

## Taiwan

### I. Current National Security Situation

With the end of the Cold War, Taiwan saw a dramatic reduction in the likelihood of global military conflict. However there was also an opportunity for the PRC and Japan to expand their military capabilities. The development of nuclear weapons, North Korean ballistic missiles, and littoral rivalries in the South China Sea also create potential sources of military conflict. Hence Taiwan viewed an increased threat to both their national security and also to their continued economic development.<sup>1</sup>

Within this context, Taiwan's views on national security are shaped predominantly by their tense relations with mainland China. Both entities have long asserted that there is one China. The recent verbal attempts by Taiwan's president to re-cast the relationship between the two countries as "state-to-state" and the subsequent vitriolic responses by China represent one of many low points in the relationship between the two since 1949. Taiwan's fears are fueled by the reduction of the threat to the PRC from the Soviet Union, PRC force redeployments, PRC initiatives to develop improved naval forces, and PRC military modernization that draws heavily on arms imports from Russia. In 1993, the PRC published a white paper, *The Taiwan Question and the Reunification of China*, indicating that the basic PRC stance on the use of force against Taiwan had not changed.<sup>2</sup>

Taiwan is roughly the size of the Netherlands, with a population of about 20 million. Nevertheless, it has maintained a standing army of about 450,000, an air force of 300-400 fighters, and a naval fleet that includes about 20 destroyers. Significantly smaller than the PRC, Taiwan's military strategy has been to maintain a capability to inflict severe damage on any Chinese invasion forces. Since the end of the Cold War, Taiwan has also tried to diversify its security burden by trying to improve political relations with the PRC, seeking readmission to the UN, encouraging substantive economic relations with many countries, and seeking regional security partners to offset exclusive reliance on the US.<sup>3</sup>

#### *Military requirements*

As a result of the scale, nature, and proximity of the main threat, certain missions have primary importance within Taiwan's military strategy: countering blockade operations by maintaining air and sea control around the main island, anti-landing operations, and air defense.<sup>4</sup> These shape the national armament plan as well as the operational aspects of their military. Recently Taiwan has also become concerned about the possibility of PRC information warfare attacks against Taiwan's infrastructure.<sup>5</sup>

#### *Armament requirements*

Taiwan's military equipment at the end of the Cold War was primarily older U.S. equipment provided under the 1979 Taiwan Relations Act that commits the US to provide for Taiwan's defense needs. As spare parts and maintenance support becomes increasingly unavailable, the Taiwan military will retire these platforms and replace them via new

procurements. Since the mid-1980's, cash-rich Taiwan has been eager to modernize its near obsolete air, naval, and ground forces.

In 1999, Lee Teng Hui, Taiwan's president, also called for the development of a new tactical ballistic missile defense system to counter the PRC missile threat.<sup>6</sup> The Taiwanese Minister of Defense, Teng Fei, cited missile defense as Taiwan's top priority. Although Taiwan will seek approval to purchase PAC-3 systems and Aegis radars, it also will pursue indigenous missile defense developments.<sup>7</sup> The Chungshan Institute of Science and Technology will play a major role in the project, which expected to take 10 years and cost over \$9B US. The system will focus on low-altitude defense against both ballistic and cruise missiles.<sup>8</sup>

### *Defense expenditures*

In 1997 Taiwan's military expenditures were \$13.1B (1997\$US), compared with \$10.3B (1997\$US) in 1991.<sup>9</sup> This placed Taiwan 12<sup>th</sup> globally.

Taiwan's defense spending as a proportion of GDP is 4.9 percent (1997 estimate), one of the highest in Asia (ranging from Japan at 1 percent to China at 5.7 percent).<sup>10</sup>

## **II. National Defense Industrial Base**

Taiwan has desired self-sufficiency in defense production as a result of their perception of a hovering mainland China threat and Taiwan's relative isolation in the international community. The Taiwanese government has promoted state-owned defense corporations since the 1970's to ensure an indigenous defense industrial base. Although some private-sector defense industries have thrived, the Taiwanese defense production capacity is dominated by two state-owned organizations run directly by the Taiwanese military: the Chung Shan Institute of Science and Technology (CSIST) and the Combined Service Forces (CSF).

The CSIST was formed by the Taiwanese government in 1969. The purpose was to promote self-sufficiency. It has four major research divisions—aeronautics, missile and rockets, electronics, and chemistry—and conducts joint IR&D with the Aero Industry Development Center, which was under CSIST supervision. The CSIST is a defense success story for Taiwan, having domestically designed, tested and produced weapons systems including rockets, SAMs, AAMs, artillery fire control systems, sonar systems, and naval electronics and warfare systems. The Aero Industry Development Center (AIDC), began with co-production of UH-1 helicopters and F-5 fighters and has evolved to totally indigenous development of two different jet aircraft. The AIDC has been able to produce over 600 military aircraft and over 300 aircraft engines through a combination of joint ventures, technology transfer and assistance programs.<sup>11</sup>

The Combined Service Forces (CSF) serves as the logistical command responsible for the production of ordnance, military maps, and communications equipment for Taiwan's

armed forces. They also provide support and logistics services for all branches of the armed forces.

### *Taiwan's Global Top 100 Defense Industries*

In 1991 no Taiwanese companies were in the global top 100 defense industries as measured by annual defense revenue.<sup>12</sup> By 1999 one company (Aerospace Industrial Development Corporation) had made the list, with an annual defense revenue of about \$0.9B (1999\$US),<sup>13</sup> placing the corporation in the 32<sup>nd</sup> position.

### **III. National Armament Strategy**

Until the break in diplomatic relations in 1979, Taiwan was a close military ally of the U.S. and as such, relied heavily on U.S. suppliers for its defense needs, many purchased directly from the U.S. government through the Foreign Military Sales program. Also, most major U.S. defense contractors maintain well-established relationships with the Taiwanese military. However, since 1990, Taiwan has attempted to diversify its sources of defense equipment, an effort that has received considerable attention from the cash-strapped European defense contractors. Taiwan's ability to purchase abroad will continue to be affected by the trade-offs that foreign governments must consider when selling to Taiwan, sales that may jeopardize opportunities in the large and relatively untapped PRC market.

In pursuing its current armament needs, democratization in Taiwan has resulted in domestic legislative pressures on the Ministry of Defense to not automatically purchase from the US, but instead to seek lower prices, higher technical capabilities, and a greater role for local industry. There is also now increased legislative control over arms purchases, a departure from earlier periods of strict military control. In 1994 Taiwan, for the first time in decades, delayed the purchase of military items approved for export by the United States.<sup>14</sup> Internationalization of procurement, and lessening traditional reliance on the United States, has been a specific objective of Taiwan's modernization program.<sup>15</sup>

Strategically, Taiwan is committed to developing self-sufficient aerospace and shipbuilding industries.<sup>16</sup> However, Taiwan has placed cost savings and technical performance over indigenous production. One key example is the Indigenous Defensive Fighter (IDF). This was developed locally with US technical assistance at a cost of \$2B. There also were developmental problems that slowed the intended production rate. Additionally, in mid-stream, the United States agreed to sell Taiwan 150 F-16 A/E fighters with associated weaponry for \$5.5B, and France agreed to sell Taiwan 60 Mirage 2000-5 fighters with advanced MICA medium-range air-to-air missiles for a similar price. As a result, Taiwan reduced its domestic order for the IDF from 250 down to a smaller purchase of 130 aircraft.<sup>17</sup> Similarly, a domestic production order for nine Sky Bow anti-aircraft missile sites was cut to six after the US offered to sell Taiwan a Patriot variant.<sup>18</sup>

Taiwan industry participated in 10 per cent of the contract value for the F-16 acquisition, which added \$600M revenue to local commercial industry over a ten-year period.<sup>19</sup> The Mirage acquisition also contained equivalent offsets, including technology transfer.<sup>20</sup> As

the production run for the IDF ended, many large and small Taiwanese companies, facing inadequate revenues, appealed to the government to enforce increased offset requirements on foreign procurements.<sup>21</sup>

Block obsolescence is also an issue. Starting in the early 1990's, the navy spent more than \$10B to replace 40-year old ships purchased from the United States. This is being accomplished by the domestic production of eight frigates, based on the US Navy *Perry* class design, including eventual retrofitting of some of these with an advanced Aegis-type combat system. Taiwan also purchased six *LaFayette* class frigates from France (DCN). France and Israel offered a variety of combat systems and weaponry to equip the *LaFayettes*. Taiwan's attempts to procure new submarines from Germany, and submarine technology from the Netherlands for indigenous construction, were unsuccessful, so the French DCN International offered Taiwan its Agosta 2000 submarine. The fact that Taiwan's navy will consist of ships and systems from so many countries may eventually present a logistics support problem.<sup>22</sup>

Taiwan has pursued imports from many countries to help upgrade their defense force, and also to provide improved indigenous development and production capabilities where possible. In addition to the F-16/Mirage/*LaFayette*/Patriot procurements, other examples include Oerlikon (Swiss) air defense systems, French MISTRAL man-portable missiles, a Fincanteri (Italy) ocean survey ship, Finnish radar systems, and Iroquois (US) armed helicopter upgrades. Taiwan has also embarked upon a major international procurement to purchase up to 1000 tanks and armored vehicles over the next decade. At least six countries are competing, including Austria, Canada, France, Ireland, and the United States.<sup>23</sup> Although in many cases US systems are the preferred choice, export controls have prevented Taiwan from acquiring them, so alternative sources have been sought.<sup>24</sup> In 1999 Taiwan's Minister of Defense Tang Fei visited the Middle East to try and develop military exchanges with those countries.<sup>25</sup>

Taiwan has a fairly broad range of arms capabilities, but lacks the developmental capacity of China or Japan, for example. The Taiwanese defense industrial base is hampered by the fact that many countries (with the United States being a notable exception) will not transfer technology to Taiwan because it lacks a sovereign status. The United States has provided technology transfer to Taiwan under the terms of its bilateral security agreement for decades but not on a consistent basis; for example, the U.S. refused to sell F-16 fighters to Taiwan in the mid-1980's, ultimately leading Taiwan to develop an indigenous fighter program (IDF). These sales restrictions were subsequently eased (resulting in the sale of 150 F-16's) and other countries, such as France, chose to provide arms in the early 1990's. Nonetheless, the Taiwanese ability to expand their internal defense production capacity is hindered by international political issues.

The end of the Cold War has removed some of the international restrictions on arms imports. However some nations continue to be influenced by PRC pressures designed to discourage advanced weapons sales to Taiwan. For example, Taiwan's long-standing attempt to purchase ten advanced submarines, probably from Germany and the Netherlands, has been delayed due to PRC considerations.<sup>26</sup> During the 1990's, both the

French and Italian governments deliberately reduced military sales to Taiwan to improve the likelihood of commercial sales with the PRC.<sup>27</sup> Recently, export of advanced US systems (e.g., F-16 navigation and targeting pods) has also been caught in the tension between US commitments to Taiwan and US initiatives with respect to the PRC.<sup>28</sup> Some Taiwanese declaratory statements in the aftermath of the India-Pakistan nuclear tests also hinted that Taiwan may be forced to develop nuclear weapons for self defense if US arms export support proves to be inadequate.<sup>29</sup> Taiwan is currently seeking approval to purchase a broad suite of US advanced armaments, including P-3C patrol aircraft, Aegis radar systems, AMRAAM, information warfare technology, and UAVs.<sup>30</sup>

After completion of its massive modernization program, Taiwan will be confronted with the high maintenance costs required to keep the modern systems operational at peak performance levels. Taiwan has planned manpower cutbacks as a means to generate additional revenues needed for maintenance.<sup>31</sup>

The unreliability and unpredictability of foreign suppliers also creates a new urgency for Taiwan's attempts to achieve self-sufficiency in armaments development, even though the costs of doing so require major and disproportionate investment.

Taiwan's ability to purchase arms internationally was reduced by the Asian financial crisis. Taiwan's currency dropped 18 percent against the US dollar in the year following June 1997, depreciating their purchasing power for defense procurements.<sup>32</sup> Taiwan's acquisition of 100 U.S. built helicopters (\$1 billion) was delayed as a result of the ensuing fiscal measures, but the other major procurements were relatively untouched. These included a \$300 million naval package from the United States, \$160 million in navigation and targeting pods for F-16s; and domestically built submarines.<sup>33</sup>

#### *Arms import level*

In 1997 Taiwan arms imports were \$9.2B (1997\$US), compared with \$1.5B (1997\$US) in 1991.<sup>34</sup> This placed Taiwan 2<sup>nd</sup> globally.

#### **IV. Perspectives on the International Arms Export Market**

Since production of the IDF fighter was curtailed by the Taiwan decision to purchase fighters from the US and France, Taiwan has sought to sell the aircraft externally, as long as there is political benefit for doing so. These sales will offset sunk R/D costs, and maintain the use of resources in Taiwan's aerospace industry.<sup>35</sup> A Taiwanese industrial consortium also formed a strategic alliance with Northrop-Grumman to upgrade older F-5E Tiger II aircraft for external sales, with the upgrades tailored to the needs of specific customers.<sup>36</sup>

#### *Arms export level*

In 1997, Taiwan's arms export level was only \$20M (1997\$US), compared with \$6M (1997\$US) in 1991.<sup>37</sup> This placed Taiwan 34<sup>th</sup> globally.

## **V. Transformations in the Defense Industrial Base**

Taiwan has tried to capitalize on success in other fields and diversify their military-oriented aerospace industry into the civilian sector. Several potentials have been explored but – with the exception of the Sikorsky-92 HELIBUS large helicopter– they have not been successful. Taiwan is still trying to enter the commercial airliner market, but has been blocked by competition from China, both political pressure and the appeal of a large untapped internal PRC market.<sup>38</sup>

The Chungshan Institute of Technology, Taiwan's main supplier of locally produced weaponry, in 1994 began to downsize its staff and reduced its organizational capabilities as its production fell due to the increase of overseas purchases.<sup>39</sup>

In July 1996, AIDC began the conversion from military to private enterprise status. The Taiwanese legislature had hoped to accelerate the growth of its aerospace industry by enabling foreign high-tech manufacturers to form joint ventures with AIDC, and thus bring advanced aviation technology into Taiwan.<sup>40</sup>

## **VI. Risks and Concerns**

- The unreliability and unpredictability of foreign suppliers creates a new urgency for Taiwan's attempts to achieve self-sufficiency in armaments development, even though the costs of doing so require major and disproportionate investment.
- Taiwan is concerned that global government attempts to strengthen relations with the PRC for commercial reasons will make it difficult for Taiwan to purchase armaments from abroad.
- Taiwan will sell arms abroad when there is political benefit from doing so.

## **VII. Some Observations**

- Strategically, Taiwan is committed to developing self-sufficient aerospace and shipbuilding industries. However Taiwan has placed cost savings and technical performance over indigenous production.
- Internationalization of procurement and lessening traditional reliance on the United States have been specific objectives of Taiwan's modernization program.
- After completion of its massive modernization program, Taiwan will be confronted with the high maintenance costs required to keep the modern systems operational at peak performance levels.
- As the production run for the IDF drew to a close, many large and small Taiwanese companies, facing inadequate revenues, appealed to the government to enforce

increased offset requirements on foreign procurements. This is a different approach than that taken by industries in other countries, which have also appealed to defense diversification and the international arms market.

- The transformations to date in Taiwan's defense industrial base are mild compared with those of other nations. This is perhaps because Taiwan feels the immediate need to spend on external procurements to rapidly obtain advanced systems to counter a proximate and urgent threat. External arms sales, and defense diversification to the commercial sector, while desirable, are not as high a priority as in other countries.

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#### ENDNOTES

<sup>1</sup> Dennis Van Vranken Hickney, "Interview with Sun Chen, Taiwan's Defence Minister," *Asian Defence Journal*, February 1994, p. 32.

<sup>2</sup> Hickney, loc. cit.

<sup>3</sup> Hu Hsun, "Under the Eye of the Dragon," *Jane's Defence Weekly*, January 22, 1994, p. 23.

<sup>4</sup> Anthony Leung, "The Fortress Revisited," *Military Technology*, March 1999, p. 71.

<sup>5</sup> Ling Ching, Director of Taiwan Ministry of Defense Electronic Communications and Information Bureau, quoted in "Taiwan Circles Wagon in Cyber-Warfare," *China News*, August 17, 1999.

<sup>6</sup> David Watts, "Taiwan Calls for a Shield of Missiles," *The Times*, August 19, 1999.

<sup>7</sup> Teng Fei, Taiwan Minister of Defense, cited in Phillip Finnegan, "New Capabilities Heighten Asian Tensions/Missile Defense Needs for Taipei Intensify Quickly," *Defense News*, August 23, 1999.

<sup>8</sup> Tang Fei, Taiwan Minister of Defense, cited in "Missile Defense Research to Focus on Low Altitude," *China News*, August 23, 1999.

<sup>9</sup> *Worldwide Military Expenditures and Arms Transfers 1998*, State Department Bureau of Arms Control, Washington DC, January 2000.

<sup>10</sup> Unattributed, "Defense Implications of East Asia's Crisis," *IISS Strategic Comments*, July 1998.

<sup>11</sup> "Republic of China (Taiwan)," *Asian Defence Journal Yearbook, 1998-1999*, p. 173.

<sup>12</sup> Unattributed, "Worldwide Defense Companies Ranked by Estimated Defense Sales for 1991," *International Defense Review*, Defense '93, pp. 33-55.

<sup>13</sup> Unattributed, "Defense News Top 100," *Defense News*, August 7, 2000, p. 14.

<sup>14</sup> Barbara Amouyal, "U.S. Government Finds Tough Customer in Taiwan," *Defense News*, January 17, 1994.

<sup>15</sup> Hu Hsun, "Building up the Island Bastion," *Jane's Defence Weekly*, 23 January, 1994, p.34.

<sup>16</sup> "Taiwan: A Review of Military Buildup," *Asian Defence Journal*, March 1996, p. 55.

<sup>17</sup> Hu Hsun, January 23, 1994, op. cit., p. 34.

<sup>18</sup> *Ibid.*, p. 35.

<sup>19</sup> "Taiwan: A Review of Military Buildup," op. cit., p. 54.

<sup>20</sup> Anthony Leung, "The Reinforced Fortress," *Military Technology*, March 1996, p. 65.

<sup>21</sup> Phillip Finnegan, "Taipei Companies Seek to Tighten Offset Requirements," *Defense News*, August 23, 1999.

<sup>22</sup> Hu Hsun, January 23, 1994, op. cit., p. 35.

<sup>23</sup> "Army Goes Shopping for a New Tank Fleet," *China News*, August 17, 1999.

<sup>24</sup> Leung, op. cit., pp. 69-74.

<sup>25</sup> "Defense Minister on Weapons Tour," *South China Morning Post*, November 15, 1999.

<sup>26</sup> Hu Hsun, January 23, 1994, op. cit., p. 34.

<sup>27</sup> Barbara Amouyal, "In U.S, Taiwan Supporters Cry Foul, Say China Talks Will Undermine Commitments," *Defense News*, January 31, 1994.

<sup>28</sup> Barbara Opall-Rome, "China Hits Lantirn Sale to Taiwan, US Removes Pod's Laser Designator, Beijing Urges Arms Ban," *Defense News*, June 8, 1998.

<sup>29</sup> Parris Chang, Chairman of the Defense Committee in the Taiwan Legislature, "US Holds Key with Taiwan, Nuclear Motivation Grows if U.S. Support Falter," *Defense News*, July 29, 1998.

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<sup>30</sup> Barbara Opall-Rome, "Taiwan Trims Arms Buys; Seeks Firm Payment Relief, Action Should Not Affect Long-Term Modernization Drive," *Defense News*, November 30, 1998.

<sup>31</sup> Hu Hsun, January 23, 1994, op. cit., p. 35.

<sup>32</sup> "Defense Implications of East Asia's Crisis," *IISS Strategic Comments*, July 1998.

<sup>33</sup> Barbara Opall-Rome, November 30, 1998, op. cit.

<sup>34</sup> *Worldwide Military Expenditures and Arms Transfers 1998*, op. cit.

<sup>35</sup> Hickney, op. cit, p. 36.

<sup>36</sup> Leung, op. cit., p. 68.

<sup>37</sup> *Worldwide Military Expenditures and Arms Transfers 1998*, op. cit.

<sup>38</sup> James Elliott and Ezio Bonzignore, "Asia's 'New' Aerospace Industry: At the Turning Point?," *Military Technology*, February 1998.

<sup>39</sup> Hu Hsun, January 23, 1994, op. cit, p. 34.

<sup>40</sup> " Republic of China (Taiwan)", op. cit., p. 173.