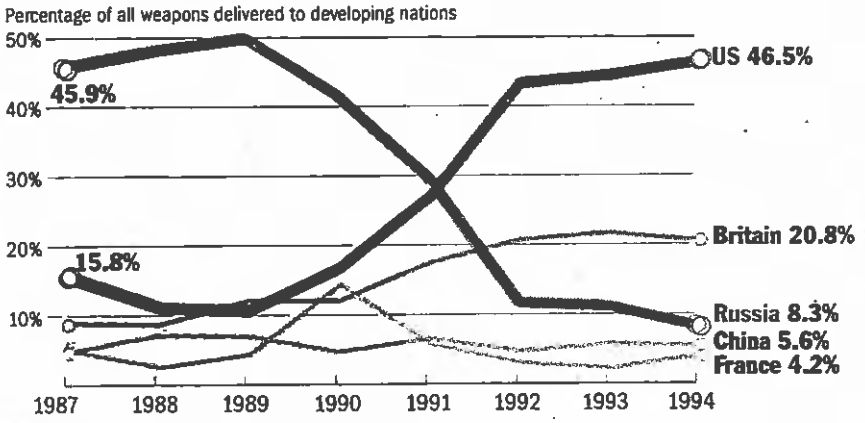
decorated American pilot. As Dodson swaggers out to the F-16 Fighting Falcon, he waves the commander up into the cockpit. Flanked by marketing experts from the manufacturer, Lockheed Martin, the two men climb into the jet and get down to business, going over the weapons-delivery system. When the royal entourage leaves, a Lockheed Martin technical representative sprays the cockpit with a can of Glade air freshener and spit-shines the windshield. And the sales team waits for the next customer among scores of countries – from Jordan to Indonesia.

In this climate of the hard sell, America's arms industry – backed by President Clinton and his Defense and Commerce departments – has gone from 13 percent of the pre-Cold War global market to about 70 percent today. In the seven years since the collapse of the Soviet Union, America has emerged as the world's leading exporter of conventional weapons.

This cascade of American jet fighters,

Becoming the dominant player

While the total value of weapons sold worldwide has fallen since the end of the Cold War, the US arms industry has fought hard to capture a larger percentage of the market, emerging as the primary supplier of weapons to the developing world.



SOURCE: Richard F. Grimmett of Congressional Research Service, The Library of Congress

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tanks and missile systems has raised profound foreign policy questions. The specter of US weapons fueling regional conflicts looms worldwide. Even more troubling is the increasing likelihood that these weapons – developed using public funds in the name of national defense – could be used against US troops.

These concerns rise out of a fierce fight for survival by the world's arms manufacturers amid a worldwide downturn in defense spending. In other words, it's a buyer's market, and US manufacturers are in it to win.

State Department officials justify the push to export as a way to help crucial allies, such as Saudi Arabia and Turkey, protect themselves from the demonstrated aggression of so-called "rogue states," like Iraq and Iran.

But it's not traditional foreign policy that's made America dominant in exports, rather it is a domestic economic strategy by the Clinton administration.

Washington has funneled subsidies to the industry to facilitate exports, arguing that foreign sales keep US procurement costs down and jobs at home. But while leading defense manufacturers report big profits, surging stock prices and huge increases in compensation for top executives (an average of $3.5 million a year for the 10 biggest companies), there has been no visible sign of reduced costs to the military and the hemorrhaging of American jobs continues. To secure deals, thousands of production jobs often are shipped overseas along with the weapons.

Critics argue that US arms export policy is misguided and dangerous, eroding the industrial base of the economy, spreading advanced weapons technology and generally making the world a more dangerous place. International figures, from Pope John Paul II to Nobel Peace Laureate Oscar Arias Sanchez, condemn the greed of the arms industry and folly of Third World leaders for plunging their nations deeper into poverty by buying advanced weapons. But with a Democrat

Lockheed Martin trumpets the THAAD missile system (inset) and the "lethality" and "timeless design" of its F-16 in Defense News, an industry weekly.

in the White House driving the policy in the name of jobs and a Republican Congress squarely behind it in the name of big business, there is a disquieting absence of debate over a policy some liken to a runaway train.

"The brakes are off the system," warns Lawrence Korb, a former assistant secretary of defense appointed by President Reagan at the height of the US arms buildup and now a senior fellow at the Brookings Institution in Washington. "When we armed our surrogates [during the Cold War] it was a defensible position. You could also argue, with the collapse of the Soviet Union, that the policy succeeded. But now there is no coherent policy on the transfer of arms. It has become a money game: an absurd spiral in which we export arms only to have to develop more sophisticated ones to counter those spread out all over the world. . . . It is a frightening trend that undermines our moral authority in the New World Order. It is very hard for us to tell other people – the Russians, the Chinese, the French – not to sell arms, when we are out there peddling and fighting to control the market."

Larry Smith, former counselor to Defense Secretary William Perry, sees "real dangers to this policy."

"They are dangers that are taking place on unmapped terrain. It is one of the major issues of security for the next ten years," he says. "The problem is, it's a very hard one to navigate. To say that we should not sell any weapons abroad is impractical and unrealistic. To continue exporting weapons without a coherent strategy is also ill-advised. It is a problem that needs the country's attention. Unfortunately, it is not getting it."

No one disputes that the US drive to become the leading supplier in the $40 billion world arms market has achieved its goal. Consider the following:

■ In the four years prior to the end of the Cold War, 1986-1989, the US exported $34.5 billion in arms, according to the US Defense Security Assistance Agency. "Foreign military sales," a federal program of government-to-government transfers which are among the most well-documented arms transactions, puts total exports for the four-year period 1991-1994, at $83.1 billion, an increase of 140 percent.

■ Last year, for the first time in history, American companies produced more fighter jets for export than for the US military, according to a study by the Cambridge-based Institute for Defense and Disarmament Studies, which tracks international arms transfers. The same holds for many lines of missiles and tanks.

■ Before the collapse of the Soviet Union, US weapons accounted for about 13 percent of government-to-government transactions worldwide. The US now controls as much as 64 percent of the global market, according to a Defense Department report titled "World Wide Conventional Arms Trade: A Forecast and Analysis."

These figures, though dramatic, probably underestimate US dominance of the global arms market because they reflect only government-to-government sales. They do not include "direct commercial sales," which are negotiated directly between manufacturers and foreign governments and not as well-documented as government-to-government transfers.

Lora Lumpe, director of the Federation of American Scientists' Arms Sales Monitoring Project, says these types of transactions have surged in the last decade because the industry prefers their more private nature and minimal red tape. Direct sales, the federation's figures show, can account for as much as $6 billion a year. She says the most solid indicator that US dominance will continue to rise is that American manufacturers in 1993 obtained 73 percent of total arms agreements – government and commercial sales – which will be delivered and paid for in the coming years.

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A potent partnership

The federal government and the defense industry have been allies in the fight for supremacy. Joel Johnson, vice president of the manufacturers' chief lobby, the Aerospace Industry Association, doesn't mince words about the aggressive campaign: "If you look at other markets, like medical instruments, supercomputers, et cetera, the US has 70 to 80 percent. The question isn't why do we have so many exports in the aerospace market; the question is why have we had so little?"

Defense Department officials defend the exports as part of a "two-way street" – helping allies to develop conventional forces compatible with America's, while shoring up the domestic economy and keeping defense costs-per-unit down. Although the Defense Department budget increased from $263 billion last year to $265 billion in 1996, the money earmarked for procurement has shrunk from a high of about $80 billion annually in the mid-1980s to a steady $45 billion a year today.

Since the government is buying fewer arms, analysts say, exports have become a crucial, government-subsidized profit-

making venture for an industry in transition.

With the collapse of the Soviet Union and scaling back of the Reagan defense buildup, President Bush tried to cushion the economic blow. He began by waiving "recoupment fees" of 5 percent to 25 percent levied against American manufacturers on sales to foreign governments. The fees were intended to reimburse the government for the billions of dollars in subsidies it provides for research, development and testing.

"In effect, the foreign sales are all gravy for the industry," says Korb, the former assistant defense secretary. "Exports look like a small part of the overall industry, but they are a very high concentration of the profits."

For example, the government spent $1.9 billion since 1979 for research, development and updates on the AMRAAM missile. After nine production cycles for US armed forces, the advanced missile is now a leading export for Raytheon, the Lexington-based company sells the missile on the international market for $2[illegible] apiece and has a current export order of more than $100 million.

Waiving the recoupment fees on these kinds of systems has amounted to a massive subsidy of hundreds of millions of dollars a year to the arms industry; it is corporate welfare at its worst," says Lum[illegible]

Other assistance comes in more direct forms. The Clinton administration, for example, has provided the arms industry with $36 billion a year in research, development and testing grants. That is about 50 percent more in inflation-adjusted dollars than the US was spending in the 1970s, according to the Washington-based Military Analysis Network, a non-profit group that tracks defense spending.

A more direct subsidy to the export market is the Pentagon's $3.5 billion a year "foreign military finance" program, which gives money to friendly nations for arms purchases.

Underwriting mergers

Mergers in the industry also have been subsidized. The federal government provided approximately $1 billion in support for the $10 billion merger last year of Lockheed with Martin Marietta, industry analysts estimate. The Pentagon chipped in to help cover consolidation costs, mothballing plants, severance packages, even CEO bonuses. The Defense Department says the consolidation and "streamlining" of the industry will result in future procurement savings.

"The secretary of defense has said that mergers are inevitable if these companies are going to stay viable," says department spokesman Glenn Flood. "It's too early to say or to quantify the savings, but in the long run we expect them." What is certain is the loss of jobs, in the case of Lockheed Martin, 19,000 by the end of this year.

Another form of subsidies is loan guarantees. In the Gulf War, for instance, the United States forgave $7 billion in military loans to Egypt.

The government even helps pay for marketing presentations and technical assistance at trade exhibitions. At the Dubai Air Show in November, for example, the Pentagon paid $500,000 to transport and display 13 US military aircraft – from Lockheed Martin's F-16 to Bell's "Super Cobra" attack helicopter. An estimated $100,000 covered the entourage of dozens of Defense and Commerce department employees, from export analysts to fighter pilots. Every year, millions of dollars in public funds are spent to promote American manufacturers at more than a dozen shows, from Paris to Singapore.

"Our role here is national security," says Air Force Major Todd Freuhling, standing in front of a cargo plane that transported most of the weapons, which are owned by the government but displayed by manufacturers. "We are trying to emphasize regional stability through standardization and interoperability with our equipment and the allies throughout the Arabian Gulf market. And, quite frankly, we are putting our hardware on display because it's the best in the world and we're proud of it."

In huge air-conditioned auditoriums, prospective buyers saunter by pavilions marked US Defense Department and US Commerce Department as if they were storefronts at a shopping mall. The US Army booth has an enticing video presentation with a hard-rock beat and a voice straight out of FM radio promoting McDonnell Douglas Apache attack helicopters: "Anytime, anywhere, any weather ... death awaits in the dark." As the announcer speaks, tanks on the ground burst into flames.

The Air Force booth takes the customer-friendly approach, featuring a large framed board devoted to "Our Foreign Military Sales Customers" with a long list that includes Turkey, Egypt, Indonesia, Pakistan and Thailand.

This hard sell by the federal government is one of the most disconcerting developments of the post-Cold War era,

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AP PHOTO

President Clinton celebrates a $6 billion commercial jet deal with Saudi Prince Sultan bin Abdul Aziz (right) and envoy to US Prince Bandar.

■ ARMS

Continued from Page B2

says William Keller, former director of Congress' Office of Technology Assessment and author of "Arm in Arm: The Political Economy of the Global Arms Trade."

"It is a pretty straightforward idea that market forces should not drive the arms trade: political and strategic concerns should," he says. "This is not rank idealism by liberal do-gooders. It is a practical concern to prevent weapons of mass destruction, and the technology to build them, from spinning out of control."

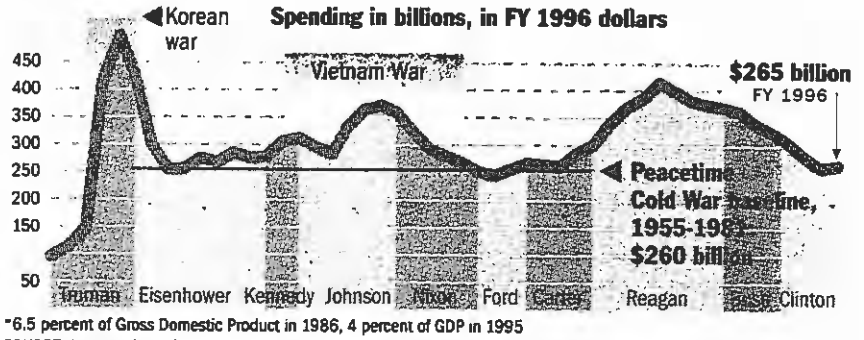
Since President Eisenhower first warned to beware the "military-industrial complex," economists have cautioned that the country is dangerously reliant on the business of weapons. Today, the industry accounts for 2.1 million jobs nationwide. In New England, there are more than 200,000 workers – from the high-tech Raytheon plant in Andover to the enormous Electric Boat shipyards of Groton, Conn. The broader sphere of research and development provides support for the region's academic community, from Massachusetts Institute of Technology in Cambridge to the University of Massachusetts at Amherst.

Seven years after the end of the Cold War, the US economy still seems unable to break its dependence on defense.

Spending is down from the unprecedented Reagan-era budgets of more than $300 billion to $265 billion this year. But the downturn has not yielded a "peace dividend." Adjusted for inflation, the defense

The missing peace dividend

Except for the Reagan years, peacetime defense spending has stayed consistent. Critics say the Cold War's end has not produced a peace dividend. Industry officials point out defense has shrunk as a percentage of the total economy.*



*6.5 percent of Gross Domestic Product in 1986, 4 percent of GDP in 1995

SOURCE: Institute for Defense and Disarmament Studies, using Defense Department numbers

GLOBE STAFF CHART

budget today is at the level it was throughout most of the 1950s, the last half of the 1970s and 1980, according to the Washington-based Center for Strategic and Budgetary Assessment.

At the current level, the US spends three times more on defense than any other nation. Russia spends $80 billion. Iran, Iraq, Libya, North Korea and Cuba spend $15 billion combined. This tends to raise questions about the military establishment's assessment of the potential threat from abroad.

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A matter of foreign policy

The Clinton administration's candor in citing "economic concerns" as a motive for pushing exports marks a historic shift in American policy. What is a domestic policy for Clinton, was a foreign policy for his predecessors.

The Nixon Doctrine first enshrined the idea that it was easier and more lucrative for America to sell weapons to allies in the Third World than go rushing in to defend them against Communism. The US, Nixon believed, should facilitate such deals.

President Carter, who supported the arming of allies, fundamentally disagreed with using the government to assist in sales. Within three months of his inauguration, Carter ceremoniously wrote what the industry dubbed the "leprosy letter," which instructed US Embassy staffs to have nothing to do with "the merchants of death."

Then there was President Reagan, who from his first days in office set out to build up the domestic defense industry. However, the US still had a relatively small share of the global market, less than 15 percent on average. The Soviet Union was the largest exporter of weapons at the time, with as much as 60 percent of the world's trade.

Today those numbers are reversed, with Clinton providing "the most aggressive executive support of foreign arms sales since Richard Nixon," according to William Hartung, author of a new book titled "And Weapons for All," which traces exports from the end of World War II.

In 1992, candidate Clinton initially talked the talk of a liberal Democrat wanting to control the arms trade. But during the fall campaign, action in the foreign export market grew fast and furious. There were big arms deals that meant a mother lode of jobs in key states such as Michigan, Texas, Missouri and Ohio. And Bush worked diligently to clinch them. He began by announcing his support for the $9 billion sale to Saudi Arabia of 72 F-15 Eagles made by McDonnell Douglas. (In addition to the Saudi contract, there were 150 F-16 fighters to Taiwan and 236 General Dynamics M-1A2 tanks to Kuwait and many commercial contracts as well.)

McDonnell Douglas led an industry consortium public relations campaign called "US Jobs Now," generally seen as

the first step in the push to change the nature of the arms sales debate from foreign and military policy to domestic economic concerns. With glossy brochures, videos and newspaper advertisements, the company made dire predictions that if the Saudi sale did not go through, it would result in "layoffs of 40,000 workers" and end production of the F-15.

With his "New Democrat" support of big business taking shape, Clinton surprised the Bush campaign by eagerly endorsing the Saudi and Taiwan deals. The challenger was making it clear that he, too, would be an aggressive advocate for the arms industry.

The high-pressure public relations campaign of "US Jobs Now" worked, and the Saudi sale was approved. McDonnell Douglas clinched the contract, then laid off about 14,000 workers in the following three years.

The marketing of arms exports as crucial to the domestic economy changed an axis of American politics. The old notion that conservative Republicans traditionally sided with the arms industry and liberal Democrats typically called for constraint was out the window.

"The problem is that the issue is now viewed only in very parochial terms," says Paul Warnke, former head of the Arms Control and Disarmament Agency under President Carter. "Congressmen don't want to lose jobs in their districts. Defense companies see the profit in exports. ... The export boom just becomes one last, desperate attempt for the industry to cash out."

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An active promoter

Clinton's pledge to support the industry is a campaign promise he has more than kept. The president has carved out new roles for some Cabinet secretaries as de facto salesmen of American weaponry. He has dispatched Defense Secretary Perry and Commerce Secretary Ron Brown on an unprecedented number of trade missions – from the Paris Air Show to the Middle East – to drum up business for the arms industry and ensure that deals go through.

The Commerce Department even set up an "Advocacy Center" to coordinate a broad effort to increase American competitiveness in many exports, including arms. The center has established what it calls a "war room," where economists strategize on how US companies can clinch deals. And working just behind the scenes, industry sources say, is the Central Intelligence Agency, which often assesses the competitive strategies of other foreign manufacturers which may be vying for the same markets.

John Richards, head of the Commerce Department's Office of Strategic Industries, is responsible for 33 full-time employees and a budget of $2.3 million focusing on international arms deals.

"A few years ago, we realized that the US (defense) industry was going to lose a great deal of business," says Richards. "We knew we had to capture a higher percentage of exports. ... But the heaviest focus on this strategy came when Secretary Brown came in. ... Now, whenever Secretary Brown visits another country, we are asking him to meet with their secretaries of defense. ... We have to do everything we can."

Brown declined interview requests.

Clinton's policy was spelled out in Presidential Directive 41, signed last February, which states that arms sales are a necessary part of the policy to preserve industrial jobs and keep down the cost of production of weapons. It also ordered the diplomatic corps to become "actively involved" in "promoting sales."

Raymond Mabus, US ambassador to Saudi Arabia, which purchases billions of dollars of American arms every year, is doing just that. "A big part of my job is to help put Americans to work by selling products overseas, and that definitely includes the defense industry," he says. "I don't think it is our job to tell the Saudis what to buy. But once the decision is made, it is our job to do everything possible, and legal, to make sure they buy American."

Besides continuing Bush's policy of not collecting recoupment fees for direct commercial sales, Clinton has waived some fees in government-to-government sales. An all-out repeal of government-to-government recoupment fees has been a legislative priority for arms industry lobbyists, Lumpe says, and one which the Clinton administration has endorsed to "level the international playing field."

In exchange for its support, the Clinton administration has drawn effusive praise from the arms industry.

"We've all been pretty pleasantly surprised by Clinton," says John Mikels, vice president of Hughes' missile systems division, which developed the Stinger, Tomahawk and most of America's advanced missile systems. "We have seen a significant turnaround, a realization that to keep the production alive they are going to have to actively help the industry in seeking out export markets. I would say it is a dramatic turn in the industry. And it's just in time."

But Clinton's policies have disillusioned some members of his administration. "If we don't show leadership now, we will get involved in simply chasing arms sales behind countries that are already selling arms to anyone," says Joseph Smaldone, chief of the Weapons and Technology Control Division of the US Arms Control and Disarmament Agency. "Unfortunately, we're heading in that direction."

Former high-ranking military officers also have weighed in with sharp criticism. Jack Shanahan, a retired vice admiral, former senior adviser to the Joint Chiefs of Staff and ambassador to NATO, sees America's arms export policy as "fundamentally misguided."

"I don't think people realize that during the Cold War, the US government never urged the defense industry to market its products overseas," says Shanahan, a self-described "Cold Warrior" who heads the Center for Defense Information, a Washington-based nonprofit group of former military officials. "I don't think people understand that during that time, the transfer of weaponry was based on strategic concerns. Now it is based on greed on the part of the industry, and the false promise of keeping jobs back home, when in fact they are often transferring the jobs overseas right along with the weapons. This is a very disturbing development, and one that has gone by the American public with very little debate."

A guide to arms

In the past, the US has maintained military superiority by exporting only weapons that were older and less capable than those used by its own forces. Defense and intelligence officials warn against the spread of high-tech weaponry, but exports now include some of the more advanced aircraft in the US arsenal.

[redacted]

McDONNELL DOUGLAS

One of the world's most formidable interceptors and one of the most sophisticated combat aircraft ever exported.

Foreign sales: Built for Saudi Arabia and Israel. Japan builds a version under license from US companies, with US components. Competing with F-16 for a 20- to 80-plane contract with the UAE.

Cost: $15 million.

[redacted]

LOCKHEED MARTIN

A primary combat aircraft in the 1980s. Used in more Gulf War missions than any other aircraft.

Foreign sales: About 1,700. After finishing old domestic orders, they will be built for export only.

Cost: $10 million to $13 million.

[redacted]defense missile

RAYTHEON CORP.

Developed to protect against missile attacks; used in Israel to protect against Scud missile attacks from Iraq during the Gulf War.

Domestic use: No longer bought.

Foreign sales: 2,301 as of September 1993.

[redacted]et fighter/bomber

McDONNELL DOUGLAS

State-of-the-art, long-range plane designed both to bomb targets and dogfight aircraft.

Domestic use: About 1,000. The Navy plans to buy about 1,000 more through 2015.

Foreign sales: 431.

Cost: $24 million to $35 million each.

SOURCES: Arms Control Monitor, McDonnell Douglas, US Defense Department

[redacted]use missile

RAYTHEON CORP.

The Marine Corps' primary air defense since 1962; no longer bought by the Army. A single battery holds 48 missiles.

Cost: About $25 million per battery.

Foreign sales: 6,971 as of September 1993.

[redacted]helicopter

McDONNELL DOUGLAS

The Army's primary attack helicopter; destroyed more than 500 tanks during the Gulf War. The new "Longbow" has greater accuracy and improved ability to fight at night or in bad weather.

Domestic use: 821 by late this year; all will be upgraded to Longbows.

Foreign orders: 213 including 97 Longbows to Britain and the Netherlands.

GLOBE STAFF CHART/S. McNAUGHTON

America's the muscle in an all-star cast

DUBAI, United Arab Emirates – The Dubai Air Show is an international stage, and it's the Americans who steal the show.

The theater is a tarmac ringed by viewing stands and air-conditioned huts where the world's arms buyers observe the culture and character of the nations selling the weaponry – from Russia with its clunky cargo planes to Sweden with its impeccably precise refueling jets.

The Italian flying team, for example, presented a baroque splendor at last November's show. There were 10 jets streaking in intricate formations, leaving a green-white-red trail of exhaust that lingered like an enormous Italian flag unfurled in the sky. The pilots – with their fashionable jumpsuits, dark sunglasses and slicked back hair – were the playboys of the air show, strutting through the simmering heat on the desert runway after each presentation and signing autographs for spectators.

It seemed that none could outdo the French fighter pilots at the daily exhibitions – their stylish new "multipurpose combat" Rafale jets cutting graceful lines through the sky. And at the air-conditioned pavilions where the executives of the American arms industry watched while sipping Coca-Cola and Budweiser, one statement was repeated over and over: "If we don't do it, the French will."

One senior executive for an American arms manufacturer almost choked on his beef bourguignon at a buffet lunch when the announcer praised the French jet, which competes with the F-16, to potential customers as "fully outfitted for conventional and nuclear delivery."

"We would end up in jail if we advertised that way," said Dwain Mayfield, vice president for marketing at Lockheed Martin, which designed the F-16.

The sales pitch, the American executives said, was clearly targeted toward Pakistan. The French were courting the Pakistani delegation since the US has barred them from receiving sophisticated weaponry because of their suspected nuclear program. What surprised the executives was that the French manufacturer was actually brazen enough to advertise the plane's capacity to deliver nuclear warheads.

"In foreign competition, the French hold back at nothing. . . . So we aren't suggesting that we become prostitutes for technology, but we should be viewing these deals on a case by case basis," Mayfield said. "And we commend the Commerce Department for helping us to fight on an even playing field in the international market."

Alex Picchi, branch manager in Saudi Arabia for Giat Industries Division, a giant French arms manufacturer and exporter, was philosophical about France's reputation for amorality when it comes to the arms trade: "It is part of human nature. There will always be weapons, and there will always be weapons traders. . . . The only thing different now is that the foreign market has gotten very tough. There is some sense of sell it while you can. Make the deals now."

The French were suave and the Italians dramatic, but the Americans were all muscle. And the crowd at the air show was left breathless when an American F-16 cut a 360-degree turn at nine times the force of gravity and then shot straight up, out of sight. American pilots consider the Dubai show to be business, not art.

GLOBE PHOTO/JORGE FERRARI/SIPA PRESS

Decorated Gulf War hero Eric Dodson (left) and top gun colleague David Fleshman at the Lockheed Martin exhibit in Dubai.

And a great deal of business was done here. An estimated $5 billion in deals were cut, from civilian aircraft to military purchases. The furious pace of business at the air show underscored the fierce competition in foreign commerce, a war for profits that has eclipsed the ideological confrontation between East and West that had defined trade since the end of World War II.

By far the biggest deal in the works at the Dubai Air Show – and what could be the biggest international arms deal of the year – was the United Arab Emirates' plan to buy about $5 billion worth of jet fighters. The leading candidates for the contract,

which has not yet been awarded, are Texas-based Lockheed Martin and Missouri-based McDonnell Douglas. The French manufactuers of the newly introduced Rafale also have been lobbying hard for the deal.

To assist the American companies, the Defense, Commerce and State departments "have all put their oars in the water," as one US official in the Middle East put it.

The deal could mean thousands of jobs building the jets in Texas or Arizona and hundreds more making the engines in New England, either at Pratt & Whitney in East Hartford, Conn., or General Electric in Lynn, Mass., depending on who gets that part of the contract. There are a myriad of other contracts accompanying the deal, from missile systems to radar systems, worth thousands more jobs.

McDonnell Douglas has been so eager to win the contract that it made the unprecedented move of announcing a plan to build an $18 million plant in the Emirates to refine oils used in everything from shampoo to paint, hoping to entice the royal family to choose the F-15.

Lockheed Martin also was working hard here to court the royal family, especially Sheik Mohammed, who will make the final decision. When one royal entourage came through the Lockheed Martin exhibit, Tom West handed out sunglasses and baseball caps with company insignias. They are the trinkets of barter at industry shows, and they were handed out before business began in the flight simulator room behind a red velvet curtain, where the takeoff of a fighter bomber and battle conditions are simulated on three large, paneled movie screens.

At night, there were parties. Under the glow of a full moon at the Hilton Beach Club, 1,500 people from the roughly 400 companies and foreign delegations registered at the air show gathered for a banquet.

Lobbyists and marketing specialists for every major American contractor huddled with sheiks and princes. They gorged on pepper steaks and filet mignon flown in from Texas, and shrimp and lamb sizzling on mesquite grills. There were five bars stocked with single-malt scotch and Sam Adams ale. And a 12-piece jazz ensemble from Atlanta serenaded the arms dealers and their customers as the deals were cut into the night.

This kind of opulence seems to symbolize the dubious priorities of many poor countries in spending vast amounts of money on sophisticated weapons. It has driven Nobel Peace Laureate Oscar Arias Sanchez to become a crusader against the international arms trade.

In a recent interview after addressing the United Nations on "The Arms Bazaar," Arias said, "It is the greed of the arms trade that threatens our common future. In a world where 900 million adults do not know how to read or write, 1 billion people do not have access to potable water, the arms merchants bear much of the blame for this poverty."

"The brakes are off the system. ... It has become a money game: an absurd spiral in which we export arms only to develop more sophisticated ones to counter those spread out all over the world. It is very hard for us to tell other people – the Russians, the Chinese, the French – not to sell arms, when we are out there peddling and fighting to control the market."

LAWRENCE KORB

former assistant secretary of defense under President Reagan

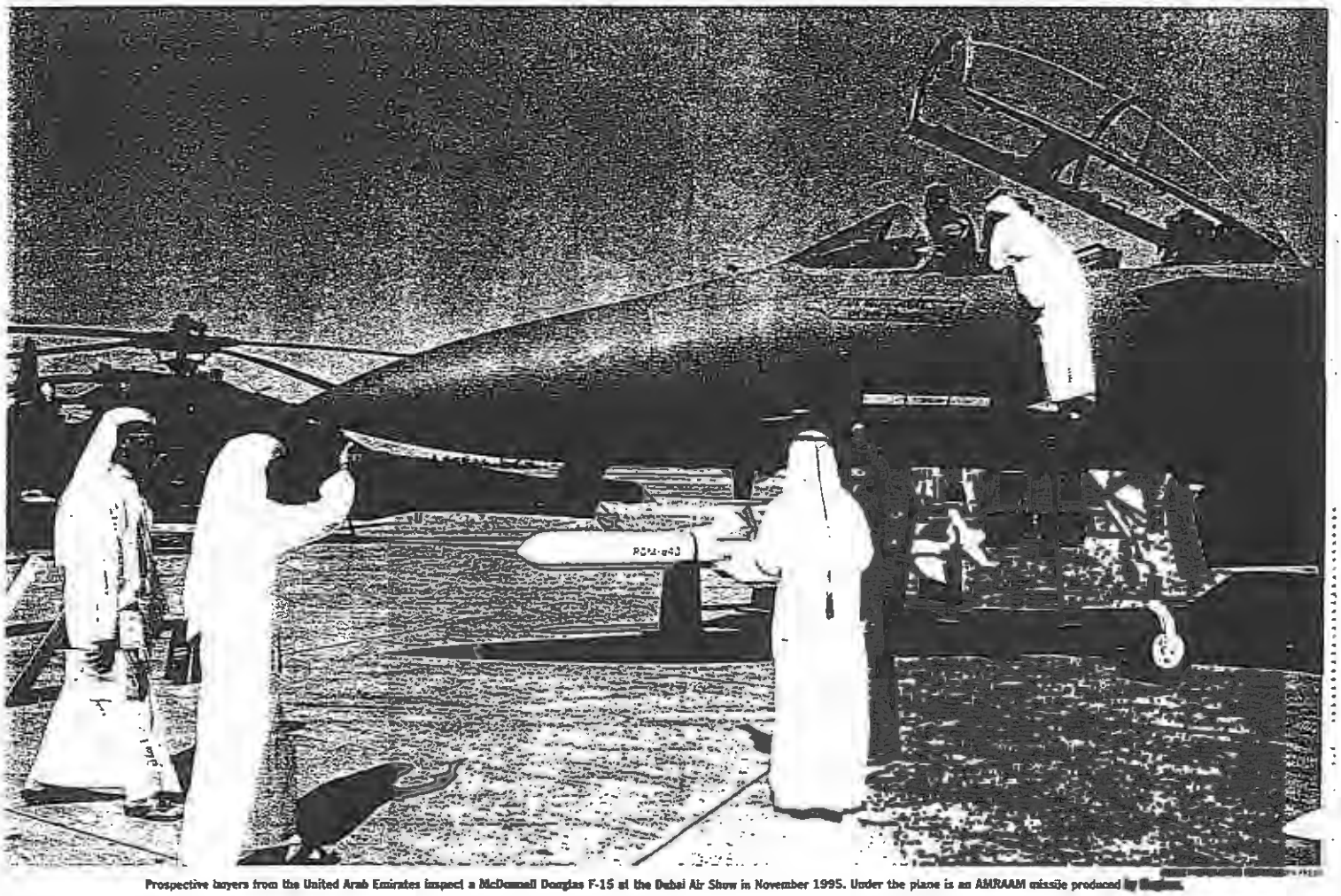
The American military now defines its role as being able to protect US interests in two simultaneous regional conflicts. It seems absurd to be spending $250 billion a year to accomplish that goal while selling billions of dollars in exports to areas where those conflicts are likely to break out. We end up fueling the conflicts we seek to contain.

RANDALL FORSBERG
director Institute for Defense and Disarmament Studies

The problem is that the issue is now viewed only in very parochial terms. Congressmen don't want to lose jobs in their districts. Defense companies see the profits in exports. ... The export boom just becomes one last desperate attempt for the industry to cash out. ... If some of them make less profits, my eyes will be dry.

PAUL WARNKE
director US Arms Control and Disarmament Agency under President Carter

Last year, for the first time, the US produced more fighter planes for export than for American armed forces. By 1999, some 80% of US fighter jets will be made for export.



Prospective buyers from the United Arab Emirates inspect a McDonnell Douglas F-15 at the Dubai Air Show in November 1995. Under the plane is an AMRAAM missile produced by Raytheon.

DUAL USE

Double the money

A field marketing executive for Bell Helicopter adjusted the clarity of the video screen which showed a Cobra attack helicopter with gun mounts tearing through a battlefield. Instantly, the aircraft was transformed into a civilian helicopter hovering in blue skies.

"Like magic," explained Bell's Jeff Cromar, stopping the video and rewinding it. "Conversion of aircraft has been made easy, and it's a big potential market for us."

This process of turning military hardware into "civilian" products, and vice versa, is known as "commercialization" or "dual use" in the lingo of the aerospace industry, a rapidly growing part of international trade.

This type of export is often a legitimate means for the industry to begin to shift away from exclusively military contracts. After all, why not sell helicopters outfit-

ted for emergency rescue or civilian transport rather than those equipped with gun mounts and missile delivery systems? Why shouldn't Raytheon sell its radar systems to commercial airports to improve air traffic control rather than to foreign armies to home in on enemy targets?

But the problem, critics say, is that some companies also end up circumventing American licensing requirements that prohibit arms transfers to nations such as Pakistan, because of its suspected nuclear program, or Indonesia, because of human rights violations.

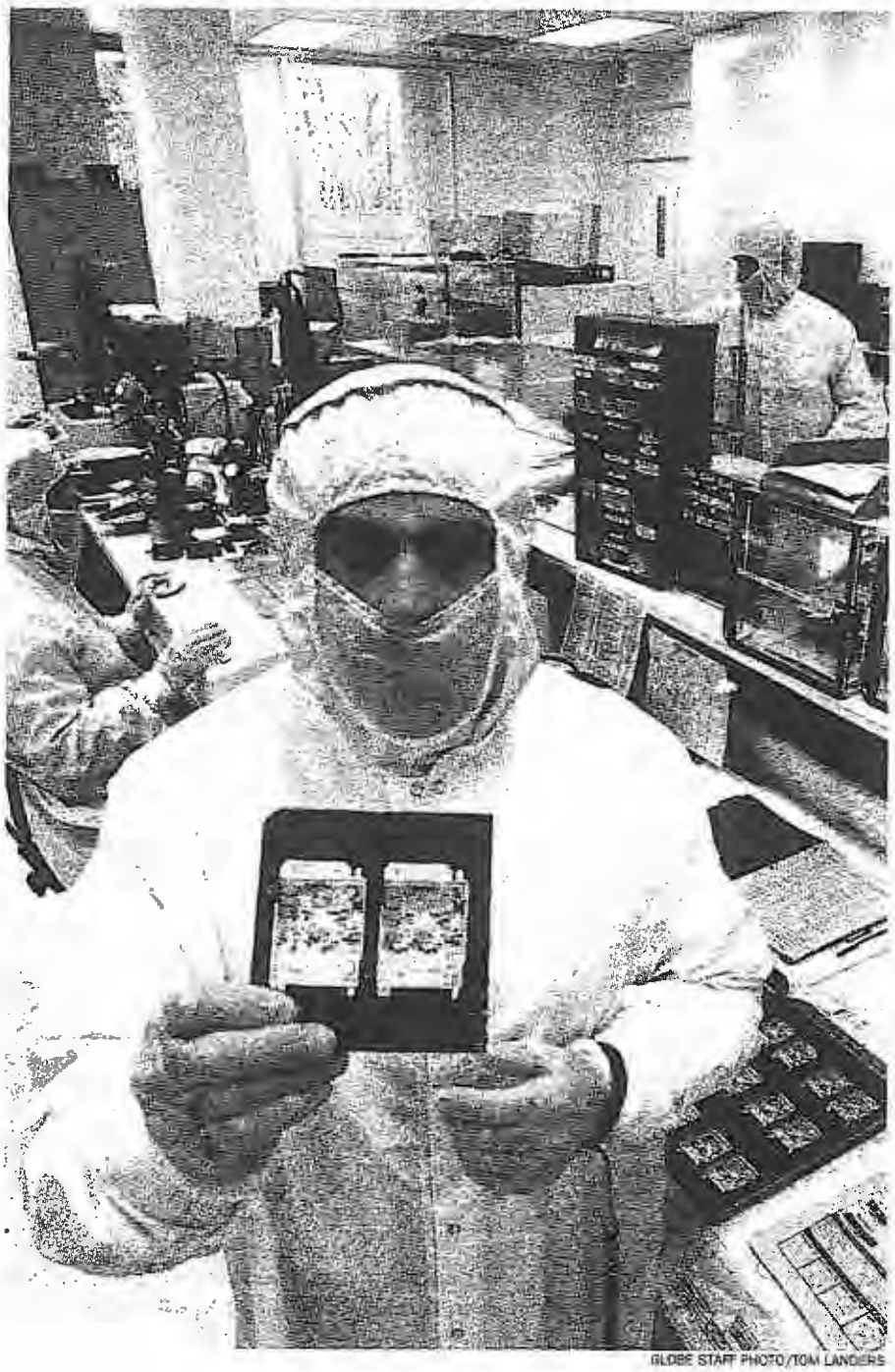
The Clinton administration has actively expanded the "dual use" category and, critics argue, left gaping holes through which defense contractors are simply packaging military hardware in civilian boxes and shipping it off to almost any nation willing to pay. Items falling under this category include everything from refueling jets to digital displays used in cockpits.

The broadening of dual use grew out of impatience by the arms industry with a thicket of federal red tape imposed on exports. It comes amid a shift in which government agency – the Commerce or State department – will determine where, and what types, of conventional weapons and technology can be exported. There also is concern that technology applicable to nuclear weapons could fall through the cracks of overly lax regulations.

"The controls are pathetic," said a Senate staffer specializing in export controls who asked not to be identified. He said "pre-license checks" on transactions are cursory at best and "end-user certificates," which attest that dual-use materials will not be passed on to a third party, rarely verified.

Congress has been redrafting the Export Administration Act to make it more relevant in the post-Cold War world. The current version is preferred by the arms industry because it has allowed the export of more goods without having to go through complicated licensing procedures.

The Arms Export Control Act, which applies only to weapons' transactions, is stricter and more attuned to foreign policy



GLOBE STAFF PHOTO/TOM LANDERS

James DiLorenzo, general manager of Raytheon's Advanced Device Center in Andover, holds two multi-chip assemblies for computers with military or commercial applications.

and national security concerns. Jim Lewis, deputy director of the State Department's Office of Export Policy, wrote in the Winter 1994-95 Harvard International Review that the discrepancy between these two laws reflects a "fundamental ambivalence in the US government between promoting exports and guarding national security."

The subtext of Lewis' article was the existence of an active "debate over commodity jurisdiction" in which the Commerce Department is increasingly exerting its influence to permit the sale of weapons and technology abroad, overriding the Defense and State departments, which "tend to favor national security over economic concerns."

Bell's Cromar, a blunt veteran who flew attack helicopters in Vietnam, expressed impatience with the American political system that requires State Department approval to get a "hunting license," as he calls the licensing agreements needed to even begin to negotiate the legal transfer of a weapon system to a foreign country.

"We are the only country in the world with one and a half arms tied behind our back when it comes to selling in the foreign markets; they've loosened the rope a little, but not much," Cromar said.

From his sales booth at last November's Dubai Air Show in the United Arab Emirates, Cromar explained that the government has denied a "hunting license" for him to sell weapons to Pakistan because of the 1990 Pressler Amendment, which barred arms sales after the State Department determined the country was developing nuclear weapons. But Cromar said "dual use" has given Bell Helicopter, as he put it, "a way around it."

"Right now, we are negotiating a sale of commercial helicopters which can be converted to attack helicopters. It's all perfectly legal."

Cromar openly acknowledged many companies market "integration systems" to convert the helicopters to military use. They include the French company GIAT, Belgian Fabrique Nacional and Premiere Aviation Corp. of Texas, he said. A GIAT representative at the Dubai show confirmed the company sells the kits and has developed a market niche by converting American aircraft to military use.

And Department of Commerce officials at the Dubai show confirmed that it is all legal.

Sally Bath, director of international trade administration at Commerce, said, "Yes, we are aware of that. If the export license (for civilian helicopters) is granted, it's legal. You can't deny Pakistan the ability to buy civilian helicopters. That's just biting off your nose to spite your face. . . . Commerce has worked very hard to expand these markets."

BLOW-BACK

Deadly returns

It's known in military jargon as the "boomerang effect" or "blow-back."

Defined as the threat of American-made weapons being turned against American troops, it is emerging as a reality of military conflict in the post-Cold War era, in which the axioms of East-West tension have been replaced by unpredictable sectarian conflicts and ancient resentments. In virtually every conflict into which the US has sent troops since the 1989 collapse of the Soviet Union – Panama, Haiti, Somalia, Iraq and, to a limited extent, Bosnia – American forces have faced American-made weapons.

Because the federal government and US manufacturers sell so many weapons in so many hot spots, some military analysts say it is not farfetched to envision a scenario where the nation enters a conflict in which it has furnished arms to both sides.

Still, potential dangers of the "boomerang effect" are downplayed by some top military officials and academics. For example, Ethan Kapstein of the Council on Foreign Relations in New York argues that most conflicts have been started by customers of Russia and Western Europe, the most egregious case being Iraq.

"It is a greater threat than it has been in the past, but I would say it is a theoretical problem more than a serious threat," says Bernard E. Trainor, of Harvard's Kennedy School and co-author of "The Generals' War: The Inside Story of the Conflict in the Gulf."

These experts believe US arms exports – even to some unstable regimes – should continue. If a buyer turns hostile, they contend, it will be safer for American forces to fight against American arms because they will know what they're up against.

But critics see that as a perverse rationale to justify a new generation of weapons, unprecedented exports and big profits for the arms industry.

Despite the Pentagon's assurances that weapons are sold only to responsible allies for legitimate defensive purposes, US weapons have been delivered to 50 nations currently involved in ethnic and territorial conflicts, according to William Hartung, director of the World Policy Institute's Arms Trade Resource Center. Official government data on arms transfers provides evidence that US-supplied weaponry is at the center of many of today's most dangerous and intractable conflicts, he says.

• • •

Stoking fires worldwide

Based on years of research, Hartung, who wrote the book "And Weapons For All," has concluded:

From 1985 to 1995, parties involved in 45 of 50 world conflicts have received more than $42 billion in US weaponry. Among the recipients were Turkey, Morocco, Somalia, Liberia, Kenya, Zaire, Pakistan, Indonesia, the Philippines, Haiti, Guatemala, Colombia and Mexico.

In more than one-third of current conflicts, 18 out of 50, the US has provided at least 25 percent of the arms to at least one party in the dispute.

This proliferation of American weapons to regions of conflict has stirred debate at the Pentagon and State Department. The military establishment generally favors the exports as vital to keeping production lines geared up, while some in the State Department fear regional instability and the danger to American forces.

But no split was evident at a September conference sponsored by the Washington-based Defense Preparedness Association. In a chandeliered ballroom of the Radisson Hotel in Alexandria, Va., about 200 of the most prominent figures of the industry, government and military gathered for an all-day symposium. Featured speaker Rear Admiral John W. Snyder Jr. embraced a rationale that his critics believe rivals the most irrational of Cold War policies.

"I want to confront something head-on," said Snyder, a decorated pilot who served on the USS Kitty Hawk when the Iranian revolution erupted or, as he put it, "they went south on us."

The 1979 fall of the Shah of Iran, a staunch American ally, raised the specter that his vast array of sophisticated American weaponry would be used against Americans by the regime of Ayatollah Khomeini.

Said Snyder: "I was much more willing to go into harm's way knowing exactly what we were up against. It's good for the military-industrial base and it's good for the warrior if the guys switch from white to black hats on us. . . ."

The room erupted in applause.

Snyder, deputy director of the Navy's

International Programs Office, which deals with defense security assistance and foreign military programs throughout the world, pointed out Iran has so far been unable to use its American-made weaponry against US troops because of a lack of spare parts and skill. To him, Iran proved that the "boomerang effect" has been exaggerated by critics.

But Randall Forsberg, director of the Cambridge-based Institute for Defense and Disarmament Studies, believes Snyder's argument consists of equal parts arrogance and absurdity. Iran, she says, should serve as a warning.

"The American military now defines its role as being able to protect US interests in two simultaneous regional conflicts, roughly on the scale of the Persian Gulf War," says Forsberg. "But it seems absurd to be spending $250 billion a year to accomplish that goal while selling billions of dollars in exports to areas where those conflicts are likely to break out. ... We end up fueling the conflicts we seek to contain. ... and missing an opportunity for arms control."

It "shows just how crazy the debate has become," she adds.

Lawrence Korb, former assistant defense secretary, is among Reagan appointees who agree: "What does it say about a country that is letting this technology out and then sending our armed forces out in a world where they will more than likely face American-made weapons?"

Korb cites the decision to sell Hawk air defense missiles to Kuwait, noting that Iraq captured about 70 of the missiles during its invasion. "Now we have to develop electronic measures to counter the Hawks," he says. "This is the perfect example of the absurd spiral we get into with this aggressive export policy."

In Iraq, US involvement was far more complex. Since the 1991 Gulf War, mounting evidence has emerged that the Reagan and Bush administrations may have supplied critical military technologies used by Iraq, through covert aid to help Baghdad in its war with Iran. Material also went to Iraq as "dual use" exports, which can include everything from civilian helicopters (which are often later converted for military use) to machine tools and measuring devices used to make and test weapons.

From 1985 to 1990, the US Department of Commerce granted dual use licenses worth more than $1.5 billion to Iraq. Some licenses indicated the shipments had possible military applications. US weapons also reached Iraq inadvertently via third-party transfers through a network of illegal arms dealers that stretched from Chile to South Africa. The network has emerged in ongoing federal court cases and extensive research by the Washington-based National Security News Service, which tracks defense issues.

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Congressional outrage

As Congress began investigating the US-Iraq deals, Rep. Howard Wolpe (D-Mich.) summed up the embarrassment and anger felt by many legislators: "We've been so lax in our enforcement of American laws, we are now finding American-made technology in the hands of the Iraqi forces that are pointing their cannons at American soldiers. That's outrageous."

That was five years ago. Now, it's back to business as usual. In August, the Senate Foreign Relations Committee took up the Clinton administration's proposal to override the Pressler Amendment, which bans sales to Pakistan because of its nuclear program, and send $368 million worth of military equipment to Islamabad. Pakistan long has vied with India to develop a nuclear capability. With a combined population of 1 billion and among the largest armies in the world, the two countries comprise what many specialists believe to be the likeliest scenario for a nuclear confrontation.

Yet only two of the 18 committee members

BLOW-BACK, Page B8

■ **BLOW-BACK**

Continued from Page B6

showed up for the Senate hearing. At one point, only one was present. It is an attendance record that "happens every day" when the various congressional committees have arms exports on their calendars, says Paul Walker, a defense consultant based in Cambridge and former senior adviser to the House Armed Services Committee. About 250 license applications come before Congress every year for arms deals worth more than $50 million each, he says, and in the last five years none has been turned down and few even debated.

And once countries get the weapons, there is no adequate system to ensure they are not shipped on to other nations. "End-user certificates," the licenses overlooked in the arming of Iraq, continue to be inadequately reviewed, according to Walker and others. They also may be virtually impossible to enforce, say industry analysts, who point out that American weapons are ending up in all corners of the world. Take, for example, Islamic countries like Pakistan, Turkey and Saudi Arabia, all of whom, according to the analysts, sent American-made military inventory to Muslims in Bosnia during the brutal civil war there.

Congress also has been slow to embrace code of conduct legislation sponsored by Sen. Mark Hatfield (R-Ore.) and Rep. Cynthia McKinney (D-Ga.). The proposed code prohibits military assistance and arms transfers to non-democratic regimes and violators of human rights. But so far, the proposal remains dead in the water, observers say. The Massachusetts delegation has refused to co-sponsor the legislation despite urging from activists.

A recent study by the Project on Demilitarization and Democracy, a Washington-based peace advocacy group, found the majority of governments receiving US arms exports were non-democratic and responsible for severe violations of human rights. These include major purchasers, such as Saudi Arabia and Egypt, and smaller buyers, like Indonesia and Paraguay. The report found non-democratic governments received 85 percent of the $55.2 billion in US arms transferred during the last four years to developing countries through the Pentagon's "Foreign Military Sales" program. The definition of "non-democratic" was based on the State Department's annual "Country Reports on Human Rights Practices."

The terrorism factor

Sometimes, the export of American weapons and training can aid terrorists. For example, billions of dollars in weaponry funneled through Pakistan during the 1980s on its way to the Afghan Mujahideen in their fight against the former Soviet Union is believed to have been dispersed throughout South and Central Asia. These Mujahideen "freedom-fighters," many of whom were covertly trained and armed by the US military, now express resentment toward Washington for using them as Cold War proxies in Afghanistan, then turning its back on the Muslim cause in Bosnia and supporting President Hosni Mubarak in Egypt in a crackdown on fundamentalists. Several key conspirators convicted in the 1993 bombing of the World Trade Center in New York, for example, were veterans of the Afghan war who met in Peshawar, near the Khyber Pass.

In the craggy mountainous terrain of the ancient trading route between Pakistan and Afghanistan sits Dara, a town known the world over as an open market for arms. There, a Globe reporter was recently approached by brokers with US-made grenade launchers, claiming to have access to Stinger missiles.

There is some evidence Stingers may have made their way to Bosnia. On Sept. 3, 1992, an Italian air force troop transport on a UN supply mission was struck by a surface-to-air missile. All four crew members were killed and the missile was believed to have been a Stinger, according to preliminary UN findings.

Sophisticated weapons represent a more ominous threat and comprise about 85 percent of export revenue, but the trade in light arms is particularly lethal, says Michael Klare, director of the Five College Program in Peace and World Security in Amherst, Mass. The trade in light weapons – such as rifles, grenade launchers and shoulder-fired antiaircraft missiles – is unaccounted for by many monitoring agencies, such as the UN Register of Conventional Weapons.

As a prominent figure in the aerospace industry, speaking on condition of anonymity, puts it: "What kills people is the nickel and dime stuff.

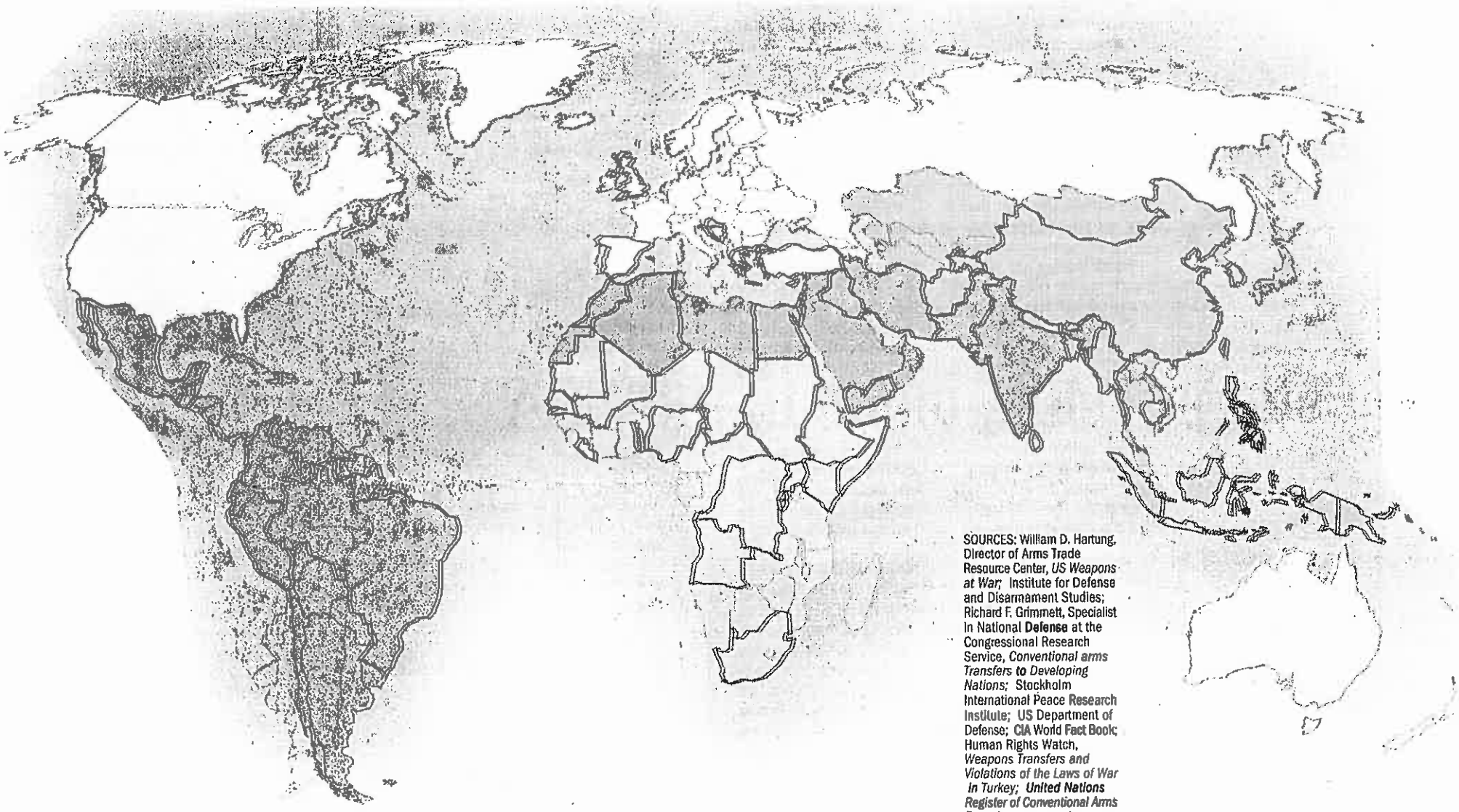
"These large platform weapons systems are dinosaurs, and these developing countries are crazy for buying them ... but saying that outright wouldn't exactly be good for business. So we push the big ticket items."

Arming the world

In a shrinking market, the US is expanding its share of exports, often to countries where advanced weapons raise a host of concerns.

- Sophisticated weapons heighten regional tensions.
- US Weapons have been turned against US troops.
- Expensive weapons divert limited funds in poor countries.
- US-made weapons are used to control internal dissent.

Red borders identify countries where at least one side involved in an ethnic or territorial dispute received weapons or military technology from the US, according to the Arms Trade Resource Center in New York.



SOURCES: William D. Hartung, Director of Arms Trade Resource Center, *US Weapons at War;* Institute for Defense and Disarmament Studies; Richard F. Grimmett, Specialist in National Defense at the Congressional Research Service, *Conventional arms Transfers to Developing Nations;* Stockholm International Peace Research Institute; US Department of Defense; CIA World Fact Book; Human Rights Watch, *Weapons Transfers and Violations of the Laws of War in Turkey;* ***United Nations Register of Conventional Arms Report;*** news reports

The Middle East/North Africa

STEPHEN FERRY/GAMMA LIAISON

BACKGROUND: In the strongest arms market in the developing world, 46 percent of all weapons sold came from the US 1991-94. The US expects to increase its market share to more than 60 percent through 1999. Although Israel and its Arab neighbors are involved in a peace process, conflict periodically erupts on the Israeli-Lebanon border and in Gaza and the West Bank. Other regional tensions simmer. Islamic militants in Egypt and Algeria also threaten regional stability.

Egyptian soldiers train in the desert with US military equipment. The US forgave Egypt a $7 billion debt in return for Egyptian participation in the Gulf War.

Saudi Arabia

From 1987 to 1994, the Saudis were, by a large margin, the leading purchasers of arms in the developing world, agreeing to buy $76 billion in weaponry. The US supplied half of these weapons, two-thirds of those bought after 1991. The Saudis are arming mainly to counter threats from neighboring Iran and Iraq.

The oil-rich kingdom funded major covert arms shipments to both the Afghan guerillas in the 1980s and the Bosnian Muslims in the 1990s.

Iraq

Evidence is mounting that the US was among many nations that inadvertently helped build the Iraqi war machine.

From 1985 to 1990, the US Department of Commerce granted licenses to Iraqi exports for more than $1.5 billion in supposedly civilian products that were converted to military use.

American-made weapons also reached Iraq through third-party transfers. Export licenses were granted to one party, then shipments were transferred through a shadowy network of illegal arms dealers that stretched from Chile to South Africa.

Kuwait

In the aftermath of the Iraqi invasion, arms sales agreements between the US and Kuwait jumped from $2.1 billion (1987-1990) to $3.9 billion (1991-1994), an 85.7 percent increase.

Egypt

US arms deliveries totaled $7.2 billion from 1984 through 1993. In 1994, the US shipped 434 battle tanks, 188 armored combat vehicles, 63 large-caliber artillery systems and 20 combat aircraft.

Israel

$9.5 billion in US arms were delivered from 1984 to 1993. In 1994, 450 armored combat vehicles were delivered. It received 50 used F-16s in 1994 and 1995. And 25 new F-15s are in the pipeline.

Morocco

US arms deliveries totaled $400 million from 1984 to 1993. From 1991 to 1994, the US supplied half of all the weapons acquired by a government that occupies Western Sahara.

United Arab Emirates

The Emirates plan to purchase some $5 billion worth of jet fighters. Lockheed Martin, which makes the F-16, and McDonnell Douglas, which makes the F-15, are vying for the contract.

Bahrain

Agreements with the US accounted for all of the $800 million spent on arms from 1987 to 1994 by this Sunni-led emirate, where hundreds of Shiite Muslim protesters have recently been jailed.

Value of US arms delivered to region, 1987-1994

$34.4 billion

US military aid to region, 1987-1994

$24.6 billion

Latin America/The Caribbean

JAIME RAZURI/ AFP PHOTO

BACKGROUND: A region with a history of dictatorships is primarily governed at the moment by democratically elected leaders. Drug trafficking, guerrilla rebellions, and income disparity between a wealthy elite and desperately poor masses threaten internal stability in many places. 1991-94, the US supplied one third of the weapons.

A cache of arms sits in the Amazon region last November, waiting to be moved to Peruvian bases near the border with Ecuador.

Ecuador/Peru

The 1995 border war was the latest instance of US-supplied weapons used by both sides of a conflict. From 1984 to 1993, Ecuador received $111 million in US military supplies and Peru got supplies worth $136 million.

US equipment, ostensibly provided to fight drug trafficking, was used by Ecuador to seize a remote tract of jungle from Peru.

The US stopped arms deliveries to Peru after the imposition of martial law by president Alberto Fujimoro in 1992, but earlier shipments left a substantial mark on the size and shape of the Peruvian army – and helped it retake the disputed territory.

Mexico

Helicopters supplied by the US to interdict drug trafficking have been used against rebels in Chiapas. The US supplied three-fourths of Mexican military acquisitions in the past decade, $301 million from 1991 to 1993.

Guatemala

86 percent of the weapons imported for the fight against Guatemala National Revolutionary Unity rebels came from the US until aid was officially suspended by President Bush in 1990. The CIA then began funneling $5 million a year to Guatemalan security forces, much of which was used for weapons and training.

Panama and Haiti

Large US weapons transfers, accounting for major portions of both armies, preceded US military intervention in the two nations. The US Defense Department had also helped train members of the military forces in both countries. So when US troops landed there, not only were they facing US weapons but US-trained special forces.

Value of US arms delivered to region, 1987-1994

$1.2 billion

US military aid to region, 1987-1994

$628 million

Turkey/Greece

AP PHOTO

BACKGROUND: Greece and Turkey have long disputes over Aegean islands, Cyprus and Balkan policy. Turkey, in addition, has internal problems with the Kurds. The US provided 62 percent of all weaponry 1991-94.

◀ Greek vessels patrol the Aegean Sea Jan. 30. The Greek and Turkish navies, both US-armed, converged on an uninhabited islet in the Aegean two weeks ago.

Greece

Received US arms worth $3.9 billion from 1991 to 1994, including 28 A-7 Corsair attack jets given away in the Excess Defense Articles Program. Older lines of fighters, tanks and other still-lethal weaponry are given to allies when our military upgrades to more sophisticated equipment.

Turkey

From 1985 to 1994, the US sold $6.8 billion of arms in government-to-government transfers and another $1 billion in commercial military deals. Congress approved $4.3 billion in grants and loans to buy those arms. Turkey gets even more weapons from NATO.

According to the Human Rights Watch, US aircraft and US-designed tanks, small arms, personnel carriers and artillery have been used against Kurdish civilians and rebel fighters.

Value of US arms delivered to region, 1989-1993

$9.5 billion

US military aid to region, 1989-1993

$4.2 billion

Sub-Saharan Africa

JEAN-MARC BOUJU/ AP PHOTO

An intoxicated young rebel, one of many factions vying to control Liberia, terrorizes a street north of Monrovia.

BACKGROUND: Many of the world's weakest economies buy weapons or receive them as foreign aid, rather than badly needed food or medicine. Conflicts tend to be internal and involve light arms rather than big-ticket weapon systems. The US has 5 percent of a market dominated by the British and French.

Chad

The US supplies a quarter of the $200 million worth of weapons imported by a country involved in a 30-year civil war.

Uganda

The government, armed with $10 million of US weapons from 1991 to 1993, is fighting rebels based in the north.

Kenya

Supporters of President Daniel arap Moi have triggered ethnic conflicts in Rift Valley. The US supplied all arms delivered from 1991 to 1993, worth $20 million. Since 1983, the US has delivered $100 million in weaponry.

Liberia

The US delivered weapons worth $33.4 million in the late 1980s, before rebels overran the capital, sparking a brutal civil war and the complete breakdown of the country.

Somalia

From 1979 to 1989 the US supplied the regime of Maj. Gen. Siad Barre with roughly $1 billion in military and economic aid. As unrest increased, the US still provided all of Somalia's weapons. After a 1991 coup, the flow of US weapons stopped, but the existing arsenal fueled to the brutal civil war.

Value of US arms delivered to region, 1987-1994

$453 million

US military aid to region, 1987-1994

$73.2 million

East Asia/Western Pacific

DAVID YANG/AFP PHOTO

Taiwanese President Lee Teng-hui inspects F-16 fighters commissioned last November. China walked away from UN arms control talks in 1992 because of the sale to Taiwan.

BACKGROUND: The US had a 30 percent share of the fastest growing market in the developing world from 1991 to 1994 and expects to increase that share to more than 60 percent through 1999. Fear of China, which is intent on modernizing its military, will inspire many of Asia's booming economies to bolster their own forces.

Taiwan

Its main threat is China, which claims the island as Chinese territory and has conducted missile tests nearby. The Taiwanese bought $2.3 billion in US arms from 1989 to 1993. They claim rights to the Spratley Islands in the South China Sea, along with China, Vietnam, Brunei and the Philippines.

Singapore

The island nation spent $1.7 billion for arms from 1989 to 1993, including $465 million from US sources. In August 1995, it applied to buy high-tech Apache attack helicopters which, if approved, would be the first such weapons sold in Southeast Asia.

China

Received $423.9 million in US weapons from 1984 until the Tiananmen Square massacre of pro-democracy activists in 1989 prompted a US arms cutoff. Increasing threats to Taiwan and a dispute over the mineral-rich Spratly Islands with Malaysia, the Philippines, Taiwan, Vietnam and Brunei heighten regional tension.

The Philippines

By 2004, the government plans to spend $10.6 billion for equipment in a 15-year program to modernize the military. It bought $619.3 million in US arms from 1984 to 1993. Disputed sovereignty over the Spratley Islands has spurred a major spending program, which could include 28 F-16 fighters originally ordered from the US by Pakistan but never delivered.

There is also an ongoing conflict against Muslim rebels.

Indonesia

Received $583.3 million in US weapons from 1984 to 1993. An independence movement in East Timor has been brutally suppressed.

Malaysia

Only six other countries spent more on arms than Malaysia's $2.8 billion from 1991 to 1994. A booming economy has spurred military spending. It relies heavily on foreign arms and will take delivery of eight state-of-the-art F/A-18D fighters in the next two years.

South Korea

Although now a democracy, the nation had a long history of military rule and suppression of dissent. It remains officially at war with heavily armed North Korea. US arms deliveries totalled $2.4 billion from 1989 to 1993.

Japan

Has the world's fifth-largest military budget; bought $8 billion from the US from 1989 to 1993. The defense industry is dominated by 12 Japanese companies that build many systems, including F-15 fighters, under license from US companies using US components.

Value of US arms delivered to region, 1987-1994

$11.3 billion

US military aid to region, 1987-1994

$422 million

India/Pakistan

PATRICK FRILLET/SIPA PRESS

BACKGROUND: These two South Asian countries have fought three wars since Britain granted independence in 1947. Muslim-Hindu religious conflict and regional power ambitions are fueling tensions. Neither country is now a large customer of US-made arms, but both constitute a huge market which the US is poised to enter.

India

Only $317 million of the $12.7 billion in foreign arms India bought from 1987 to 1994 came from the US. New Delhi accuses Pakistan of supporting Indian rebels, training and arming Muslim guerrillas. A five-year-old civil war in Kashmir has claimed more than 12,000 lives. India recently tested a nuclear-capable missile that could reach all of Pakistan's cities.

Pakistan

US military and economic aid was cut off in 1990 because of Pakistan's nuclear weapons program, but the country is still teeming with the $10 billion in arms sent covertly through Pakistan to Afghanistan. The freeze halted delivery of 71 F-16s. Congress has passed a bill restoring $360 million in weapons deliveries.

Arms vendors in Dara, Pakistan, display their wares. Weapons from almost everywhere are available, including leftovers from US aid to Afghan rebels in the 1980s.

Value of US arms delivered to Pakistan, 1984-1993

$1.8 billion

Pakistan received **$1.6 billion** in US military aid, 1985-1990

(India did not buy US wepons or receive US military aid; Pakistan received no military aid after 1990)

GLOBE STAFF GRAPHIC/DAVID BUTLER

Assistance from Keith Webb, Sean McNaughton, Kathleen Hennrikus

TURKEY

Tools of suppression, made in the USA

AGIRLI, Turkey – The earth was scorched black and the vacant, mud brick homes that once housed about 40 families were burned and pock-marked by mortar fire.

Pots and pans littered the ground. A child's bed, broken and charred, lay in a heap outside one hut. And in a distant field, three farmers who used to live in this village in the mountains of southeast Turkey surveyed their once-fertile wheat crop, which they said government troops burned just before the fall harvest.

This village – and hundreds more like it – have been destroyed by the Turkish military using American-made and American-financed weaponry, according to human rights monitoring groups.

Speaking through an interpreter, the farmers described the night last September when soldiers surrounded

GLOBE PHOTO

Bey Kerim, a farmer in Agirli, returns to his village that was destroyed by Turkish government troops in the summer of 1995.

their village and fired indiscriminately, wounding one woman. That was considered a warning. The next morning, the soldiers landed in helicopters. They evacuated everyone and began burning homes and farmlands in this tiny town 20 miles south of Diyarbakr.

"Now we live very bad. We cannot work. We cannot get wood. We are hungry," said Bay Kerim, who is 35. "If the soldiers saw us here, they will arrest us. They may shoot us."

About 2,200 villages in the region have been destroyed, according to a recent report by Human Rights Watch, the international monitoring group. An estimated 19,000 people, many of them civilians, have died in this decade-long war in the far reaches of Kurdistan – a war largely unreported by Western media.

The war thrives on a spiral of violence in which atrocities perpetrated by the separatist Kurdistan Workers Party (PKK) are met, in turn, with more and more indiscriminate force by government troops. Caught in the middle are 2 million Kurds who have been forced from their land in a scorched earth policy that leaves them wandering into cities – without shelter or food – as winter sets in.

In Agirli, as in many other villages, residents refused to become part of the "village guard," a kind of deputized police force for government troops, because they did not want to get caught up in the war. That, in turn, led troops to suspect links to the Kurdish separatist movement. That's when the village was burned.

The remains of villages in southeastern Turkey contrast sharply with glossy US Commerce Department publications promoting Turkey as a "BEM," or big emerging market for arms exports. American corporate icons such as McDonnell Douglas, Lockheed Martin and Raytheon are aggressively selling sophisticated weapons systems here in the face of evidence the arms are being used against civilian populations.

Last November, a heavily guarded airstrip in southeast Turkey symbolized the cynicism of the arms trade in the New World Order.

At the Diyarbakr airfield, US Air Force jets with American flags on their wings sat on the tarmac. They were there as part of Operation Provide Comfort to protect Kurds living on the Iraqi side of the border. On the other side of the tarmac sat the same model American-made and American-financed fighter jets, the difference being the Turkish flags on their wings. These jets have been used to bomb Kurdish villages on the Turkish side of the border, human rights experts report and the State Department concedes.

US military assistance and exports continue, government officials say, because Turkey is a NATO ally which provided critical support to Washington in the Persian Gulf War and because the country is increasingly viewed as a crucial buffer against neighboring Iraq and Iran.

It's also been great business for the arms industry. In the last 10 years, Congress has appropriated $5.3 billion in military aid (grants and loans to purchase weapons) for Turkey, making it the third largest recipient of US military aid behind Israel and Egypt. Overall, Turkey has been on a weapons buying binge: from 1985 to 1994 it has purchased some $7.8 billion in weaponry, approximately 80 percent of it from US manufacturers.

In a State Department report, the US concedes the Turkish military has been responsible for human rights violations. The June 1, 1995, report said there are "US weapons being used by the Turkish military in operations against the PKK during which human rights abuses have occurred." But the report fails to make the connection between the US-supplied weapons and actions of the Turkish government. Congress also has failed to enact legislation that would prohibit all arms sales to Turkey pending improvements in its human rights record.

In a November 1995 report titled "Weapons Transfers and Violations of the Laws of War in Turkey," Human Rights Watch documented the use of US-supplied weapons through interviews with scores of civilians and Turkish soldiers. It also established a pattern of human rights violations by Turkish troops, ranging from torture to indiscriminate firing on civilians. A few of the eyewitness accounts include:

■ March 1994. In Kuskonar, US-supplied F-16s buzzed the village at a low altitude and then returned to make two bombing runs, dropping a total of four bombs. Twenty-four people were killed, including 12 children. Two days later, there were more air raids, killing 18 more people.

■ August 1992. In the village of Sarnak, Turkish security forces allegedly attacked with US-supplied M-48 and M-

60 tanks, 105mm artillery, M-113 personnel carriers, M-16 rifles and LAW antitank rockets. Twenty-two civilians died and 60 were injured.

Human Rights Watch reported "gross violations of human rights on both sides of the conflict." In its conclusion, the 171-page report said, "The US is deeply implicated in the Turkish government's counterinsurgency policy and practices through its provision of arms and political support, and is aware of the abuses being committed, but has chosen to downplay Turkish violations for strategic reasons."

Despite the findings and the organization's call for an end to military sales and aid to Turkey, as required by the US Foreign Assistance Act, the booming market for exports to Turkey continues.

Just weeks after the Human Rights Watch report came out, the Clinton administration signed off on a deal to sell Turkey 120 Army Tactical Missile Systems. A handful of legislators, including Sen. Patrick Leahy (D-Vermont), opposed the proposed $135 million sale, which was presented to Congress with a 15-day notification period that landed in the middle of the holidays. But it was not held up. A letter responding to Leahy's concerns from the State Department's congressional liaison, Wendy Sherman, said: "It is important now to demonstrate we are a reliable ally and that Turkey's legitimate defense needs will be met."

Nuzhet Kandemir, Turkish ambassador to the United States, was somewhat more crass in his assessment of why Washington supports the transfer of so many arms without insisting on an improvement in Ankara's human rights record: "If we do not buy from the US, there will be other places where we can buy them. There is certainly an abundance."

Equally blunt in his analysis of the American need to sell arms to Turkey was a US official based in Ankara who is an expert on defense matters: "If we don't do it, someone else will. . . . So it comes down to protecting American jobs and keeping our production costs for our own military down."

The American official, who has had many years experience in the region and who spoke on the condition his name not be used, added that the weapons transfers also provide "an entree" for American business into Turkey's broader export markets: "If you start with weapons, you can follow with pantyhose, hightop sneakers, and everything else. It is all part of the process. They become more psychologically and philosophically connected to us. There is a logic to it."

H.H.A./SIPA PRESS

Turkish troops stand atop a hillside strewn with the bodies of Kurdish anti-government rebels near the Iraqi border in June 1993.

It is the greed of the arms trade that threatens our common future in a world where 900 million adults do not know how to read or write, one billion people do not have access to potable water. The arms merchants bear much of the blame for this poverty. ... Sadly, the peace dividends seem to have escaped our grasp.

OSCAR ARIAS SANCHEZ

Nobel Peace Laureate, former President of Costa Rica

CONVERSION

High-stakes gambling

GROTON, Conn. – For Leroy Silkowski, the future is a crap shoot.

A welder with 17 years in the shipyards here building Navy submarines, Silkowski was facing his last day of work. And on the morning before his pink slip took effect, he stood in line with about 200 people waiting to apply for openings at one of the only places around here that's hiring: the newest gambling casino.

At the Mohegan-Sun Resort in Montville, most of those shuffling their feet on a cold morning last month were among the 5,000 who've lost jobs over the last five years at the nearby Electric Boat shipyards or the 3,000 more to be laid off this year. Some wore the bulky sweatshirts and boots of laborers; others the pressed pants and crisp collars of middle management. Nearly all would take massive cuts in pay and benefits if they land

a job as a floor-sweeper, dealer or pit boss.

"We used to have jobs you could be proud of," says Silkowski, 41. "Now we end up shuffling cards for five bucks an hour."

For James Mellor, chief executive officer of General Dynamics, the defense industry giant which owns the Electric Boat shipyards in Groton, it was another busy day of meetings at the corporation's Falls Church, Va., headquarters. Mellor made $11.3 million in 1994 in salary and stock options as head of a company that gets nearly 100 percent of its contracts from the federal government and has shrunk the company's workforce by some 70,000 since 1989 through layoffs, attrition and the selling off of divisions. Mellor's compensation for this one year would cover a $50,000 annual salary to each of the 200 people in line at the casino, with $1.3 million left over for Mellor.

This vast gulf between laid off workers and senior executives is widening as the defense business faces the stark realities of the post-Cold War era, and it reaches to the core of the debate over the future of the US defense industry.

The question is whether these massive plants will continue to build what some see as relics of a bygone era, like Electric Boat's Seawolf submarine, or shift to non-military products, such as high-speed rail cars, freight boats or steel structures used in tunnels and bridges.

This is a debate over what is known as "conversion," a reckoning of the future with the past. And nowhere is the debate more important than in New England, which relies more on defense dollars than any region.

The Clinton administration, which once embraced conversion with religious zeal, has all but abandoned the idea and stood by while federal funding was gutted by Congress in the 1996 defense budget.

To those hurt most by an industry writhing with change – organized labor as well as middle managers, scientists and engineers – it may be the only way they can continue to use their skills and keep their jobs. They, as well as arms control advocates and some industry analysts, believe that if the federal government commits the resources, conversion can turn billions of dollars of public investment that went into defense during the last four decades into a newly profitable, and practical, industrial policy of the future.

But the top corporate officers who steer the defense industry, and who have reaped unprecedented profits from downsizing through soaring stock prices and hefty annual salaries, are more eager to continue to promote what Mellor calls the industry's "core area of success": big government contracts to produce nuclear submarines.

The executives are joined by many leaders in the military establishment who believe it is dangerous to put too much emphasis on conversion because it could leave the nation with an inadequate production capability in the event of a major military conflict. They also fear conversion could undercut development of the next generation of weapons.

Joel Johnson, vice president of the Aerospace Industry Association, is blunt about conversion: "I think it's bull. . . . Big companies are highly specialized technologies. No one suggests that the automotive industry should shift to toasters."

Norman Augustine, chief executive of Lockheed Martin, the nation's biggest defense and aerospace corporation, has been outspoken in his opposition to conversion. Famous for his aphorisms, Augustine has characterized conversion efforts as "unblemished by success."

He summed up what he feels are its failures this way: "It has proved very difficult to produce pigs by running the sausage machine backwards."

Most industry leaders argue the cost of conversion is too high and markets for products too difficult to develop. The defense industry has developed a culture of working to strict specifications, a management model that has proven unwieldy in commercial markets. Conversion's failures are well-known, such as Grumman's effort to build buses and General Dynamics' claim to have lost money on its $20 million contract to build eight treatment tanks for the Massachusetts Water Resources Authority.

"We lost $2 million," says General Dynamics spokesman Neil Ruenzel. "Why? Because our people work with an attention to detail and a precision that is not always required in commercial markets."

But not all executives are opposed. "Conversion is something we really will have to work at," says William Swanson, vice president of Lexington-based Raytheon. "It won't be easy. But that doesn't mean we can't do it."

Raytheon has been innovative in its efforts to convert military technology to commercial uses. It has taken transmit-receive modules on microchips developed for military communication and converted them for use in the IRIDIUM global wireless communication system. It has marketed its Global Positioning Systems for use in the transportation industry, and it has taken infrared imaging used in heat-seeking missiles and converted it for use in helping fire rescue teams locate people in burning buildings.

"The possibilities for expanding our defense technology into the commercial marketplace are endless," Swanson says. "And we think this area is what sets us apart from a lot of our competitors."

The confidence in conversion seems to be directly related to the percentage of military contracts a company holds. Lockheed Martin, for example, relies on defense contracts for more than 80 percent of its business. Raytheon is about 35 percent defense-dependent, although that figure rises to more than 80 percent at its plants in Massachusetts.

Conversion is not a new idea. Beating swords into plowshares is as old as the Bible, as old as war itself. It took on a modern form after World War II, when the US began in earnest to turn the massive war machine it created to fight Germany and Japan into a consumer industry to produce cars, televisions, trains and construction materials. And it helped usher in one of the most prosperous eras in American history.

More recently, it has been championed by Labor Secretary Robert Reich, who in 1993 was spouting a kind of evangelical fervor: "It's a wonderful opportunity. I don't think there is any question we have

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GLOBE STAFF PHOTO/BILL GREENE

Former Electric Boat employee Vin Vacca, who now has his own lawn care business, applies for a job at Mohegan-Sun Resort, a casino being built on a former defense plant site.

We used to have jobs you could be proud of. Now we end up shuffling cards for five bucks an hour. It doesn't matter if you worked with your hands or you sat behind a desk, it's all over. ... The good jobs are gone.

LEROY SILKOWSKI

laid-off welder who worked 17 years at Electric Boat in Groton, CT.

I don't think there is any question we have to convert, and in the long term it will be good for our country.

ROBERT REICH

US labor secretary, in a 1993 speech. Three years later, federal funding for conversion is slashed.

I think [conversion] is bull. Big companies are highly specialized technologies. No one suggests that the automotive industry should shift to toasters.

JOEL JOHNSON

vice president of the Aerospace Industry Association

■ CONVERSION

Continued from Page B10

to convert, and in the long term it will be good for our country. It will be a different way of viewing the national purpose."

And President Clinton, addressing Connecticut defense workers that same year, said he was allocating conversion funds to "give people a chance to go back to work in a peacetime economy, to contribute to the American Dream."

The White House pushed through roughly $450 million in each of the 1994 and 1995 defense budgets to fund the Technology Reinvestment Program, as the conversion effort is called. Still, the amount was far less than the billions in federal subsidies helping the industry to access the $40 billion foreign export market. And this year, in a move that has stunned conversion advocates, the 1996 defense budget contains only $195 million in reinvestment funds. Next year, it's expected to be phased out.

Critics say the administration's apparent abandonment of conversion is not only pushing the industry into increased foreign exports, but massive mergers also subsi-[illegible]zed and supported by the government.

What angers Greg Bischak, director of the Washington-based National Commission for Economic Conversion and Disarmament, is that the export market is such a bad deal for the taxpayers who subsidize it. Successful conversion efforts, he says, could propel much hotter export markets, such as environmental technologies. Arms exports are a $40 billion per year market at best, which has fallen more than 30 percent since 1989, and will continue to fall, analysts predict. The environmental export market is $100 billion and expected to double by the year 2000.

"Why throw our money away so the industry can make billions selling weapons to countries who don't need them?" he asks.

Ann Markusen, director of the Project on Regional and Industrial Economics at Rutgers University and co-author of "Dismantling the Cold War Economy," says the ongoing mergers in the defense industry severely erode conversion efforts. Since the Northrop takeover of Grumman last year, she says, conversion has "come to a standstill."

Markusen sees another "dark side" to the mergers: The stronger and bigger survivors of the post-Cold War era will wield enormous power to persuade Pentagon officials of the indispensability of its current products and plans for new generations of military hardware.

General Dynamics, which owns Electric Boat in Groton, is generally considered the embodiment of the industry's recalcitrance to conversion.

Every day, thousands of workers clutching lunch buckets and hard hats pour through Electric Boat's gates to build a $2.4 billion submarine – one of the most expensive weapons ever.

It is soon to be outdated by the less expensive and more versatile New Attack Submarine (NAS), designed to handle post-Cold War regional conflicts, some defense analysts say.

Like the B-2 bomber, the Seawolf is credited with being one of the monstrously expensive programs in an arms race that helped pull the Soviet Union off balance and erode its economy, leading to the collapse of the rival superpower. Both systems accounted for most of the $7 billion added to the defense budget this year.

Now, rather than discontinuing the Seawolf, the production line goes on, backed by a constellation of political power that ranges from Clinton to Sen. Bob Dole to New England liberals like Sens. Edward M. Kennedy and John F. Kerry of Massachusetts, and Connecticut's Christopher J. Dodd.

Kerry has not only endorsed the Seawolf, he has expressed a disdain for conversion that has raised the ire of many union officials. When asked by local union leaders about conversion at the North Shore Employment Conference in 1994, Kerry said, "I'm not going to come here and shill for you. I'm not in favor of the government making private sector choices."

It's a position taken by many politicians, says Paul Walker, former senior adviser to the House Armed Services Committee. "Conversion is still tinged with the idea that it's un-American and anti-defense. In reality it may be the key to building longterm economic security. Conversion is the future."

Nothing typifies a retreat to the past or the parochialism of the defense debate these days more than the Seawolf, critics say. Even some of the workers interviewed outside the plant sense the massive waste in what they are building.

Jon Adams, 32, a machinist at Electric Boat for 14 years, was coming off the day shift as the string of small bars just out-

CEO salaries rise as jobs are lost

With a downturn in defense spending and a wave of mergers, these six CEOs cut 178,000 jobs from 1992 to mid-1995 while giving themselves generous pay raises. In fact, their average compensation more than tripled – from $1.3 million in 1989 to $4.0 million in 1994, according to a government report. Some even received bonuses, like Loral's Bernard Schwartz, who is expected to get $18 million this year for arranging the sale of Loral's defense division to Lockheed Martin — a change that will mean thousands of layoffs. Most of these companies rely on government contracts.

Top paid CEOs	1994 pay*	Company	Defense as a percentage of all business	Jobs lost 1990 to 1995
James Mellor	$11.3 million	General Dynamics	100%	35,465
Bernard Schwartz	$4.6 million	Loral Corp.	80% to 90%	550
Harry Stonecipher	$1.6 million	McDonnell Douglas	75%	42,076
Dennis J. Picard	$2.5 million	Raytheon	35%	16,543
Daniel Tellep	$2.4 million	Lockheed Martin	80%	47,431**
Krent Kresa	$1.6 million	Northrop Grumman	90%	35,876***

* Includes salary, bonuses and stock options exercised.

** Figure reflects changes in Lockheed and Martin Marietta, which merged in March 1995. Lockheed Martin plans to cut 12,000 more jobs by 1999.

*** Northrop bought Grumman for $2.1 billion in 1994. Figure reflects changes in both companies. Northrop Grumman plans to eliminate 5,000 jobs this year.

SOURCES: Defense News; General Accounting Office; National Commission for Economic Conversion and Disarmament.
GLOBE STAFF CHART/S. McNAUGHTON

side the gate filled up with those still clinging to jobs.

"You gotta wonder how many times do we need to be able to blow up the entire world – 200 or 300 times over?" asks Adams. "It's like if I mounted a 60-caliber machine gun in my window. My neighbors would call me a madman."

Just up the hill from the plant is the Metal Trades Council union hall, where president Ken Delacruz says he gets furious at the waste of skilled American labor every time he rides a subway car in Boston, Washington or New York.

"Check out the Green Line in Boston sometime. Those trains are made in Japan. Now you tell me why we shouldn't be making those right here," says Delacruz, in between answering calls from some of the 300 workers who just got pink slips.

Among the suggestions he and other labor leaders have put forth are building the tubes for tunnels, such as the ones used in Boston's new Third Harbor Tunnel project, and high-speed rail cars.

"Our defense industry is a national asset. We paid for it with our own taxes. If we don't do something about it, we're going to lose the whole thing," he says.

The 1990s answer to conversion seems to be what's happening at the new casino where Leroy Silkowski and other laid-off Electric Boat employees applied for work.

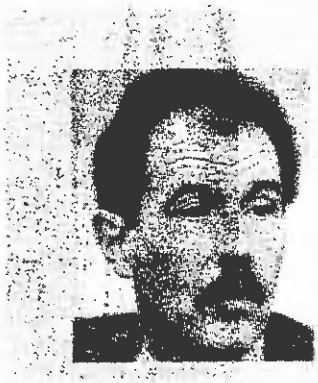
Crews were still working on the Mohegan-Sun Resort, being built on the site of United Nuclear Corp., a mothballed defense plant that once made reactors.

"We are taking the old plant and utilizing it in part of the structure of our casinos," says Mitchell Etess, the casinos's vice president of marketing. "We want to take those people who worked at Electric Boat and teach them how to make slot machines."

It's not exactly an appealing solution to many skilled welders who were proud to be part of the nation's defense, but they'll take what they can get.

"It doesn't matter if you worked with your hands at the plant or you pushed paper behind a desk; the whole thing is over," Silkowski says. "So why can't we cone up with a new way to put all this skill to use? . . . This is America, right? Seems to me like we could figure that out."

Copy Editor: Gary Peterson; Designers: Aldona Charlton, Sue Dawson; Photo Research: Susan Wadlington; Library Research: Richard Pennington; Paul Quinn-Judge, Randolph Ryan and Aaron Zitner of the Globe staff also contributed.



I'm looking at taking a 50 percent pay cut – if I can find a job. ... You give 14 years to a company and they say, 'See you later.' You feel used, abused and thrown aside. And then you find out the top executives are cashing in. ... What's going on here? ... I don't think there's a politician around who understands.

BRUCE DOWNING

engineering manager laid off July 21, 1995, EG&G Corp., Wellesley

At six plants, 178,000 workers were laid off over three years as top executive pay tripled.

GLOBE STAFF PHOTO/BILL GREENE

On Jan. 17, Electric Boat workers leave the shipyard in Groton, Conn., two days before 300 more pink slips were to take effect.

OFFSETS

In these deals, American workers pay

They are the arms industry's sleight of hand – a shell game in the world marketplace where American workers seem to lose almost every time.

Known as "offsets," these complex business agreements have become part of the structure of deal-making in the export of American weaponry. They are arrangements in which US firms clinch deals by transferring production jobs, along with weapons systems, to buying countries. Sometimes they also promise to invest in other profitable ventures in the host country. Such incentives to buyers are designed to offset the price of the weapons, making them more affordable.

Despite the industry's assertion that arms exports preserve American jobs, offsets actually result in tens of thousands of jobs and billions of dollars in capital being shifted abroad, according to "A Call to Action," a study of offsets by a consortium of most of the largest unions in New England's defense industry.

The complex, multilayered offset deals allow manufacturers to make the same – sometimes even record – profits, while American workers end up with pink slips often justified as "downsizing."

Offset deals come in many forms.

There are "direct offsets," which are essentially co-production or subcontracting agreements with the purchasing countries. One example is the Lockheed Martin deal that allows about 2,000 Turkish laborers to assemble F-16 fighter jets in Ankara while 2,000 jobs disappeared from a Texas plant where the planes used to be built. Lockheed officials said that had they not agreed to the arrangement, thousands of jobs would have been lost at F-16 parts plants.

In Massachusetts, General Electric in Lynn contracted with a company in the Netherlands to manufacture rear flaps and seals for F-110 jets to help clinch the sale of helicopter engines to the Dutch monarchy. That deal meant more sustained production for the Lynn plant, but sent 15 jobs to the Netherlands in the process. Those who used to manufacture the flaps soon will be added to the list of about 4,000 GE workers laid off since 1986. A local union official who fought against the deal and asked not to be named, said, "They stopped doing bribes in cash, now they do it in American jobs."

There also are more complicated "indirect offsets." Under these arrangements, the manufacturers invest in other businesses, everything from oil refineries to hotels. In a landmark deal in the mid-1980s, a US manufactuer secured the sale of fighter jets to Spain by buying huge quantities of Spanish shoes to sell in the United States, according to Commerce Department officials.

The department protects details of these agreements, citing "proprietary business information." So it is difficult to calculate the extent to which these kinds of agreements, like the one for Spanish shoes, may have harmed an already crippled New England shoe industry and eroded America's manufacturing base.

But a study titled "Jobs on the Wing" last year by the Economic Policy Institute, a Washington-based think tank that focuses on labor issues, concluded that 469,000 American jobs will be lost in the next 20 years due to increased foreign competition caused by offset deals and the resulting transfer of technology.

Compounding the problem, the report said, is government funding of offset deals. For example, in the Turkey F-16 co-production arrangement, the purchase price was $4.3 billion, and $3.2 billion of that was provided by the United States through foreign military financing grants and loans. Now, Turkey is selling some of those same F-16s to Egypt, which also is using American financing to buy them. As the report's author, Randy Barber, put it: "It's a fool's game."

The General Accounting Office, in a June 1994 report, cited similar deals in Israel, Egypt and Greece. The GAO study concluded: "To some extent, the recipients' goals in seeking offsets conflict with US goals."

Even industry leaders express distaste for offset deals, which have been around for more than 20 years.

"No one likes them," said Mark Sullivan, who oversees offset deals as McDonnell Douglas' director of industrial participation programs. " But the fact remains that they are enablers that allow us to access markets."

John Richards, head of the Commerce Department's Office of Strategic Industries and Economic Security, concedes offsets are "not the greatest arrangement." But he said: "If we didn't do the offset deals, it may mean we wouldn't get the sale. So you have to look at the jobs we do create here as a plus. . . . Sixty percent of something is better than zero percent of nothing."

Some nations do so much business structured around offsets that they have developed a minimum requirement for them. Saudi Arabia cuts no deal without an offset of at least 25 percent, and the government has its own Economic Offset Committee. Some Saudi companies, such as Advanced Electronic, which grew out of an offset deal in 1981 for American AWACS surveillance planes, are manufacturing the software and circuitry used in fighter jets sold by American corporations abroad, according to Abdel Al Juber, an aide to the Saudi ambassador to the United States. Some offsets have gone as high as 100 percent of the sale.

Richards conceded the transfer of jobs and capital in offsets is an area of concern at the Commerce Department. "We are studying this now," he says.

The offsets are also part of an international structure of deal-making that contributes to what is known as the "globalization" of arms manufacturing. There are other buzzwords for shipping American defense manufacturing jobs and technology overseas. They include: "co-production," building parts of the weapon abroad; "sourcing," using foreign-made parts or components; and "joint ventures," which are entities owned by companies from two nations.

Ric Casilli, vice president of Local 201 of the Massachusetts International Union of Electrical Workers, illustrated the depth of "sourcing" with a detailed diagram of a GE engine with arrows showing a dozen parts manufactured in Italy, Korea, France and Austria.

"We figure we lost 300 jobs to these overseas companies who are making parts for GE engines," said Casilli.

Just last month, union workers at the Ametec plant in Lynn launched a letter-writing campaign against a Defense Department contract awarded to Singapore to build helicopter engine gyros that used to be manufactured in Lynn.

"The arms industry itself is losing its national moorings," said William Keller, author of "Arm in Arm: The Political Economy of the Global Arms Trade." "It displaces US military subcontractors and US workers. And it eventually will destroy our ability to control the flow of weapons and technology throughout the world."

PHOTO BY JOYCE MARSHALL/FORT WORTH STAR-TELEGRAM

General Dynamics workers outside plant in Fort Worth, Texas, in June 1992 protest an offset deal in which only 12 of 120 planes sold to S. Korea were to be fully made in the US.

We figure we lost 300 jobs to these overseas companies who are making parts for GE engines. ... It's like a lot of small cuts that eventually leave you bleeding to death.

RIC CASILLI

vice president Local 201 Massachusetts International Union of Electrical Workers

Every day I see firsthand how hard it is. ... You just wonder what this country's headed for.

SHERRY MILLER

laid off from MITRE Corp. in Bedford. Now teaches seminars to the unemployed

That was good work. We were defending the country. ... Now they move the work overseas and they lay us off. ... This is supposed to be for America's defense. It should be built here. ... What am I going to do?

ANGELO LOSANNO SR.

machinist at General Electric in Lynn for nearly 20 years until he was laid off in 1991