The Case for Converting the Military in Canada

JOE MIHEVC

The disarmament movement has grown tremendously around the world over the last eight years. Rallies in Europe have brought millions of people to the streets. In Canada, thousands have attended rallies, written letters, planned vigils and lobbied the government to change its policies. However, there have been no immediately tangible victories for the peace movement. Cruise Missiles are still being deployed in Europe, they are still being tested and developed in Canada, and military budgets are expanding more rapidly than ever in virtually every country around the world. The Cruise Missile and Pershing II issues are already starting to
Studies in Political Economy

take a back seat to Star Wars (Strategic Defence Initiative). The disarmament movement is realizing that the manifestations of outrage is not enough to reverse the growing trend in militarism. A more comprehensive analysis and strategy is needed. The peace movement's rising interest in economic conversion marks its attempt to deal with one set of root causes of militarism, namely, the economic factors that feed the arms build-up.

Economic conversion is also being considered seriously by a second interest group, for whom the starting point is jobs rather than peace. Inflation, unemployment, runaway shops, free trade initiatives and cuts in social spending have forced the labour movement to re-examine the roots of the recent assault on their organizations and on the lives of working people. Converting an economy from one that is bent on making profits and centralizing power, to one that is geared towards providing meaningful employment is a new priority for many in the workers' movement (which includes the unemployed).

The dominant view, being challenged by economic conversion proponents in both the peace and labour movements, is that military spending provides jobs and stimulates the economy. The view that war production provides important engines of economic growth has its most recent roots in the Depression of the 1930s, and in World War II (WWII). The present "military Keynesianism" in the United States is argued to be parallel to the Keynesian state intervention occurring after WWII in the economies of the West. In contrast to the destruction WWII brought to Europe and Japan, the war brought prosperity to North America, following the conquest of the Great Depression through massive military expansion. "Everyone saw the economy producing more guns and butter. Economically speaking Americans had never had it so good." Thus the view that big military budgets mean jobs and prosperity for the nation gained public acceptance. Every American administration since WWII, whether Democrat or Republican, willingly bolstered the Pentagon budget under the pretense that it would stimulate the economy.

Canada's experience of WWII was similar to that of the US inasmuch as Canadians obtained jobs, and the country revived itself economically with the military contracts that followed the
Depression. The argument that military production is good for Canadian jobs, and that it gives a technological edge to industry, has been used since WWII.

It is precisely this widely accepted belief, based on a misreading of the elements that ended the Depression (any massive government priming would have ended the Depression) that must be overcome. Conversion politics seeks to address these popular misperceptions.

Because military production is a dominant feature of the world economy and an increasingly important feature of the Canadian economy, labour and peace groups find themselves aligned in a new coalition. Conversion politics and economics merge the interests of these two large interest groups and the analysis developed here will seek to identify how these two constituencies find common cause in opposing military production.

This paper's focus is on the case for conversion in the Canadian context. Militarism in Canada has its own peculiar face; thus conversion in Canada requires a unique analysis and strategy. This paper will note the unique features of the Canadian defence establishment, particularly in its peripheral and dependent status with respect to the US Pentagon, and the subsequent conversion implications. This paper also links an anti-military argument with a Canadian economic nationalist argument with the aim of elucidating the grounds upon which liberals and socialists might be able to form some kind of united coalition against military production.

We need to develop an understanding of the "nuts and bolts" of reversing militarism. This is the direction in which the disarmament and labour movements need to continue to move over the next five to ten years. Conversion groups, conferences and discussions are 'proliferating' in Canada, the US and Europe. People's anger and fear concerning the possibility of nuclear war, and their despair over employment prospects has prompted a reconsideration of the benefits of weapons production.

The Continentalization of Canadian Defence Any discussion of Canada's military establishment must include an analysis of foreign domination of the Canadian economy. In the current free trade manoeuvring, the Mulroney government has sought
to persuade the Canadian public that the economic realm can be kept separate from political and cultural issues. It is a premise of this paper that economic issues form a key context in which political decisions on foreign policy and defence are made.2

Canada's defence establishment is not geared primarily to any Canadian national defence needs. As early as 1920, Prime Minister Laurier had claimed: "You must not take the [Canadian] militia seriously, for though it is useful for suppressing internal disturbances, it will not be required for defence of the country, as the Monroe Doctrine [of the US] protects us from enemy aggression."3 Until WWII, there was no significant defence industry in Canada, except Royal Canadian Air Force involvement in the aircraft industry starting in 1935. Canada at this time was still heavily dependent on Great Britain for its weapons. Even when a Canadian delegation went to Washington in 1938 seeking access to US-made armaments, the Americans response was cold. With the outbreak of WWII, Canada's major interest was in the economic benefits and supply considerations of shipping war material to Great Britain. This proved profitable to Canadian weapons manufacturers, who sold 66% of their armaments to foreign governments, largely Great Britain. Thus Canada's weapons industry, though always eager to export armaments to the US, was much more integrated into the British production system throughout WWII.

During the war however, a significant change occurred between the US and Canada. Fearing an Axis invasion into North America, President Roosevelt and Prime Minister King issued the Ogdensberg Declaration in 1940, which committed both countries to the defence of the continent. After WWII, the US continued to press for continental defence arrangements. At least one official, General Maurice Pope, Canadian chair of the then-newly formed Permanent Joint Board on Defence, was not totally pleased with the pressure being exerted: "To the Americans the defence of the US is continental defence, which includes us, and nothing I can think of will ever drive that idea out of their heads."4 The Ogdensberg Declaration can be looked upon as the symbolic beginning of the integration of Canadian defence into the US military.
Again during the war, Prime Minister King travelled to Washington to make arrangements concerning the sharing of war materials. King's interest was in obtaining US currency through the sale of arms. The Hyde Park Declaration of 1941 resulted, providing for "barter" between the two countries. The Declaration states: "It was agreed as a general principle that in mobilizing the resources of this continent each country should provide the other with the defence articles which it is best able to produce, and above all, produce quickly, and that production programs should be co-ordinated to this end." The Hyde Park Declaration was the first step in rationalizing military production along continental, rather than national lines. Within a season of the Declaration, mutual contracts amounting to $200 million were signed. The Hyde Park Declaration was reaffirmed in October 1950, and extended to provide for continental defence as well. The USSR had developed long-range nuclear capability, causing the US to fear an attack over the North Pole. The Dew (Distant Early Warning) Line was developed. The US controlled and paid for it, while Canadians built it.

The next logical step was coordinated air defence, which led to the creation of NORAD in 1957. Within a year of the establishment of NORAD, the Diefenbaker government also cancelled the CF-105 Avrow Arrow. This event symbolized the loss of Canadian independence in the production of military hardware. It marked the end of Canadian initiative in producing any major weapons system. It was not a large step, then, to coordinate defence production with the US.

The NORAD decision, along with the decision to end the Arrow project, led the Diefenbaker government to enter the Defence Production Sharing Arrangements (DPSA) in 1959. These rather informal trading arrangements made the US the prime contractor for major weapons systems, while Canada would undertake the manufacturing of components parts and subsystems. By 1963, the arrangements provided for a 'rough balance' of trade between the two countries: Canadian sales of component parts would have to equal the purchase cost of completed weapons systems.

There was an important difference in motivation between the two countries in entering into the agreement. For the Americans, the primary concern was the military security of
North America. For Canada the motivation was largely commercial—to obtain financial and industrial advantage by selling component parts to the US, and by being able to buy sophisticated weapons without undertaking all the Research and Development (R+D) costs. The US desire for military integration and control over the continent was achieved. Ernie Regehr comments on the implications for Canadian security: “It means that on this continent it is the Pentagon that decides on the appropriate military responses to its perceptions of threats to security and it is the Pentagon that ultimately assigns roles to the armed forces of the continent.”6 Whether Canada gained anything in industrial development, beyond short-term financial advantage, is questionable. The evidence in fact suggests that this relationship has had a negative effect on the Canadian economy in several ways.

DPSA and NORAD are significant because they represent the integration of the defence industry and defence policy along continental rather than national lines. This bilateral relation between Canada and the US has become more important than Canada’s multilateral relationships in NATO. US military purchases in Canada now almost equal its military purchases in all other NATO countries combined.7 The specific effects of the DPSA therefore needs very careful analysis. Do Canadians obtain additional employment because of trade under DPSA? Are there any foreign policy implications to these weapons trade arrangements?

**Effect of Military Production on Jobs** Job creation has become, for some politicians, the prime justification for increases in military spending. Past Defence Minister Barney Danson proclaimed in 1978 that: “Since 1959, some 600 Canadian companies have sold $6 billion in defence related products. Defence exports provide, directly, some 25,000 jobs, typically scientists, engineers and technicians. Indirectly and not counting commercial spin-offs—they create at least 100,000 jobs.”8 The most current example of this attitude is the consideration the Mulroney government has given to participating in Star Wars R+D as a job creation scheme.

Several studies have been conducted by government and various interest groups on the effect of military spending upon job creation. The results are similar around the world. No one
claims that military spending does not employ people: we know that it currently provides jobs for 5.5 million persons in the US alone. It is certainly true that individuals employed in military firms or services receive income then used to buy consumer goods, thereby stimulating the economy and promoting the general welfare. It is also true that each particular firm or government department providing such employment benefits the local economy. Nevertheless, all the studies show that military spending does not create as many jobs as does spending in other sectors of the economy. As John Kenneth Galbraith commented on Star Wars: "It is an incredibly inefficient way of making jobs." In Canada, a study commissioned by the Canadian Union of Public Employees (CUPE), relying on Statistics Canada's input-output model of Canada's economy, came up with the following statistics for the number of jobs created by a one billion dollar (1983 $) expenditure in various areas:

<table>
<thead>
<tr>
<th>1983/84 DND Spending</th>
<th>22,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road and highway construction</td>
<td>37,000</td>
</tr>
<tr>
<td>Residential construction</td>
<td>38,000</td>
</tr>
<tr>
<td>Consumer spending</td>
<td>39,000</td>
</tr>
<tr>
<td>Hospital services</td>
<td>51,000</td>
</tr>
<tr>
<td>Education and related services</td>
<td>54,000</td>
</tr>
<tr>
<td>Radio and TV broadcasting</td>
<td>55,000</td>
</tr>
<tr>
<td>Urban transit systems</td>
<td>87,000</td>
</tr>
<tr>
<td>Post office</td>
<td>90,000</td>
</tr>
</tbody>
</table>

In 1983–84, 146,641 jobs were created in defence industries by the Department of National Defence (DND); consumers spending the same amount of money would have created 257,844 jobs (or an additional 76%). Women and youth were particularly affected by this situation as (for the same period) DND spending provided women with 47,623 jobs instead of the 108,897 jobs that consumer spending would have created (an additional 129%). Similarly, for youth of both sexes under the age of 25, the figures were 33,206 jobs instead of 74,219 jobs (an additional 124%). The CUPE study concluded: "At this rate, the defence budget projected for 1985–86 will lead to a job loss of 160,000 over what could be achieved through increased consumer spending." Marion Anderson, of Employment Research Associates in Michigan, has done some revealing work on this topic. Her research on defence spending shows that there is a net loss of
jobs in almost every case, regardless of which way one cuts the economic pie. Whether it be for workers in general or for machinists, for women or for blacks, the effect of military spending is a net loss of jobs.

The social cost of producing jobs in the military sector must also be considered. From the point of view of most civilian sectors of the economy, arms making is "parasitic production", as claimed by Seymour Melman.\textsuperscript{11} It was Eisenhower, in the post-War years, who laid the policy foundation for military industrial cooperation,\textsuperscript{,} thus causing the military to be viewed as a vital part of the US economy and the US GNP. Here the US saw the beginnings of a permanent war economy, or "Pentagon capitalism". The economists engaged in this type of accounting fail to note whether the product can be consumed or if it can lead to further production. Because military production does neither, it is parasitic, feeding off of civilian goods and services.

The Pentagon represents the highest concentration of political and economic power in the world, heading a hierarchy of 37,000 industrial firms or divisions of firms, along with 100,000 subcontractors. Between 1947 and 1981, the Pentagon spent $2001 billion; from 1981 to 1988, it plans to spend another $2089 billion. What that money and those institutions potentially could do in the US—or globally—is revealing when examined in terms of social cost accounting. Seventeen billion dollars alone could feed, clothe and shelter for one year everyone in the world currently living in poverty; the same amount could pay for half of the US Navy's new F-18 Fighter Aircraft Program. The social cost argument for economic conversion raises the issue of the fundamental inhumanity of placing so much energy and so many resources towards weapons of destruction. It raises a very basic question: why cannot all this organization and wealth be put to the common good?

Faced by such overwhelming evidence, one wonders why the job argument is promoted so stridently by government officials. Is it that they do not know? Or is it rather a superficially believable argument that has public support from many who benefit from defence-related jobs, an argument with public relations value for the government among job-starved citizens? The data, however, beg questions as to why there are increases in the defence budget when unemployment is so
high, and why the government so vehemently defends military spending as job creating. Whose interests are being served by the lack of civilian job creation?

DPSA's Effects on Balance of Payments  If defence production is an inefficient way of providing jobs generally, the Canadian case is all the worse because of the nature of the DPSA. The Canadian government gave two reasons for entering into the DPSA. First, there was a lot of money to be made by cashing in on the American war industry. Secondly, economies of scale—particularly with increasingly sophisticated modern weaponry—did not allow smaller powers to engage in the required research, development and production. Only larger superpowers could economically fulfill all their defence requirements on their own. It was reasoned that with the DPSA, Canadian firms would be able to specialize in areas where they were competent, and provide components parts for US weapons. Canadian firms were not to undertake any major weapons systems on their own.

The governments of both countries undertook to facilitate this trade relationship by relaxing import duties, waiving "Buy America" acts, and assisting Canadian firms to obtain access to the American market through information exchange and financing. The waiving of American protectionist measures against Canadian defence materials has been a key feature in recent years, pitting the White House, the US Department of Defence, and Canadian officials against Congress. Exempt from production sharing are 'off the shelf' items such as fuel, raw materials, transportation, etc., which in 1975 was estimated by the Stockholm International Peace Research Institute to be valued at $200 million a year to Canada's benefit.

However, military exports to the US do not help the Canadian balance of payments. During the Vietnam War, Prime Minister Lester Pearson defended selling arms to the US by appealing to the economic benefits of the DPSA. Federal Trade Minister Gerald Regan argued in 1983 that military "contracts... are vital to our export trade, which has made a good balance of trade possible in a difficult time for our economy." Stephen Clarkson follows the same line when he writes that the new "Buy America" Laws cost Canadian defence workers jobs. What these and many other observers are
reviewing is only the Canadian production end of the DPSA. What they fail to note, for reasons of politics or poor analysis, is that DPSA requires subsequent purchases from the US. The DPSA provides of itself no gain in terms of balance of payments or new jobs. In fact because of a sharply deteriorating situation since 1980, Canada's accumulated deficit in its balance of payments on military trade with the US reached $1,609.7 million by the end of 1984, despite substantial recent increases in exports of military hardware to the US.16

When US Secretary of Defence Caspar Weinberger presented Reagan with a five-year war budget of $1.6 trillion in 1981, Canadian government and business leaders began lobbying hard for Pentagon contracts. In 1981, under Reagan, military sales soared to $826.6 million; 1984 saw $1.36 billion of military hardware go south of the border. Each dollar, however, has come back to haunt the Canadian government, for it is required to spend roughly equal amounts on American weapons.

Canadians have not learned from history. Following the Vietnam War, all the war material exports that Canada had made came home to roost. After Vietnam, Nixon challenged Canada, under the DPSA, to buy the Lockheed Long-Range Patrol Aircraft in order to address the imbalance that, by 1971, was $544 million in Canada's favour. The US thereby was able to influence the choice of planes, and thus the nature of our defence force (the other plane being considered by the Canadian government was DeHavilland's Dash-7 which would have had more of a civilian function along Canada's coast). Furthermore, Canada had to compete with other bids for Pentagon contracts, while it often had to accept the pre-set price of imported weapons systems.

By 1984, the balance was $1.6 billion in favour of the US, largely due to Canada's commitment to purchase a hundred and thirty-eight F-18 fighter planes from McDonnell-Douglas. By 1985, this had cost $3 billion, with another $1.8 billion still to be spent on the program. Canadian sales have been helped by the erosion of US firms' competence in developing subsystems and component parts, as several American companies have opted for more stable civilian production, or have assumed senior contracting roles.17 Canadian weapons manufacturers, particularly in the aerospace industries, have neverthe-
less complained that the US security restrictions prevent
Canadian firms "from getting a fair share of the lucrative
Pentagon pie." Pentagon officials have given a series of sem-
inars over the past few years in various cities, teaching Cana-
dian firms how to make the necessary connections when lob-
bying for Pentagon defence contracts. Larger firms are being
advised to open Washington offices staffed with competent
technical, sales and senior management people. This major
effort is designed to stem the steady rise in the defence sector
deficit that the US has accumulated with Canada. Canadian
military exports to the US can be expected to continue to
increase dramatically in the years ahead.

Under DPSA, Canada is in the paradoxical position of not
being able to supply the major equipment for its own armed
forces, even though its military budget is increasing dramati-
cally. Among NATO countries, Canada is one of only five that
have increased military spending in the 1980s. In 1982, Ottawa
notified NATO that despite general government spending re-
straints, Canada was intending to increase military expendi-
tures by 35.2% over the next two years, prompting the heading
"Canada plays the NATO hawk" in a Financial Post article.
Canada's military budget from 1983–84 increased at a higher
rate (11%) than that of any other NATO country, the US
included. The rise in the DND budget over the last few years
is very revealing:

<table>
<thead>
<tr>
<th>Year</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>4.1 billion</td>
</tr>
<tr>
<td>1980</td>
<td>5.0</td>
</tr>
<tr>
<td>1981</td>
<td>5.9</td>
</tr>
<tr>
<td>1982</td>
<td>7.0</td>
</tr>
<tr>
<td>1983</td>
<td>7.9</td>
</tr>
<tr>
<td>1984</td>
<td>8.7</td>
</tr>
<tr>
<td>1985</td>
<td>9.6</td>
</tr>
<tr>
<td>1986</td>
<td>10.1 (estimate)</td>
</tr>
</tbody>
</table>

Translated into constant dollars, these figures represent an
increase after inflation of 3% to 5% per annum. The DND
share of the total federal budget grew from 11.4% in 1984,
to 11.9% in 1985, to 12.5% in 1986.

The most interesting component of this budget increase is
in the area of capital expenditures. During the fiscal years
1984 and 1985, $2.3 billion and $2.4 billion respectively were
spent by the DND on new acquisitions alone. This is a sharp
increase from the 1970s, when the total DND budget hovered around $2 billion. In 1981, defence contracts accounted for 68.7% of all federal purchases. In 1985, the capital spending on defence, as a percentage of overall federal purchases, remains high at 48% (see figures 1 and 2). 1985–86 estimates show capital commitments for the next few years to be $24 billion, for such items as new submarines and ships, trainer aircraft, fifty-eight more F-18 fighter planes (adding to the eighty already purchased by 1985), and anti-submarine helicopters. The capital budget of 1984–5 quadrupled that of 1978; the 1986–87 defence envelope has slated almost $3 billion (1984$) for new acquisitions. After the big five powers, Canada now ranks first in terms of capital expenditures for its military. Are these increases due to some newly perceived threat to Canadian security? Or is the Pentagon, through DPSA, defining Canada's military needs and expenditures?

A further balance-of-payment factor needs to be considered. In order for Canada to build the military product, it must import specific machine tools, which are not covered under the DPSA. Statistics Canada Input-Output Analysis estimates that for every dollar of defence equipment exported, $.20 of machine tools must be imported. This represents an institutional foreign exchange loss of 20% on defence trade. With the Defence Industry Productivity Program (DIPP) grants—which we shall review in a moment—a further $.17 to $.21 is spent for each dollar of exported material. Project Ploughshares estimates that a total of $.40 is exported and spent even before Canadians begin to import completed US weapons systems.\(^{22}\)

There are only two ways in which it can be argued that military trade contributes towards a positive balance-of-payments figure and provides jobs. Both lie outside of the DPSA, and both have serious implications for Canada's sovereignty, particularly in foreign and defence policy.

First, the "off the shelf" items we have already mentioned include the raw materials that are shipped to the US for military purposes. The financial benefit has been about $200 million a year. The cost to Canadian sovereignty of this economic benefit is illustrated by the following incident. During the Korean War, the US Anaconda Copper Mining Company, a supplier of strategic metal, faced a shortage of gas. Mean-
while, Alberta—its major supplier—had not assessed its own domestic need, and there was also fear of a shortage within that province. Alberta refused to authorize the export until the Canadian Department of National Defence intervened on behalf of the American company and the Pentagon. A province's energy needs came second to American military requirements. This story reveals that raw material export, while being a positive balance-of-payment factor is not without its own political perils. Because of the continental arrangement in strategic raw materials, cases of conflict between Canadian domestic requirements and US military interest may not necessarily be resolved in the former's favour.

A second positive balance-of-payment factor is trade with overseas countries buying Canadian war materials and component parts. Canada is in the world's eighth largest arms exporter. Like the US, Canada has in the 1980s increasingly been selling arms to foreign countries, as shown in the following figures:

**Total Canadian Defence Trade Statistics 1959–1984**

*(figures in millions $)*

<table>
<thead>
<tr>
<th></th>
<th>Exports</th>
<th>Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>9617.9</td>
<td>11227.6</td>
</tr>
<tr>
<td>Overseas</td>
<td>3775.4</td>
<td>1163.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13393.3</td>
<td>12391.5</td>
</tr>
</tbody>
</table>

The economic benefit of $2611.5 million received for the export of military hardware to non-US countries (a $965.4 million trade surplus with European countries and a $1646.1 million trade surplus with developing countries) is rather paltry. There is also a price to pay in terms of foreign policy, which we shall consider in a later section.

We may conclude that military production in Canada, particularly under the current continental pull, of itself has a negligible effect on Canadian balance-of-payments, and hence on jobs. The relatively minor economic benefits that do accrue from military trade with non-US countries, need to be seen in the light of their implications for Canadian foreign policy. Canadian defence production may benefit the workers of particular companies and communities. But the net effect on other
sectors of the economy and on the defence industry itself is negative.

**Military R+D: the cutting edge of Canadian technology** The current ruling assumption, articulated in 1970 by Jean-Luc Pepin, former Minister of Industry, Trade and Commerce, is that "a lot of civilian research leads to military innovation and a lot of military research leads to civilian innovation." It is difficult to determine the precise percentage of government R+D that is devoted to military concerns, as the government does not distinguish between military and civilian R+D. A number of estimates of the percentage of government R+D that is military-related place the figure at 50%.

Arguments about spillovers from military R+D to civilian purposes (thereby suggesting that these two forms of production are identical or interchangeable) have little statistical support. The proper accounting of military R+D should make the distinction. It should include within the cost of military R+D not only the social cost (that is, the direct loss to social services such as daycare, road building, pollution control, etc.) but also the cost of lost productive capacity (that is, the benefits lost from not being able to update and renew the civilian manufacturing sector) that result from lack of funds for civilian R+D.

Within Canada, the Defence Research Board (DRB) of DND promotes military R+D. Formed in 1947, it emulates the DPSA principle of tying R+D into a continental framework. The United Kingdom is also included in this R+D arrangement, as the three countries have been sharing information and research facilities since the beginning of WWII until the present time. This partnership was formalized in 1957 under the name of the Tripartite Co-operation Program, which later became the Technical Co-operation Program (TTCP) when Australia joined. The Canadian DRB has and continues to employ approximately five hundred to six hundred defence scientists, with an undisclosed number of support staff, in seven defence research establishments across Canada.

The post-war arrangement restricts Canadian R+D to a number of highly specialized areas. When the DRB was started, it was argued that Canada "should initiate only a limited number of defence research projects chosen with a view to
utilizing Canadian resources to the best advantage." What seems to be to Canada's "best advantage" is R+D in nuclear and chemical warfare. According to Dr. A.H. Zimmerman, former chairman of the DRB, "The majority of the Board's research programs are closely integrated with those of the US. . . This type of cooperation has resulted in the sharing of facilities, staffs, and equipment . . . particularly in . . . chemical and nuclear defence." He added that this work is done primarily at the Defence Research Establishment Suffield (DRES) with as many as one hundred US representatives participating regularly.

Suffield is a good example of some of the R+D that Canada is doing. Twenty-eight miles north of Medicine Hat, Alberta, Suffield was opened in 1941 for experiments in chemical warfare. It is fully equipped with a total staff of about three hundred, including upwards of twenty-seven scientists. Half of the initial set-up cost was paid for by Great Britain. The one thousand square mile experimental area is the only one of its kind in the world. Canada continues chemical warfare research here, despite signing a 1925 Geneva Protocol prohibiting development of chemical agents for use in war, and despite George Ignatieff affirming in 1971 at the UN that Canada had no biological toxins or chemical warfare agents. Suffield developed four of the deadliest nerve gases known to date (code named VX, GA, GB and GD). Experiments at Suffield have been conducted on humans, animals and the land itself. Each year eight thousand members of the British armed forces train in chemical warfare at Suffield (paying Canada $6 million in 1978–79 alone).

Because direct information on the specific nature of Canadian involvement in these programs was not available from the DRB itself, Arthur Forer used the indirect method of examining the articles published by particular Canadian defence scientists to piece together the following picture. The division of labour between the US, the United Kingdom and Canada seems to be as follows: the former two develop biological and chemical warfare agents, while Canada deals with aerosols (i.e., the distribution of the agents), with testing the agents, and finally with studying immunological properties.

Although Canada has defended this research as being purely defensive in nature, several factors suggest otherwise. First,
the agents being studied are not exclusively those known to be in Warsaw Pact stockpiles. Canada is studying agents never known before that are intended to become part of the US arsenal. Second, because of the TTCP, the information Canada gains is shared with the US, which clearly has had an interest in offensive chemical and biological warfare since WWII. Third, the distinction between defensive and offensive R+D in chemical and biological warfare is tenuous. As early as the 1940s, US army documents conceded that "offence and defence were closely interlinked in all the studies conducted."

The DRB has a number of skeletons in its closet that expose the extent of its cooperation with US Pentagon planners. In the 1960s, Canada tested Agent Orange, which was then used by the US in Vietnam. This testing was done near Gagetown, New Brunswick. In the mid-1970s, two hundred and seventy-one dying cancer patients at the Princess Margaret Hospital in Toronto were given massive doses of radiation by the Defence Research Establishment Ottawa (DREO) in order to study their vomiting episodes. During the 1960s, in tests done with US scientists, biological agents were dispersed along the Alaska Highway to study the effect of pathogenic agents on travellers in cold weather conditions. In the 1960s, US Air Force jets were permitted to spray pathogenic aerosol clouds that travelled downwind to small communities in southwestern Saskatchewan and southeastern Alberta. In 1953, an aerosol cloud of zinc cadmium sulfide was released in Winnipeg, and its effects studied by the US Army.

That Canada has a solid commitment to military R+D of this type is clear. Yet the Canadian public is generally unaware of this. Forer, before undertaking his study at the behest of Science for Peace, thought that there was no chemical or biological warfare research being done in Canada. He concluded from the study "that research into the effects of nerve gases (and antidotes) is of major interest to Canadian, as well as US and UK, military." How does this type of R+D have a civilian application? What kind of jobs will result from the knowledge that this research will produce?

High tech development is also being proclaimed as the way of the future for Canadians weapons manufacturers, due to its alleged civilian spillovers. A.F. Campbell of the Department of External Affairs recently claimed that defence producers
"have been significant contributors to Canadian high technology capability that is absolutely essential to maintain our position as an advanced industrial nation."

At the "Can/Am Future Tech" conference held in Ottawa in May 1983, top US and Canadian arms merchants discussed high technology possibilities for Canadian industry. Security and surveillance systems, panel displays for fighter cockpits, military application of Videotext and Teletext technology, and air cushion vehicles for Marine amphibious landing were among the products mentioned as within the realm of Canadian competence. These products are geared towards the development of the new generation of nuclear weapons, and towards US interventionist troops such as the Rapid Deployment Force. From the point of view of American, Dr. J. Neil Birch, ex-Deputy Assistant Secretary of Defence, the prospects for this kind of production in Canada look good: "Let me get to the bottom line. I think that the potential here is great . . . the bureaucracy is very low, the government demands are good . . . the political risks are minimal."

Aside from the obvious political and ethical considerations, there is evidence that these new, high-tech weapon production schemes are not in Canada's long-term economic or industrial interest. The Science Council of Canada's study, The Weakest Link, argues that the electronics industry in Canada is retarded due to the nature of our defence relationship with the US. Canadian production and innovation is custom-oriented, and thus not suitable for alternative usage or mass production. As is the case with most Canadian industries, short-term custom production is the way to plug into American corporate activity. Major innovation is done in the US. "The links between Canadian and US industry lead to the transfer of R+D activities to the US and to increased reliance on production licences from the US."

According to a study of nine industrialized countries conducted by Ruth Sivard, Canada is in a unique position. In all of the other countries, military spending and production are inversely related: Japan is the most productive, with the least military; the US is the least productive, and spends the most on the military; the USSR is the second-least productive, with the second-highest military. Canada, however, spends the second least on the military, and still has the third-lowest pro-
ductivity record. The reason for Canada being different, conclude economists like Mel Watkins, has to do with the peripheral status of the Canadian economy to that of the US: "The arms industry, like Canadian industry generally, is significantly of an inefficient branch-plant variety, while we share in the economic costs of being tied to an inefficient and waning US economy."

Since 1973, special amendments to the US Defence Appropriation Act have restricted the kinds of contracts and R+D for which Canadian firms can issue tenders. The Bayh Amendment allows R+D money to go to a foreign source only if there is no significant US equivalent. Furthermore, current American security concern over leakages of sensitive technology to Soviet bloc countries is resulting in additional restrictions over the types of R+D that are being contracted outside of the US. Canada is not exempt from these security considerations, particularly as it has been identified by some observers as one of the sources of technology leakage through commercial channels. Thus, just as there are restrictions in the kinds of military hardware Canada can produce, the Pentagon also increasingly defines which areas of R+D will be undertaken, and in what areas Canadians can be 'innovative'.

One may want to argue that even if military R+D had beneficial economic implications for Canada, Canadians should still be opposed to this type of spending. The evidence, however, strongly suggests that in economic terms alone, military R+D does not contribute to a productive manufacturing sector. The continental arrangements into which Canada has locked itself, both in R+D and in the production of war materials, have negative consequences for the Canadian economy. These economic implications can be added to negative political consequences, which we shall now consider.

State Promotion of War Production  In Canada, as elsewhere, the support arms manufacturers receive from the state is not negligible. Since the time of Prime Minister King, the defence industry has been a "carefully nurtured child of the government." A host of government departments, agencies and programs aid defence industries in obtaining military contracts.

The kingpin of the government programs, particularly from a conversion perspective, is the Defence Industry Productivity
Program. In terms of financial commitment, this program disburses more dollars than any other department or program designed to assist military industries in Canada. In terms of Canadian industrial strategy, it provides the mechanism for conversion from civilian production to military production. DIPP works along with DPSA: if DPSA defines the nature of the integration into US war production, DIPP defines the extent of its integration. DIPP and DPSA epitomize the Canadian fixation on the short-term on seeking the quick dollar, while neglecting secure, long-term industrial development.

The statistics of the last decade reveal the increasing commitment of the Canadian federal government to the DIPP:

**DIPP Grants, 1976–85**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976</td>
<td>$39.0 million</td>
</tr>
<tr>
<td>1977</td>
<td>44.9</td>
</tr>
<tr>
<td>1978</td>
<td>43.2</td>
</tr>
<tr>
<td>1979</td>
<td>52.2</td>
</tr>
<tr>
<td>1980</td>
<td>57.9</td>
</tr>
<tr>
<td>1981</td>
<td>94.9</td>
</tr>
<tr>
<td>1982</td>
<td>154.9</td>
</tr>
<tr>
<td>1983</td>
<td>132.0</td>
</tr>
<tr>
<td>1984</td>
<td>144.2</td>
</tr>
<tr>
<td>1985</td>
<td>152.7</td>
</tr>
</tbody>
</table>

The total amount granted from the inception of the program in 1969 to the end of 1985, has been $1,242 million. De-Havilland and Canadair also received $200 million each during 1982–3, in addition to the DIPP grants. (It will be interesting to monitor the level of DIPP support awarded to the Boeing Corporation now that it has assumed ownership of De-Havilland.) The April 1983 budget also provided a $300 million “Special Recovery Investment Fund” to be used by companies applying for DIPP grants.

Three types of activities are awarded DIPP grants: (1) military R+D; (2) purchase of advanced technology production equipment; and, (3) the cost of becoming a qualified supplier. DIPP now pays up to 75% of development costs. The Department of Industry, Trade and Commerce, which administers the program, argues that it is a clear way of promoting Canadian production capabilities and technological expertise. US government officials support the program, maintaining that it is in America’s economic self-interest to do so: US
Deputy Secretary of Defence Frank Carlucci has claimed that “this cost sharing could save the US government millions of dollars annually.”

While from an American perspective, their goal of sharing expenses may have been achieved, it would be difficult for Canadians to defend DIPP’s goals as fulfilled. To reiterate, civilian production capabilities and technological expertise are not provided by military production.

From the point of view of promoting specifically Canadian technological expertise, DIPP presents additional problems. DIPP makes no apparent distinction between Canadian-owned firms and foreign subsidiaries. The work of Project Anti-War of Montreal during the Vietnam War is very revealing. Between 1967–71, DIPP awarded more than $458 million to one hundred and fifty-four defence contractors in Canada. Of the one hundred and two whose ownership was determined, forty-five were US owned. They received $224 million, or 47% of the total grants. This mirrors the overall percentage of US companies in Canada doing defence work for the US Pentagon.

Several other, less well-known programs of the Canadian government promote war production. The International Defence Programs Branch (IDPB) of the Department of Industry, Trade and Commerce employs about eighty people around the world to help keep Canadian contractors abreast of defence trends in foreign countries, and to assist Canadian companies in bidding for new contracts. Each year it organizes a high-tech conference in Ottawa, where Canadian and foreign officials in government and business meet to promote their wares.

All foreign military contracts—for example, the General Motors (GM) contract mentioned below—are awarded through the Department of Supply and Services to the Canadian Commercial Corporation (CCC) which in turn subcontracts the work out to Canadian companies. In 1982, the CCC arranged $589 million worth of contracts, 75% of which were military related. Since 1946 when it began, the CCC has promoted export sales of $11 billion. In 1983, 76% of its two-thousand, five hundred and sixty contracts were with the US.

Further state support is provided by the Export Development Corporation, which makes loans to foreign buyers of
Canadian military products; it also sells insurance to Canadian corporations, guaranteeing payment for sales of their military wares to foreign buyers. In 1984, the Export Development Corporation helped promote the sale of more than $4 billion in exports. Figures indicating the percentage of the contracts that were military-related are not available.\footnote{\textsuperscript{30}}

A recent example, calculated by Project Ploughshares, reveals the high cost of military production in Canada and the degree of state assistance it absorbs. General Motors in London, Ontario, received a $625 million contract from the Pentagon to produce light-armoured vehicles for the US Rapid Development Force. The contract provides 3500 person-years of work. The vehicle, however, is actually 70\% built in the US, thus making the Canadian content worth only $185 million. Of the $50 million required to set up the new production, the Canadian government granted and loaned $26 million through DIPP. Under the DPSA, Canadians will have to import $185 million worth of military equipment (\$53,000 per GM job). When you add in the \$7,400 per job provided by the government grant, this GM contract is a job creation program that costs \$60,400 per person-year of work!\footnote{\textsuperscript{31}}

The amount of energy and money that the Canadian government invests in military production reveals the seriousness of the government's commitment to such production. The material presented here, however, leads us to conclude that state assistance to war production—even of the high-tech variety—occurs in very fragmented and specialized fields, helps to a high degree foreign-owned firms, and entails a very high financial cost to taxpayers.

**Effects of Defence Production on Foreign Policy** The continental arrangements in the arms trade industry affect Canadian sovereignty by unduly influencing who the recipient of Canadian military products will be. Because Canadian military equipment is standardized according to US design, Canadian arms sales are subject to US influence. Critics and supporters note that military hardware trading arrangements are a major factor in determining a recipient country's defence policy. Former US Secretary of Defence James R. Schlesinger observed: "The degree of influence of the supplier is potentially substantial, and typically, those relationships are long enduring . . . When states wish to buy hardware, we prefer that it be
American-supplied rather than supplied by some other state that may be hostile or indifferent to . . . the objectives of American foreign policy.” 52 For the US, this frequently has meant selling arms to states in conflict with each other, such as Israel and some of its Arab neighbours, or Great Britain and Argentina. This has allowed the US tremendous leverage in shaping these regional conflicts. Canada, as the manufacturer of component parts of US weapons, must follow US trading patterns. Canada thus becomes the ‘friend of a friend’.

Canadian government policy is very clear and comprehensive regarding arms sales to various types of countries. Corporations may not sell arms to Canada’s military adversaries (the Warsaw Pact), to states under a United Nations’ embargo (South Africa), or to those countries in real or potential conflict. Canadian corporations also are prohibited from exporting weapons to human rights’ offenders, because such regimes are “wholly repugnant to Canadian values” when they use the military equipment against their own people.

Numerous conflicts have arisen, however, for the Department of External Affairs in applying these criteria to states involved in a military conflict, to states that are potential human rights violators, and to states who might misuse a specific piece of military hardware. Typically, the largest importers of Canadian defence equipment over the last twenty-five years have been repressive and reactionary governments who have been allied with the US, and whose citizens have been involved in movements for social change.

Canada’s role in Vietnam in the 1960s and 1970s offers the clearest example illustrating the effect of continental defence production when the independence of Canadian foreign policy is at stake. Canadian defence companies exported millions of dollars in military equipment to the US, which made its way to Vietnam despite the apparent contravention of Canada’s own guidelines forbidding military exports to states involved in military conflict. Prime Minister Pearson defended this trade in terms of its economic benefits. Canada’s complicity, by virtue of its silence and its arms peddling, in the horrors that took place in Vietnam is a function of the larger economic dependency to which Canada subjected itself, and particularly of the continental defence production arrangements that were in place. Charles Taylor, in his study on Canada’s role in Vietnam,
concluded that Canada's foreign policy and arms trade policy during this period were primarily determined by those factors: "there was always a feeling in Ottawa that if Canada was difficult over problems which affected vital American interests, Washington would be much less sympathetic when crucial Canadian interests were at stake."53

The pattern of Canadian component-part salespersons following US interventionist forces has marked Canadian arms export patterns during the 1970s and 1980s. As the Pentagon has geared itself increasingly to developing equipment suited for Third World intervention and the suppression of popular movements for social change, Canadian arms producers, with their component parts and subsystems, have followed suit. During the early and mid-1970s, the largest customer of Canadian defence equipment outside the US was the Shah's Iran, one of the worst violators of human rights in the 1970s. Canadian arms also have made their way to Marcos' Philippines, Turkey, Pakistan, El Salvador, Chile and Guatemala—all countries with serious human rights violations. Frequently the trading is justified in terms of Department of External Affairs criteria by earmarking the original export as being for civilian use; the end-use, however, is not monitored. At other times, a loophole in the criteria permits the re-export of Canadian parts through a third country (thus Pratt and Whitney Canada engines for US helicopters have made their way to Guatemala through Israel).

It is beyond the scope of this article to outline the range of arms exports, their destinations, and their connections to US geopolitical interests. The point here is to note that Canada's foreign policy and avowed concern for human rights are severely compromised by its defence production arrangements. DPSA undermines Canada's sovereignty over determining its own security needs, its relationships with a rapidly changing Third World, and its role in the international community. That sovereignty is crucial in the face of a bellicose US currently determined to reaffirm its imperial status.

**Strategies for Conversion** A number of experiments are occurring in Western countries that deserve our attention because of their potential for suggesting new roles in the conversion process to the various levels of the Canadian government.
The state has a vital role in the conversion process because even the most serious and imaginative plans come to nothing without its involvement.

In the US and the United Kingdom, partly due to a longer, more obvious involvement in militarism, there are well-known thinkers on conversion, several well-established research groups, and an impressive body of literature on the military economy and how the state can be involved in its conversion. The efforts of American activists have focused on legislative measures encouraging economic conversion, while their British counterparts have been working with labour unions and the Labour Party. Only a handful of Canadian researchers have studied the Canadian military establishment from a conversion perspective, with Project Ploughshares providing the most information and analysis. As for groups, the oldest conversion organization is the Cruise Missile Conversion Project (CMCP) which focuses on Litton Systems (Canada) Ltd. CMCP is only seven years old and, amidst difficulties, is just beginning a conversion program.

Nevertheless, significant initial steps have been taken by peace and labour groups challenging the Canadian state’s involvement in escalating militarism. A number of unions, particularly the Canadian Auto Workers and the United Steelworkers, have supported calls for economic conversion, and have started to educate their members on the job implications of a militarized economy. Labour unions have joined with peace groups in lobbying the federal government to dismantle DPSA, to cancel DIPP, and to replace the latter with a “reverse DIPP”, that is, a fund for manufacturing firms whose priority would be entry into socially useful production. Economic conversion conferences have brought together labour and peace groups seeking to forge a coalition that would promote their mutual interests. In June 1984, an International Economic Conversion Conference was held in Boston, where a contingent of seventy Canadian peace and labour delegates were represented among the seven hundred international delegates. More recently, in November 1985 a Canadian Economic Conversion Conference took place in Toronto, addressing conversion in the Canadian context. These are important beginnings, revealing that Canadian groups are at the stage of internal dialogue, self-education and coalition-building. The
fruit of this ground-breaking may not become evident, in terms of effects on state policy, for a generation.

What are the prospects for change in Canadian defence and defence-production policy? Until their defeat in 1984, the national Liberals, though ambivalent in their rhetoric, pushed ahead in arms production. Under the Conservatives, defence spending is increasing even further. The Defence envelope is expected to increase to $11.1 billion in 1987–8. Underlying this thrust is the ruling consensus in Ottawa, which holds to the view that breaking from the US military and its economy "would only serve to weaken our economy, reduce our security and lessen our ability to grow as an industrialized nation."56

The task of conversion in Mulroney's Canada, and in an era of Reaganomics, is thus an uphill struggle. It is a crucial struggle, however, even if the weapons built are never used. In the Canadian case, being on the periphery of the American empire makes conversion all the more pressing. The social cost of an $11.1 billion military budget in Canada is unacceptable when Canadian unemployment is so high. The loss of productive competence caused by militarism is further accentuated in branch plants in Canada. By further integrating into the American war economy, Canada is tying itself into a highly inefficient, management-dominated, cost-maximizing industry; and given Canada's marginal status, the ill effects are felt all the more strongly. Canada will not achieve full, job-creating industrialization by continuing to tag along with the Pentagon. The extent to which Canada participates in the American war economy is the extent to which it is participating in its own economic decline.

From a conversion perspective, decreasing military priorities is, among other things, a nationalist issue. The context for any de-continenalization of defence production and defence strategy has to be the de-continenalization of the North American economy. Conversion of the military cannot be looked at separately from the matrix of economic and political considerations between the US and Canada. Nor can it be examined separately from the struggles against the encroachments of transnational corporations in Canada. Conversion promotion is a function of building a nationalist base for Canada.

Several issues confront American and Canadian political leaders; along with defence, there are also items such as free
trade, fishing rights, resource exploitation and interest rates. Depending on political pressures, and on which party is in power, Canada might be able to defend its self-interest in a few areas. Thus it might push certain trading arrangements knowing that it will have to concede in the area of defence. Resistance to defence spending can only be sporadic in the present milieu.

Thus Canadian conversion can happen only in the context of the development of Canadian sovereignty. Every time a politician or business leader argues for greater US investment in Canada, more levers are being handed over to US business and military elites, levers which allow them to shape Canadian defence policy. The long-range goal of an independent, industrialized and fully-employed Canada is thereby linked in the short range to stopping Cruise testing, cancelling the Litton contract, converting DIPP, and dismantling DPSA. The work has already begun. The labour and peace movements are not waiting until a supportive government is in power.

The last point is to note the subtle but important shift taking place in the peace movement's analysis of the task before it. Mary Kaldor addresses this shift when she discusses why millions of petitions and marchers have not stopped any Cruise Missiles or new weapons programs. "The root of our problem is that disarmament seems to us to be an act of will; we simply have to decide to achieve disarmament—whereas armaments, we know, is a deeply rooted social process which involves people, institutions, hardware." The new analysis emerging in the peace movement is that disarmament is also part of a larger social process. The military-capitalist status quo took generations to evolve into its present form; its reversal will require a long struggle in a number of areas.

The peace movement has a very critical role to play in this process. It has already shown its ability to attract concerned individuals from every walk of life. Now it is learning to 'network' with groups of people for whom disarmament is not the primary concern, but who are nevertheless victims of a military economy. Conversion politics can bring together a number of constituencies that are disenfranchised by militarism—unemployed persons, unions facing cutbacks, women who are "last hired, first fired." A common coalition, where each group is conscious of the other's struggle is possible. The
entry point for each group is different: for the unions and the unemployed, it is the right to useful work; for women, it is patriarchy; and, for the peace movement, it is the abhorrence of solving conflict through violent means. These various interests find a merging point in economic conversion. By working for disarmament, one is in a good position to support those looking for work, while those struggling for labour rights are in an ideal position to advance the cause of peace.

Notes
I would like to thank Jenny Cafiso, Mel Watkins and the reviewers of this journal, particularly Hugh Armstrong and Gordon Edwards, for their helpful comments on the various drafts of this paper. I am also grateful to the Social Sciences and Humanities Research Council of Canada for their financial assistance, permitting me to undertake this work.

2. For an analysis of the economic basis of military and defence policy, see Wallace Clement, Continental Corporate Power (Toronto, 1977).
8. Cited in Ploughshares Monitor (April/May 1979), p. 5. Also see the article on General Daniel Graham (Star Wars initiator in the Pentagon), one of the many Pentagon salespersons coming to Canada, Globe and Mail, 13 June 1985.
27. Ibid., pp. 68–70.
33. Forer, “Canada’s Role in Chemical and Biological Warfare,” p. 10. (See n. 32, above.)
34. The Japanese who conducted chemical and biological tests on prisoners of war were granted amnesty by the US in exchange for their research; in the USSR, interestingly enough, the Japanese scientists who were caught, were convicted as war criminals.
35. von Stackelberg, “Weapons of War,” p. 7. (See n. 32, above.)
38. Forer, “Canada’s Role in Chemical and Biological Warfare,” p. 11.
44. Watkins, “The Economics of the Arms Race,” p. 13. (See n. 39, above.)
57. Mary Kaldor, “Jobs Not Bombs,” (Cruise Missile Conversion Project files, 1982 reprint.)