

# 1. CONTEXT AND TRENDS

## 1.1 Aerospace Industry

### a) Canadian Aerospace Industry

To provide an indication of size, Canada's aerospace industry sales were approximately \$7.7 billion in 1989. Close to 70 per cent of those sales were directed to export markets, and 70 per cent of these exports were to the United States. In contrast, Canadian government procurement (particularly through the Department of National Defence) represents 15 per cent of total sales made by the industry.<sup>8</sup>

The Canadian aerospace industry is made up of companies that produce for both civilian and military markets. Approximately 70 per cent of production is civil and 30 per cent military, with a decline in the relative importance of the military segment. Companies have concentrated their operations in Ontario and Quebec, with 89 per cent of production taking place in these two provinces. In 1989, 12 companies accounted for 73 per cent of total Canadian aerospace industry sales.

Among the major Canadian manufacturers of complete aircraft, engines and systems are Canadair Aerospace Group of Bombardier (Challenger executive jet, Regional jet and CL-215), Boeing Canada de Havilland Division (Dash-8), Bell Textron Helicopter, Pratt & Whitney Canada (PT6 gas turbine engine and JT15D turbofan engine), Allied Signal Aerospace, Spar Aerospace (precision gears, gearboxes and transmission for rotary-wing aircraft), and Boeing and CAE Electronics (flight simulators).<sup>9</sup> The major manufacturers of subsystems and components are Bristol Aerospace, Fleet Aerospace, McDonnell Douglas Canada, Canadian General Electric (CGE) and Rolls Royce Canada.

In addition to pursuing an export strategy, Canada's industry has a general strategy of product specialization and niche market applications. Two-third of overall output in 1989 (66 per cent) fell into the category of proprietary products. The success of the Canadian aerospace industry has been highly dependent on how well it could carve out

specialized niches for itself in the international marketplace. The Regional Jet by Canadair Aerospace Group of Bombardier, the Dash-8 by Boeing Canada, and Conair Aviation with its water bomber technologies are examples of such specialization.

The industry's major products consist of airframes and propulsion systems, which account for 42 per cent and 26 per cent of sales volume respectively, followed by avionics and space, which account for 13 per cent and 5 per cent of sales respectively, and defence electronics, which accounts for 8 per cent.<sup>10</sup> The airframe industry's product range includes corporate jets, regional airline turboprops, utility aircraft, helicopters and unmanned aerial vehicles. Propulsion systems' related activity includes a wide range of repair and overhaul work, component development and manufacture, and a small gas turbine line that holds a substantial portion of the world market. The avionics sub-industry features internationally competitive navigation and radar systems, electronic display, control and monitoring systems, world-class positions in-flight simulators, and air traffic control and battlefield reconnaissance drone systems.

The sales figures previously quoted clearly indicate that the Canadian aerospace industry is highly export oriented. Until recently, however, and with the exception of unmanned reconnaissance systems and gas turbines, Canadian companies exported few aerospace products directly<sup>11</sup> to Europe.<sup>12</sup> Throughout the past few years, there has been a steady growth in Europe's share of Canada's export sales (see Table 2 in Appendix A). These sales have taken the form of co-operative programs and procurement. Among the more important contracts are: (i) the Airbus subcontracts won by Canadair Aerospace Group of Bombardier, (ii) sales of CL-89/289 unmanned airborne reconnaissance systems to the Federal Republic of Germany and France, (iii) the sale of Challengers and of Regional Jets to the Federal Republic of Germany and the United Kingdom, (iv) the sale of CAE Electronics flight simulators for the Tornado and EFA (fighter jets) programs, (v) purchases made by British Aerospace, Shorts and ATR<sup>13</sup> of Pratt & Whitney Canada