

noted in the *Aviation Week* story. The officer in charge of the programme to acquire CF-18s told *Canadian Press* that doubts raised by *Aviation Week* were, "literally shots in the dark . . . We're not going to cancel the order because of this."

Security Fears and Technology Transfer

Recent improvements in Soviet submarine-building technology have led to renewed American concern about the effect on US and NATO security of technology transfers to the East bloc. This concern was raised by a Pentagon report which describes the Soviet's ability to build improved propellers. These make their submarines significantly quieter and more dif-

ficult to track. The fact that the Soviets are now building such propellers has been attributed by intelligence officials to the sale to the Soviet Union of milling machines built by Japan's Toshiba Machine Co. The *New York Times* reported on 12 June that the US Navy has estimated the cost of overcoming this Soviet advance in submarine technology to be in excess of \$1 billion.

Toshiba made two sales to the Soviets, the first in 1981 and the second in 1984-85. Both violated restrictions of the Coordinating Committee for Export Controls (COCOM) on the sale of such machinery to communist countries. COCOM, which is based in Paris, oversees technology exports by NATO countries and Japan to the

East bloc. Also involved in these shipments was Norway's Kongsberg Vaapenfabrikk (KV) which delivered control systems to Toshiba to be incorporated into the milling machines.

According to the *New York Times* of 30 June, US Defense Secretary Weinberger met with Japanese officials in late June and it was agreed that the US and Japan would upgrade their efforts in anti-submarine warfare in order to overcome the impact of this breach in technology security. The Norwegian and Japanese governments have pledged to tighten their export inspection procedures.

Canada and Star Wars

Reports by CP and the *Ottawa Citizen* (14 July) that Atomic Energy of Canada Ltd. (AECL) received an SDI-related contract in the fall of 1986 raised once again the question of Canadian involvement in SDI research. The US \$200,000 contract from the Los Alamos National Laboratory is for particle beam research, one of the exotic technologies being examined by the American SDI researchers. AECL (a crown corporation) claims the research is not directly related to Star Wars and is similar to research AECL has been carrying out on its own for over twenty years.

Critics of the AECL contract recalled Prime Minister Mulroney's September 1985 decision not to engage in government-to-government research in support of SDI. In an editorial on 17 July, *The Toronto Star* contended that the AECL case points out the need for clear guidelines as to how agencies which operate at arms-length from the government should deal with SDI contracts. The *Ottawa Citizen* of 16 July added that the case also illustrates the quandary of dealing with research which has military and non-military applications.

Defence Research at Canadian Universities

On instructions handed down by the federal Cabinet in the summer of 1986, the Department of National Defence (DND) has stepped up its funding of university-

based research. The *Globe and Mail* of 2 July reported that twenty-eight universities have signed contracts for a total of more than a hundred defence projects in the past two years. The top recipient of DND money has been the University of Toronto. Despite recent increases, DND sponsored work is still a small portion of total university research.

While this research does not appear to be a major issue on Canadian campuses, some students and professors are uneasy with particular DND projects. At McGill University in Montreal, work on fuel-air explosives led to student protest in March. The *Montreal Gazette* of 17 March reported that the Board of Governors of the university responded by reviewing the guidelines covering such defence-related activities.

Changes in Soviet High Command

One result of the 28 May landing of a West German Cessna airplane on Red Square in Moscow was a major shake-up in the Soviet military high command. Two senior officers were replaced - Defence Minister Marshall Sergei Sokolov, and Air Defence Forces Chief Marshall Alexander Koldunov. According to *Jane's Defence Weekly* (13 June), the Soviet Politburo is holding the officers directly responsible for the incident. Replacing Sokolov as Defence Minister was General Dimitri Yazov - he most recently held the position of Deputy Defence Minister responsible for personnel and cadres. He is now a non-voting member of the Politburo. Koldunov was replaced by General Ivan Tretyak. Tretyak formerly commanded the Soviet Far Eastern forces and was made a Deputy Minister of Defence in August, 1986. A third related change occurred recently with the replacement of Marshall A. Konstantinov, Chief of Moscow Air Defence District, by Colonel-General V.G. Tsarkov. It is not certain, however, whether this change took place before or after the Cessna incident. □

Southern Command based in Panama. General Galvin was quoted in the *Washington Post* (31 July) as saying he had little reservation about the on-going INF arms control talks and the possibility of an agreement: "There is no reluctance on my part in accepting the changes in the nuclear face-off in Europe. NATO's strategy of flexible response will still be valid, however, the means to implement NATO strategy will require buttressing. Otherwise there will be a higher risk than we in the West should accept." The same article noted that General Rogers was harshly critical of a potential INF agreement and claimed this issue led to Rogers being replaced.

Persian Gulf

As the US commitment to protect merchant ships in the Persian Gulf region grew over the summer, the Americans, according to *Jane's Defence Weekly*, (6 June) began to approach their NATO allies for military assistance in the region. By the end of July the US had made formal requests to the governments of Britain, France, West Germany, Italy and the Netherlands for the purpose of increasing minesweeping abilities in and around the Gulf. As reported in the *New York Times* (5 August), all those asked denied the original request. They did not, however, preclude the possibility of providing either direct or indirect assistance at some point in the future.

The US was by no means left alone in providing a Western military presence in the area. The British have permanently stationed the "Armilla Patrol" consisting of two frigates, one destroyer and one support ship in the region. And the French have had five warships assigned to the region since an attack by Iranian gunboats on the French merchant ship, *Ville D'Anvers* on 13 July. Both forces have the task of accompanying their nationally-registered merchant ships through the region. The West Germans are restricted constitutionally to use their armed forces for national defence purposes only; thus their participation in operations in the Gulf region itself was not a consideration.

However, on 11 August both Britain and France reversed their initial decisions and began preparations for sending reinforcements - including minesweepers - to the area. The *New York Times* meanwhile reported (5 August) that the Federal Republic of Germany, Italy, and the Netherlands considered the possibility of increasing their European regional naval commitments to allow the US greater flexibility in re-deploying its own ships.