

12 Arms modernization in Latin America

Mark Bromley and Iñigo Guevara

Introduction

Since the end of the Cold War, Latin America has enjoyed a prolonged period of limited regional tension. With the exception of the 1995 Alto-Cenepa War between Ecuador and Peru there have been no interstate conflicts and the region has seen the development of several initiatives aimed at economic and security co-operation and integration. Most of the interstate disputes over border demarcation that have led to conflict in previous years were resolved (Arévalo de León 2002, 14). Following prolonged periods of extensive militarization during the many military dictatorships of the 1970s and 1980s, defence spending remained low and activity in the global arms market was limited as new civilian governments sought to assert control over defence policies.

Despite this period of prolonged calm, Latin America remained a region where one country's arms acquisitions had the potential to impact negatively on regional security. The purchases of other states were still watched for signs of changes to the regional military balance and states sought to prevent or respond to perceived inequalities in military capabilities. For example, in 2005 tensions developed between Peru and Chile regarding Chile's acquisition of F-16 fighter aircraft from the USA.

Although the 'old' threats of interstate conflict rescinded, parts of the region remained beset by an array of 'new' security threats, including criminal violence, drugs-trafficking, social marginalization and guerrilla insurgencies. In certain cases, tackling these threats has led to an increased role for the military in internal security issues, as has recently occurred in Brazil and Mexico. In other cases this has led to improved forms of co-operation between states, including the development of an innovative array of confidence- and security-building measures. In others, unilateral action by one state has strained relations with neighbours and increased regional tension, as was the case with Colombia's attack on a FARC (Revolutionary Armed Forces of Colombia) camp in Ecuador in March 2008.

In recent years Latin America has seen a significant increase in both military spending and arms imports. The volume of arms transferred to Latin America during 2003–07 was 47% higher than in 1998–2002 (*Miami Herald*, 17 September 2007, 16A). This jump in arms transfers has led some to warn of a serious deterioration in the security and stability of Latin America. In September 2006 Óscar Arias, President of Costa Rica, citing recent purchases by Chile, Venezuela and others, declared that the region 'has begun a new arms race'.

The recent rise in military spending and arms acquisitions does show some elements of competitive behaviour by states in the region. For example, Brazil's apparent desire to keep pace with Venezuela's modernizations seems to be driving certain of its acquisition decisions. Some of Peru and Colombia's purchases seem to be in response to recent buys on the part of Chile and Venezuela, respectively. None the less, the majority of acquisitions have been primarily motivated by efforts to replace or upgrade military inventories in order to maintain existing capabilities; respond to predominantly domestic security threats; strengthen ties with

supplier governments; boost domestic arms industries; participate in peace-keeping missions; or bolster the country's regional or international profile.

Indeed, as this chapter demonstrates, the overwhelming impression presented by the region is one of continuity rather than change, with several states enacting long-delayed acquisition programmes due to improved economic situations and ageing equipment, rather than launching completely new programmes in response to the actions of neighbouring states.

In terms of suppliers, many commentators have noted the emergence of Russia as a significant exporter to Latin America as one of the most interesting developments in recent years (*LASSR*, December 2004, 11). While Russia's recent success in Venezuela has gained headlines, the true picture is again one of continuity rather than change. Russia has long been an important supplier to several countries in the region. Seven countries have purchased military hardware from Russia in the past decade: Argentina, Brazil, Cuba, Colombia, Ecuador, Peru and Mexico. Military helicopters have proven particularly successful, a pattern that has been continued with Brazil's purchase of 12 MI-35M combat helicopters at the end of 2008.

Latin America has never been under the exclusive thrall of any one supplier. The USA has provided the majority of supplies to certain countries during certain periods, but has never enjoyed a monopoly. Along with Russia, European and Israeli companies have long had a strong presence in Latin America, often deriving opportunities from the USA's unwillingness to supply certain advanced military technology. This pattern dates back to the 1960s when the USA refused to sell advanced combat aircraft to Latin America, and Peru responded by acquiring Mirage 5 fighters from France in 1967, becoming the first country in the region to acquire supersonic fighter aircraft.

This chapter analyses key trends in defence spending and arms procurement in Latin America between 1990 and the end of 2008. With the exception of Brazil, the largest country in Latin America, states have been grouped together based on geographic or political links. In each case a brief overview is provided of significant arms imports and acquisitions along with an analysis of the sources of the equipment and motivations for different purchases. Where relevant, information is also provided on developments in each country's domestic defence industry as well as any notable arms exports. The conclusions provide a brief overview of developments in the region as well as their overall relevance for the global arms trade.

Mexico and Central America

Mexico's military spending is relatively low as a percentage of gross domestic product (GDP), when compared with other countries in Latin America. Recent operational needs have seen a rise and an increase of 20% is being considered for 2009, but this would still leave spending at below 1% of GDP (*JDW*, 23 December 2008). Mexican procurement has also been limited by regional standards but it has drawn on a diverse array of suppliers. From 1990 to 2008, Mexico acquired military hardware from Belgium, Brazil, the People's Republic of China, Canada, the Czech Republic, Denmark, Germany, Israel, Finland, France, Italy, Qatar, Russia, South Africa, Spain, Sweden, Switzerland, Ukraine, the United Kingdom (UK) and the USA.

During the 1990s army procurement focused on a fleet of 504 armoured personnel carriers (APC) from second-hand sources including AMX-VCI infantry and Timoney Mk.V/BDX wheeled APCs from Belgium and France. An attempt to provide the Mexican army with an airmobile capability through the transfer of 73 UH-1H from US Army stocks failed and the helicopters were returned to the USA after they were found to be ill-suited for operations in Mexico's high central altitude (*Air Forces Monthly*, December 1999, 14).

During the 1990s, the navy renovated its major surface combatant fleet, acquiring six frigates, two amphibious warfare vessels and two auxiliary ships from the US Navy at reduced prices. Local production of ocean patrol vessels (OPVs) began during the 1990s, with eight

Holzinger 2000 class vessels delivered from local shipyards (SHCP 2001). Six locally produced Oaxaca-class OPVs are planned, with two already delivered and two in production.

Prior to the mid-1990s, Mexican air force and navy helicopter procurement was dominated by Western aircraft. Since then, Russian and ex-Soviet equipment has taken their place, with 12 Mi-8T, 40 Mi-17 and two Mi-26s transferred between 1994 and 2001. Some 10 Antonov An-32 transports were also acquired for the navy and air force. The navy and the air force also took delivery of US\$130m.-worth of surplus Israeli equipment during the early 2000s. Sales included two C-130E Hercules and four IAI Arava transports and four CH-53 Yasur helicopters for the air force, and two Aliya-class missile craft equipped with Gabrile SSM and three E-2C Hawkeye airborne early-warning aircraft for the navy.

In 2001 the air force acquired its first airborne early-warning capability with the \$250m. purchase of one EMB-145SA and two EMB-145RS surveillance platforms from Brazil. This deal marked a shift in the country's defence procurement policy from purchases of surplus kit to newly-built equipment. Another example is the \$14m. deal with China for new NORINCO M-90 howitzers, chosen in preference to surplus 105-mm Light Gun howitzers from the UK (SHCP 2004). However, it remains uncertain whether budget constraints will allow this change in acquisition policy to continue.

Since 2006 acquisitions have been redirected towards anti-drugs operations, with purchases of intelligence and surveillance force multipliers such as the Hermes 450 and Skylark I UAVs acquired through a \$25m. deal with Israel in 2008 (*JDW*, 10 September 2008, 10). Also in 2008, the navy announced a \$252m. deal for six CN-235MPA Persuader maritime patrol aircraft, as well as deals for three AS-565MB Panther embarked helicopters, to be delivered from 2010 (SHCP 2009). These purchases follow the acquisition of 39 CB90H (Polaris) fast assault craft from Sweden in 2000 for the Mexican Navy, which were also slated for anti-drugs operations (Dockstavarvet 2008).

Mexico's anti-drugs capabilities are also being supplemented by US military aid under the Merida initiative, aimed at improving the ability of Mexico and the countries of Central America to combat the threats associated with drugs-trafficking, transnational crime and terrorism (US Department of State 2007). In January 2009 the USA allocated \$99m. for two Cessna 208 Caravan surveillance planes and an undisclosed number of Bell 412EP helicopters (*El Universal* online, 8 January 2009). A total of \$205m. has been allocated for military acquisitions during fiscal year (FY) 2008, falling to \$120m. for FY 2009, and \$9m. for FY 2010 (US Congress 2008).

Central America is a relatively small defence market, with only four of the region's six Spanish-speaking countries fielding full-scale armed forces. Panama and Costa Rica rely on internal and public security forces for defence, while Guatemala, El Salvador, Honduras and Nicaragua still have relatively large stocks of weapons from the violent civil wars that peaked during the 1980s. Equipment is mostly ageing and largely inoperable in much of the region. In recent years, several impounded aircraft have been put into operational service.

In 2008 Guatemala, the largest country in the region, announced plans to modernize its armed forces and acquire six EMB-314 Super Tucano and 10 fast patrol boats from Brazil. Its only other significant acquisition since 1990 was of five T-35 Pillan trainers in 1998. El Salvador's large military shrunk during the 1990s from 60,000 troops to about 15,000. Equipment acquisitions during this period were limited to five T-35 Pillan trainers and five Bell 412EP helicopters in the late 1990s and 2000s, and three second-hand IAI Arava STOL transports from Israel in 2007 (AFM, December 2007, 41; AFM, June 2008, 20). Outgoing President Saca announced in early 2009 that the government would seek \$150m. for a military modernization programme (*elsalvador.com*, 8 January 2009).

The Honduran Air force received four Maule MXT-7-180 Super Rocket light aircraft in 2008, but this has been the only significant addition to its armed forces since 1990 (Fuerza Aérea de Honduras 2008). Its manpower and budget has also suffered a considerable decline. Finally, Nicaragua exported a significant amount of its inventory to Costa Rica, Ecuador and

Peru during the early 1990s, including 18 Mi-17 Hip, seven Mi-25 Hind radars and several hundred SA-16 SAMs, but did not make any significant acquisitions itself.

Venezuela and Colombia

Venezuela's military spending remained relatively stagnant during the 1990s and early 2000s and arms acquisitions were limited. Prior to 2006, the most significant transfers of major conventional weapons were in 1990–91 when France delivered 18 Mirage-50 combat aircraft, in 2000–02 when Italy delivered 12 SF-260M trainer aircraft and Poland delivered 18 M-28 transport aircraft. Until 2005 the primary sources of military equipment were the USA and Western Europe, which together accounted for 79% of Venezuela's imports for 1990–2005.

Since 2005 this picture has changed dramatically. Backed by rising oil prices, Venezuela boosted its military budget to \$2.57 billion in 2007, an increase of 78% on 2003. Military spending is slated to rise further, to \$3.1 billion in 2008 and \$4.14 billion in 2009 (*JDW*, 12 November 2008, 7). This jump in spending has supported a raft of major arms acquisitions, the majority of which have been sourced in Russia. Between 2005 and 2007, Russia and Venezuela signed 12 contracts for arms supplies worth over \$4.4 billion (*Kommersant* online, 25 September 2008). These deals covered the acquisition of 10 Mi-35 combat helicopters, three Mi-26 heavy transport helicopters, 40 Mi-17 multi-role helicopters, 100,000 AK-103 rifles and 24 Su-30MK combat aircraft. Contracts have also been signed for the construction of two factories in Venezuela, which will produce AK-103 rifles and related ammunition (*El Nacional* online, 1 June 2006). Since 2005 Venezuela has also signed deals for four Littoral Patrol Vessels and four frigate-size vessels from Spain, and 12 K-8 trainer aircraft and up to 10 JYL-1 radars from China. Venezuela has also signed a \$1 billion military agreement with Belarus covering the installation of surface-to-air missile (SAM) systems (*AP*, 23 July 2007).

During 2007 and 2008 there were also reports of ongoing discussions on a raft of additional purchases by Venezuela, including Su-35 and Su-39 combat aircraft, An-74 and Il-76 transport aircraft, Il-78 tankers, Mi-28 combat helicopters, TOR-M1 and S-300 SAM systems, BMP-3 armoured vehicles, T-72 tanks and Kilo Class submarines, all from Russia. However, as of January 2009, no contracts had been signed for any of these deals.

Venezuela's arms purchases are geared towards a number of different goals. Many of Venezuela's acquisitions are replacements for outdated or obsolete weapons systems and, even with the signed deals, Venezuela still has limited capabilities in certain areas, including air transport. Since his election in 1999, President Hugo Chavez has sought to build stronger economic and political ties with non-Western states, particularly Russia, China, Belarus and Iran, and weapons purchases have been a means of cementing these links. President Chavez has also claimed that the USA may one day invade Venezuela to depose his government and, along with other Venezuelan officials, has highlighted deterring such an attack as a key rationale for many purchases (*JIR*, January 2007, 66).

In October 2006 the USA imposed an arms embargo on Venezuela, depriving it of spare parts for its existing US-supplied stocks. US re-export restrictions have also blocked Venezuela's attempts to purchase military equipment from the Czech Republic, Brazil, Israel, Spain and Sweden.

Colombia has steadily increased its military spending since the end of the Cold War, rising from \$1,150m. in 1990 to \$5,329m. in 2007. Meanwhile, a special tax levied in 2006 is set to finance about \$4 billion-worth of equipment before President Alvaro Uribe leaves office in 2010 (*Defence Industry Daily*, 3 February 2009). When measured as a percentage of GDP, Colombia has had the highest level of military spending in Latin America since 2003. Colombia's main source of military equipment is the USA, which accounted for 71% of its arms imports between 1990 and 2007, much of which was funded by US aid. Since 1996, the USA has provided \$5,800m. in military and police aid to Colombia.

Funds were initially focused on police counter-drugs operations, but the remit of the assistance has expanded, including military counter-drugs operations since 2000, and military counter-insurgency operations since 2002 (Center for International Policy et al. 2007, 16). Acquisitions funded by US aid since 1990 include five C-130B Hercules Transport aircraft, 33 OV-10 Bronco ground attack aircraft and over 100 Bell-205, Bell-212 and Blackhawk helicopters. However, US policy on military and police aid to Colombia has shifted since the Democratic Party gained a majority in the US Senate at the start of 2007, with a greater emphasis being placed on the human rights record of the Colombian security forces and the freezing or reduction of funds (*Reuters*, 19 April 2007).

Significant non-US purchases since 1990 include 14 EMB-312 and 25 EMB-314s from Brazil, delivered in 1992–93 and 2006–07, Griffin guided bombs and Python-3 air-to-air missiles from Israel, delivered in 2002–03 and 2005, and transport aircraft and 155mm howitzers from Spain. Despite its close ties with the USA, Colombia has also purchased military equipment from Russia in recent years. Colombia took delivery of 10 Mi-17 transport helicopters in 1997 and six more units were transferred in 2002. The initial purchase was reportedly prompted by US refusal to supply Blackhawks. In 2005 Colombia signed a deal for the local assembly of Russian-built BTR-80 APCs.

Since 1990 Colombian acquisitions have been driven by its four-decade-long war against left-wing insurgent groups and the fight against the drugs trade. However, since 2005 Colombian officials and commentators have also paid close attention to Venezuela's arms acquisitions (*Miami Herald* online, 27 April 2005). Colombia has diverted some of its investment towards attaining a credible conventional defence capability, leading some to claim a reversal of the government's previous emphasis on counter-insurgency equipment (*Semana*, 28 October 2006). Evidence includes the acquisition of 155 mm howitzers and C-295M transport aircraft from Spain, and 24 Kfir C.10 multi-role fighters and a B-767 converted to tanker configuration from Israel. However most attention continues to be focused on combating domestic threats.

The Andean republics (Ecuador and Peru)

Between 1990 and the 1995 Alto-Cenepa War between Ecuador and Peru, both countries took advantage of the end of the Cold War and the availability of large quantities of surplus equipment from both sides of the Iron Curtain. However, while Ecuador traditionally sourced its equipment from France, the UK and the USA, Peru favoured weapons from Russia and the former-Soviet Union. Indeed, Peru was the first non-socialist Latin American country to acquire weapons from the Soviet Union in 1973.

Ecuador's main acquisitions during these years were of a pair of Leander-class frigates decommissioned from the UK Royal Navy and two C-130B Hercules transports and A-37B Dragonfly COIN aircraft from US Air Force stocks. Peru's main acquisitions consisted of a \$25m. contract with the newly elected government of Nicaragua, covering 7 Mi-25 Hind gunships, 15 Mi-17 helicopters and over 200 Iglá SAMs, plus radars and logistic equipment. The army also acquired 18 Mi-17 helicopters from Russia, as well as several An-32 Cline transport aircraft from different sources.

After the Alto-Cenepa War, the modernization of both countries' armed forces took very different directions. While Peru sought to acquire a number of systems from second-hand sources in order to bolster and increase its capabilities, Ecuador sought to rationalize and enhance what it already had, upgrading eight of its Kfir C.2 fighter-bombers to the CE standard. The only significant purchase consisted of 222 SA-16 Gimlet MANPADS from Russia, this being the most notable time that Ecuador strayed from its traditional sources.

The Peruvian approach saw a \$654m. deal with Belarus for the acquisition of 16 MiG-29 fighters and 18 Su-25 fighter-bombers, plus a large stockpile of missiles. This was the first major arms deal between a Latin American country and a former Soviet republic. The deal

was plagued with corruption and severe after-sales support problems (El Comercio online, 5 June 2007). Belarus, which inherited a large number of former Soviet equipment, lacked the industrial capacity to adequately support the hardware it sold and the only companies that could provide an adequate overhaul and maintenance service were unwilling to do so. Peru agreed to acquire three brand new MiG-29SEs for \$126m. from RAC-MiG before the Russian company agreed to provide an adequate service support for the ex-Belarus MiG-29s (Congreso de Peru 2002).

After signing a peace treaty in 1998, both countries disengaged from their long-standing competition with each other. However, their defence acquisitions continue to be heavily influenced by their respective neighbours' capabilities (Colombia's in the case of Ecuador and Chile's in the case of Peru).

Ecuador's threat perceptions are now mainly directed towards securing the northern border with Colombia (AFM, May 2006, 80). On 1 March 2008 Colombia attacked a FARC camp inside Ecuador. Ecuador had protested previous Colombian incursions into its airspace, most of which were carried out in hot pursuit of FARC forces (IISS 2007, 51). However, the March attack drew attention to Ecuador's ageing equipment and failing capacity to respond to threats inside and outside its borders. This accelerated and enhanced an armed forces modernization programme that began life in 2006. Originally focused on providing a stand-off surveillance capability to detect oil smugglers, the programme expanded to include providing surveillance on the border with Colombia. Relations with Colombia look set to be the main driver of Ecuadorian arms acquisitions during the next few years.

Total announced procurement spending since 2006 has reached \$500m.; the air force has selected 24 EMB-314 Super Tucano attack aircraft, seven HAL ALH Dhruv tactical helicopters from India and new Chinese radars (*JDW*, 21 January 2009, 11). The Chinese purchase follows an October 2008 military co-operation agreement between China and Ecuador covering the exchange of military hardware for oil (*JDW*, 17 October 2008).

The army is to upgrade its existing five Super Puma helicopters and acquire new electronic surveillance systems, as well as replace its existing fleet of tanks with surplus Chilean Leopard 1V MBTs (*JDW*, 30 April 2008, 12; *JDW*, 9 January 2009, 11). The navy took delivery of a pair of Leander frigates surplus to the Chilean Navy and it ordered the IAI Heron and Searcher UAVs to be used in maritime surveillance activities (AFM, December 2008, 22).

Since 2000, Peru has focused on the Nucleo Básico Eficaz (NBE—Basic Efficient Nucleus) programme aimed at putting large amounts of stored or unserviceable equipment back into service. The 2002 Quiñonez Plan, implemented in 2007, centred on repairing helicopters, trainers and transport aircraft. It included the return to service of most of the MB-339AP, EMB-312 Tucano, Zlin Z-242, most of the larger transports from a variety of sources, and the Mi-17 fleet. The next phase of the programme will comprise the upgrade of the combat fleet: the Mirage 2000 fleet will be upgraded through a \$120m. package with France, followed by a \$60m. contract for the Su-25 Frogfoots and a \$106m. for the upgrade of the MiG-29 fleet to a new SMT standard (El Comercio online, 24 Jul 2007; AFM, October 2008, 21).

The Peruvian Army's only significant acquisition in recent years has been a purchase of Spike and Kornet anti-tank missiles in early January 2009 – an apparent response to Chile's acquisition of Leopard 2 tanks (*peru.com*, 7 January 2009). This underlines the fact that although there are undoubtedly closer and friendlier relations with Chile, the modernization or expansion of its capabilities is still a matter for concern to Peru.

The central republics (Bolivia, Uruguay and Paraguay)

Bolivia, Uruguay and Paraguay are very different countries with distinct procurement policies, yet upon closer examination they display a number of common threads. All three have been relatively minor importers of military equipment during the 1990s, accounting for only 2% of

total transfers to Latin America. They are also very interesting players in the global arms trade, acquiring equipment more often found in the museums of other states in the region. At the same time, Bolivia and Paraguay are heavily influenced by several regional and external powers (Argentina, Brazil and Taiwan in the case of Paraguay, and Venezuela, Spain and China in the case of Bolivia) and have relied on their generosity for many of the equipment needs. In contrast, Uruguay has shown greater independence in its procurement policies. Uruguay's substantial international peace-keeping commitments have been the main drivers in this area; a motivation which has often enabled it to obtain surplus equipment at lower than market prices, mainly from NATO countries.

With the end of the Cold War, Uruguay gained access to the lucrative surplus opportunities in both Eastern and Western Europe. The disbandment of the UK presence in Hong Kong saw Uruguay become the last recipient and operator of the Westland Wessex helicopter. From 1991 to 2002, the Uruguayan Navy and Air Force acquired 16 units. The navy acquired five surplus East German vessels as well as two Commandant Rivière-class frigates from France in 1991. The end of the Cold War also saw a shift towards the former Warsaw Pact countries as Uruguay sought to take advantage of the low prices on offer. Contact with the Czech Republic saw the acquisition of 60 OT-64 APCs in 1995, followed by a second batch of equipment that included 30 OT-64 APCs, 15 BMP-1 infantry fighting vehicles (IFV), six 2S1 (M1974) 122 mm SP howitzers and three MT-LB logistics vehicles. A 1997 deal with Israel saw the acquisition of 15 Ti-67 (modernized T-55) tanks and nine TCM-20 AA systems (Guevara 2005, FAM 57–62).

In a limited number of cases, Uruguay has acquired new hardware, such as 13 SF-260M basic trainers in 1999, an Indra Lanza 3D radar system in 2006 or 16 Boston Whaler patrol boats, but most of what it has received since 2000 has been obtained on the second-hand market. Examples include two Bell 212s obtained on the Dutch civilian market, three IA-58 Tucara attack aircraft from the Colombian Air Force, six former German Army Bo-105s, two Joao Belo (Commandant Rivière) class frigates from Portugal, four UH-1H helicopters from the Spanish Army and 40 General Dynamics Cougar 6x6 APC from Canada. The first 16 Cougars are to deploy to Congo (MONUC), while a second batch will be sent to Haiti's MINUSTAH (*JIDR*, January 2009, 21). The new patrol boats will also be deployed to Haiti.

Bolivia continued receiving limited amounts of aid from the USA in the immediate post-Cold War period, mainly as support for anti-drugs operations. This comprised six UH-1H Iroquois helicopters and a single C-130B Hercules transport. From the early 1990s, though, China became a new source for inexpensive equipment, with artillery holdings bolstered by the arrival of 36 Type 54-1 122-mm howitzers and 18 Type 67 AA guns in 1994. This was followed by some 10,000 AK-47 assault rifles and 28 HN-5A MANPADs during 1996. From 2001 the army also acquired HJ-8A Red Arrow anti-tank missiles from China. The arrival of an indigenous, left-wing government headed by President Evo Morales in 2006 has placed renewed attention on the armed forces' equipment and roles. The immediate priority for the Morales government has been restoring air mobility and this led to the acquisition of a mix of transport aircraft from the second-hand civilian sector during 2006–07. Bolivia has acquired a Fokker F.27, two BAE 146s, a Beech 1900D, a Convair CV-580 and a DC-10, all of which will be operated by the military-run TAM airline (*SAORBATS* online, 4 March 2008).

Venezuelan aid is not new to Bolivia and included a squadron of F-86 Sabre jet fighters in 1973 and eight VT-34 Mentor basic trainers in 2004 (AFM, August 2006, 24). Since 2006 Venezuela has loaned two AS-532 Cougar medium-lift helicopters under the SICOFAA (Air Forces of the Americas Co-operation System) and transferred two SA-316 Alouette III light helicopters. The loss of one of the Cougars and one of the Alouettes (in separate accidents) as well as the floods in 2007 highlighted the need for further helicopter acquisitions. In February 2008 Morales announced the pending acquisition of up to seven helicopters, including two for civil defence roles (*EFE*, 14 February 2008). Attention has since shifted to securing the country's

airspace. In December 2008 Morales announced that he had authorized the acquisition of six L-159 ALCA jet fighters from the Czech Republic for \$57.8m. (*JDW*, 7 January 2009, 11). Morales also announced that these would be the country's first purpose-bought anti-drugs fighter aircraft.

One of the poorest countries in Latin America, Paraguay's recent acquisitions have been donations from Taiwan and, more recently, Brazil and Argentina. In 1990 Taiwan provided the air force with six AT-33 armed jet trainers and in 1995 offered to donate 12 F-5E/F Tiger II tactical fighters. As these would have been a drain on already scarce operational resources, Taiwan instead provided six UH-1H Iroquois helicopters, which arrived in 2001. In 2005 Brazil donated six T-25C Universal basic trainers and offered to provide a complete overhaul to the fleet of 40 ENGESA EE-9 and EE-11 armoured cars that Paraguay acquired from Brazil in 1984. Argentina is increasingly becoming the country's main source of military aid, with six Bofors L/60 AA guns delivered in 2007 and a commitment to deliver up to 20 WW2 M9 track APCs and M-1935 75-mm field howitzer (*SAORBATS* online, 22 July 2008). Paraguay's only significant acquisition during the past few years was a single CASA C-212-400 Aviocar transport aircraft delivered in 2003.

Brazil

Between 2003 and 2007 Brazil accounted for 46% of total military spending in Latin America. Significant post-1990 arms transfers to Brazil include the transfer of four second-hand Type-22 frigates from the UK and a second-hand aircraft carrier from France. During the late 1990s and early 2000s a number of major weapons purchases were either cancelled, delayed or replaced with less ambitious purchases. Plans to purchase new fighter aircraft to replace the Mirage IIIs and F-5s in service – the 'F-X' programme – were originally outlined in 2000 but delayed and then down-sized in favour of second-hand Mirage 2000s, F-5s and upgrades to the existing fleet. Overall, Brazil fell from being the 21st-largest recipient of military equipment in the world for the period 1998–2002, to the 32nd-largest for 2003–07.

Collectively, France, Germany, the UK and the USA accounted for 79% of arms transfers to Brazil between 1990 and 2007, with the UK accounting for 27%, followed by France with 22%. Post-2006 deliveries have included 12 second-hand Mirage-2000C combat aircraft from France; 11 second-hand F-5E/F combat aircraft from Jordan; 12 C-295M transport aircraft from Spain; and six S-70 Blackhawk helicopters from the USA. Brazil is also modernizing its fleet of F-5E combat aircraft, equipping them with Derby air-to-air missiles from Israel.

Since mid-2007, Brazil has made a series of announcements on a set of long-planned, though frequently delayed, weapons acquisitions, signalling a renewed willingness to improve and upgrade its military forces. In July 2007 the government revived a long-standing project to build a nuclear-powered submarine. First discussed in 1979, though subject to numerous delays, the latest version of the plan will involve Brazil investing 1 billion reais (\$560m.) over eight years to purchase technology to build the submarine and to develop a nuclear reactor with Argentina to power the boat (*Reuters* online, 11 July 2007). Brazil is also moving ahead with plans to build 50 EC-725 Super Cougar helicopters and four conventional submarines. In addition, Brazil has re-launched the 'F-X' combat aircraft programme, allocating \$2.2 billion for an initial procurement of 20–36 aircraft, although the final number purchased may be up to 120 (*Flight International* online, 12 November 2007). Acquisitions will be backed up by an increase in Brazil's military budget, which rose from 6.5 billion reais (\$3.64 billion) in 2007 to 10 billion reais (\$5.6 billion) in 2008 (*Xinhua* online, 31 October 2007).

Other Brazilian arms purchases continue to be hampered by the lack of a centralized procurement system. As a result, different branches of the armed forces continue to pursue parallel programmes for the acquisition of similar weapons systems, as with the army's and marines' efforts to purchase amphibious armoured personnel carriers. While the army has launched and re-launched competitions for a new family of vehicles to be developed and built locally

based on a foreign design – the VBTP-MR, which is based on the IVECO Puma – the marines have opted for an off-the-shelf purchase of General Dynamics Land Systems Piranha III. To date, the Marines have 12 Piranhas in service and 18 more on order, while development of the VBTP-MR is yet to reach fruition (*JDW*, 21 November 2008, 12).

Brazil's post-Cold War acquisitions have been motivated by a number of priorities. First and foremost, Brazil has focused on the acquisition of capabilities that will help it to better police the country's vast coastline and remote border areas, particularly in the Amazon region (*Mercopress* online, 6 November 2007). There has also been speculation that certain of Brazil's purchases, particularly the revived and expanded FX2 programme, may be a response to Venezuelan arms acquisitions. Brazil's 2007 procurement announcements came in the wake of a string of commentaries by Brazilian analysts and former government officials raising questions about Venezuela's arms purchases (*LASSR*, November 2007, 11).

Brazil has also long sought use of its foreign arms acquisitions as a means of boosting its domestic arms industry by insisting on significant levels of technology transfer and this remains the case today. During the 1980s Brazil had the most successful military industry in Latin America with well-developed production capabilities in the fields of tanks, infantry fighting vehicles, troop carriers, heavy trucks, aircraft and rocket launchers (*AP* online, 4 September 2008). It was a significant exporter of military equipment and the 11th-largest supplier in the world for the period 1984–88. However, much of this success was based upon transfers to Iraq during the Iran–Iraq War and the industry suffered greatly after the conflict ended in 1988. Today, Brazil is able meet most of its procurement needs within certain fields of the aerospace sector and light armoured vehicles through local production, but has not regained the level of exports it had in the mid-1980s.

To strengthen Brazil's defence industry, the government has stated that the arms procurement deals announced since mid-2007 will include production in Brazil and significant levels of technology transfer (*Mercopress* online, 6 November 2007). France's Eurocopter and DCNS have emerged as the key winners in the latest round of contract awards, largely due to their greater willingness to meet Brazilian demands on these issues. If Brazil is to achieve a long-term increase in the size of its defence industry it will need to boost its level of arms exports. In this regard, Brazil may be helped by the latest round of defence modernization plans among Latin American states. During 2008 there were reports of advanced negotiations on the sale of EMB-314s to Bolivia, Chile, the Dominican Republic, Ecuador and Guatemala. Prior to 2008 the only foreign buyer for the EMB-314 had been Colombia.

Southern cone (Argentina and Chile)

Chile and Argentina began the 1990s with recent memories of the right-wing military dictatorships that ruled both countries during much of the 1970s and 1980s (up till 1983 in the case of Argentina and 1990 in the case of Chile). One of the legacies of the long years of military rule in Chile is a constitutionally guaranteed appropriation for defence spending via the so-called 'copper law', in which the armed forces receive 10% of revenue for defence procurement from copper sales from the state-controlled CODELCO. In contrast, one of the legacies in Argentina has been strained relations between the civilian governments and military forces, and frequent accusations of under-funding by the latter.

Despite the Copper Law, Chile's military spending remained relatively stable during the 1990s and early 2000s. Indeed, Chile's military spending fell from 4.3% of GDP in 1990 to 3.2% in 1997. Major acquisitions during these years included 25 second-hand Mirage fighter aircraft from Belgium, delivered in 1995–96. Chilean defence budgets increased significantly in the 2000s, partly fuelled by an increase in world copper prices, nearly doubling in size between 1997 and 2007. This increase has funded a wave of major arms acquisitions under an ambitious force modernization programme.

Since 2005 Chile has taken delivery of 10 newly built F-16C/D combat aircraft from the USA; 18 second-hand F-16AM/BM combat aircraft, two second-hand Doorman frigates and two second-hand Van Heemskerck frigates from the Netherlands; three second-hand Type-23 frigates from the UK; 24 second-hand M-109 155-mm self-propelled guns from Switzerland; the first 112 of 140 second-hand Leopard 2A4 tanks from Germany; two Scorpene submarines built by France and Spain; and Derby and Python-4 air-to-air missiles from Israel. In 2008 Chile also placed an order for 12 EMB-314 Super Tucano aircraft from Brazil. Increased arms transfers have seen Chile rise from the 38th-largest recipient of military equipment for the period 1998–2002, to the 12th-largest recipient for the period 2003–07 and the largest in Latin America. Despite this rise, Chile accounted for just 2% of global transfers of major conventional weapons for the period 2003–07.

Chile's acquisitions replace mostly ageing or decommissioned systems and most purchases are of second-hand equipment. However, the purchases of F-16 aircraft, Scorpene submarines, Type-23 frigates and Leopard 2A4 tanks also indicate a significant qualitative advance, particularly in comparison with the armed forces of other countries in the region. Indeed, Chile has emerged with the most advanced military force in Latin America. These acquisitions, particularly the 2002 purchase of F-16s, sparked some concerns in Bolivia and Peru, both of which have long-standing border disputes with Chile (*JDW*, 6 July 2005, 8). At the same time, Chile has also been involved in the development of a range of Confidence Building Measures (CBMs) with its neighbours on defence and security issues (Bromley and Perdomo 2005).

Chile has also been a supplier of military equipment to other states in Latin America. Between 1991 and 2002 Chile supplied 37 of its indigenously produced T-35 Pílan aircraft to the Dominican Republic, El Salvador, Guatemala, Panama and Paraguay. More recently, Chilean sales have been boosted by the increased procurement activity of other states in the region, particularly in Ecuador. In 2008 Chile delivered two second-hand Leander frigates to Ecuador and is also upgrading two of its Type 209 submarines. Reports in early 2009 indicate that Chile and Ecuador have reached an agreement on the sale of 30 second-hand Leopard-1Vs which Chile acquired in 1999–2000, but is retiring to make way for the Leopard 2A4s from Germany (*JDW*, 14 January 2009, 11).

Argentina's military spending remained largely static during the 1990s. However, in contrast to Chile there has been no subsequent upswing in spending during the 2000s. Indeed, in constant (2005) dollars Argentina's military spending actually fell from \$2,074 billion in 1997 to \$1,752 billion in 2007. Much of this drop is attributable to the 2002 financial crisis, which saw the Argentine economy contract by 10.9%, leading the government to default on a number of international loans, while making it harder for the government to obtain new credit for weapons purchases. Indeed, the financial crisis led to the shelving of a number of air force modernization projects (Perlo-Freeman 2003).

Compared with Chile, Argentina has not been a major player in the global arms trade in recent years. Several major acquisitions were made in 1998–2000 but subsequent purchases have been limited. Since 1990, 35% of Argentina's arms acquisitions have come from Germany and 55% from the USA.

Argentina's position in the world arms market is affected by its strong defence industry, which allows the military to fulfill many of its equipment needs domestically. The Argentine defence industry has managed to produce or design a range of systems under licence, including main battle tanks, submarines, ground attack aircraft and howitzers. Argentina was the first Latin American country to design and fly an indigenous jet fighter, and is also the first in the region to establish a programme for the development of an indigenous UAV (*Unmanned Vehicles*, May 2008, 24).

In October 2007 Argentina announced the launch of a multi-year funding programme designed to restore and enhance the operational capabilities of the armed forces. The plan may result in \$200m. a year of additional funding for the period 2008–13 (*JDW*, 31 October

2007, 32). Argentina is also advancing long-standing plans to purchase new fighter aircraft and was understood to be considering offers of second-hand Mirage-2000 aircraft from France and second-hand F-16s from the USA. However, as with the rest of Argentina's modernization plans, the fighter aircraft plan has yet to bear fruit in terms of concrete orders (*Mercopress* online, 22 December 2007). It remains to be seen whether the current financial crisis will affect Argentina's force modernization plans in the same way that plans were affected by the downturn in the early 2000s.

Conclusions

The overall picture that emerges from this survey of recent developments with regard to arms modernization in Latin America is one of continuity rather than change. Several countries in the region have embarked on ambitious arms modernization programmes, fuelled either by rising commodity prices, as in Chile or Venezuela, or increased national prosperity, as in Brazil. However, despite the warnings of a regional arms race, most of the purchases that have taken place in recent years are the culmination of long-discussed acquisition plans, most of which are aimed at replacing or updating obsolete systems. While defence spending and imports have increased in recent years, this also comes off the back of a prolonged period of falling or stagnating budgets and often vocal criticism from the military concerning underfunding.

That said, questions can still be asked with regards to the wisdom and suitability of many of the purchases. In particular, Venezuela's Su-30 acquisition was criticised by many as a waste of resources and out of proportion with the actual defence needs of the country. Brazil's renewed interest in a nuclear-powered submarine has also drawn attention for similar reasons. In addition, there are clear signs of competitive behaviour in certain purchases that states have made recently, with Peru keeping a close eye on Chile's acquisitions and Colombia and Brazil both eyeing Venezuela.

As noted, many commentators have recently drawn attention to the emergence of Russia as a key supplier to Latin America. However, perhaps the more interesting development identified in this chapter is the growing role of other emerging suppliers, such as China and, to a lesser extent, India. These countries look set to join the long list of suppliers competing for Latin American business, possibly driving down prices and undermining any attempts on the part of the USA to limit the introduction of certain weapons systems into the region.

Also noteworthy is Brazil's rediscovered insistence on high levels of technology transfer in its latest round of arms acquisitions, and the extent to which this is favouring French suppliers at the expense of both the USA and Russia. Other countries also appear to be seeking to strengthen their defence industrial base through the licensed production of foreign-designed equipment. However, the extent to which states will succeed in this regard remains an open question. Overall, the level of capability in the region's defence industries is lower now than it was in the 1980s, when Argentina and Brazil were able to produce an array of different technologies from scratch.

Brazil's long-term goal is to re-energize its own domestic defence industry and regain the level of exports it achieved in the 1980s. The extent to which it manages to achieve this goal may depend on the extent to which it is able to capitalize on the latest round of regional modernization programmes among other countries in the region. Chile's defence industry is also benefitting from the latest round of acquisitions, particularly those being made by Ecuador. Both countries will provide interesting indicators of the extent to which defence industries in the region are becoming truly revitalized.

Still unclear is how the latest financial crisis will affect the continent's arms-acquisition programmes. During 2001–02 many acquisition programmes were cancelled as governments battled with the fallout from the Argentine financial crisis. If, as many predict, the global financial crisis that started in 2008 is more severe than in the early 2000s, it could have a

serious impact on state defence plans. Upcoming fighter-aircraft purchases by Brazil and the extent to which Venezuela follows through on its set of follow-on purchases from Russia, will provide a clearer bell-weather in this regard.

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