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THESIS

**RUSSIAN CONVENTIONAL ARMS TRANSFERS
SINCE 1991:
IMPLICATIONS FOR U.S. NAVAL FORCES**

by

Neil Andrew Harmon

March 2001

Thesis Co-Advisors:

Mikhail Tsyarkin
Fredrick Rocker

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Navies throughout the world, in particular China's People's Liberation Army Navy (PLAN), are aggressively purchasing Russian advanced naval equipment and related technologies to improve their maritime capabilities. The United States Navy, accordingly, will increasingly encounter and possibly be engaged by advanced Russian conventional arms within the decade. Initiatives which curtail proliferation and minimize the impact of these weapons on regional stability should be implemented, thereby, reducing the potential threat to forward-deployed naval forces. The United States needs to strengthen current policies including the Wassenaar Arrangement arms control agreement, continue U.S.-Russian cooperative efforts in converting Russia's defense industry, and maintain a viable naval presence in the Western Pacific to counter the PLAN's modernization program.

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IMPLICATIONS FOR U.S. NAVAL FORCES**

Neil Andrew Harmon
Lieutenant, United States Navy
B.B.A., University of Massachusetts at Amherst, 1992

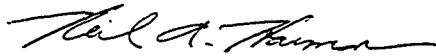
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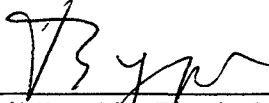
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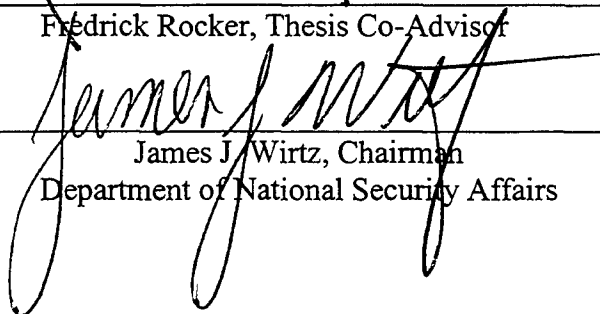
Approved by:



Mikhail Tsypkin, Thesis Co-Advisor



Fredrick Rocker, Thesis Co-Advisor



James J. Wirtz, Chairman
Department of National Security Affairs

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This thesis analyzes the Russian Federation's conventional arms transfers since the collapse of the Soviet Union in 1991. Russia looks to the sale of conventional arms as a promising source of capital income and a viable method to maintain its state defense industry. Due to a substantial decrease in sales volume, the international conventional arms market has become extremely competitive over the last decade. This competitiveness has driven exporters, including Russia, to offer latest technologies employed in such advanced weapons as supersonic anti-ship cruise missiles, acoustically quiet submarines, and fourth generation fighter aircraft. The continued worldwide proliferation of advanced Russian conventional arms will remain a major concern for the United States Navy in the foreseeable future.

Navies throughout the world, in particular China's People's Liberation Army Navy (PLAN), are aggressively purchasing Russian advanced naval equipment and related technologies to improve their maritime capabilities. The United States Navy, accordingly, will increasingly encounter and possibly be engaged by advanced Russian conventional arms within the decade. Initiatives which curtail proliferation and minimize the impact of these weapons on regional stability should be implemented, thereby, reducing the potential threat to forward-deployed naval forces. The United States needs to strengthen current policies including the Wassenaar Arrangement arms control agreement, continue U.S.-Russian cooperative efforts in converting Russia's defense industry, and maintain a viable naval presence in the Western Pacific to counter the PLAN's modernization program.

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I. INTRODUCTION

A. BACKGROUND

This thesis examines the status of the Russian Federation's conventional arms transfers since 1991 and the implications these transfers may have on United States Navy operational forces. Russia looks to the sale of conventional arms as a promising source of capital income and a viable method to maintain its state defense industry. Due to a substantial decrease in sales volume, the international conventional arms market has become extremely competitive over the last decade. This competitiveness has driven exporters, including Russia, to offer latest technologies employed in such advanced weapons as supersonic anti-ship cruise missiles, acoustically quiet submarines, and fourth generation fighter aircraft. The continued worldwide proliferation of advanced Russian conventional arms will remain a major concern for the United States Navy in the foreseeable future.

The thesis begins with a discussion of current worldwide trends in conventional arms transfers and addresses specifically the various military hardware and technologies the Russian Federation is presently exporting. Russia's primary customers are then examined along with an analysis of current Russian conventional sales volumes. An in-depth analysis of the Russian Federation's defense industry since 1991 provides insight to the challenges confronting Russia's defense industry as well as future prospects for the continued proliferation of Russian conventional arms throughout the world.

The thesis then employs a case study involving present-day Russian conventional arms transfers to China which serves as an example of a developing pattern of customer

relationships between Russia and numerous nations throughout the world. Since 1991, China has imported substantial volumes of Russian military equipment and technology, including naval equipment and technology. The case study analyzes the potential threat the export of Russian naval conventional arms imposes upon the worldwide, operational forces of the United States Navy. Specifically, possible threats to the U.S. Navy posed by China's People's Liberation Army Navy (PLAN) are examined.

Although the present volume of Russian conventional arms transfers is a fraction of previous arms levels exported by the Soviet Union, the Russian Federation currently ranks as the second largest supplier of major conventional weapons in the world.¹ Russia amassed nearly \$14.7 billion in sales of conventional weapons between 1995-1999. In comparison, the United States was the only country that outsold the Russian Federation during this timeframe with sales of \$53.4 billion.¹

State defense procurement orders for military equipment collapsed in Russia after the fall of the Soviet Union. The economic crises throughout the 1990's, and specifically the ruble crash in 1998, contributed to a severe lack of funding for the once powerful Russian defense industry. According to Dr. Aleksei Arbatov, Vice Chairman of Russian Defense Committee, there is no solution on the immediate horizon so defense contractors and planners should not expect significant domestic procurement to resume until 2005.²

¹ In discussing the proliferation of conventional weapons, it is necessary at the outset to define what weapons constitute conventional weapons. For the focus of this thesis, the term "conventional weapons" includes warships/submarines, combat aircraft/helicopters, armored combat vehicles, battle tanks, missiles/missile launchers, and related technologies to said equipment.

² Blank, Stephen, "Russia's Clearance Sale," *Jane's Intelligence Review*, November 1, 1997, p. 517.

The domestic economic problems experienced by the Russian Federation during the 1990's forced the Russians to re-examine their conventional arms transfer policies. Unlike the Cold War period, when political and ideological considerations heavily dictated Soviet conventional arms transfers, economic considerations have now become the driving force behind Russian conventional arms transfers. Challenges such as drastic economic reforms, substantial decreases in state defense procurements, the failure of defense conversion, and widespread bankruptcy have routinely confronted the Russian defense industry since 1991. The Russian defense industry, consequently, now views conventional arms exports as a means of survival and a primary source of reliable revenue.

China, meanwhile, has been one of the Russian Federation's largest consumers of conventional arms over the past decade and recently the two countries have entered into a strategic partnership with one another. In particular, China has been purchasing large amounts of advanced naval conventional arms from Russia. Imports of Russian armaments such as Kilo-class submarines, Sovremenny-class destroyers, SS-N-22 Sunburn missiles, and Mig-29, Su-27, Su-30, and Ka-28 aircraft dramatically boosted the maritime capabilities of China's PLAN forces. In the immediate future, China, as well as other nations, will continue to procure large amounts of advanced Russian naval equipment and technology to modernize their naval fleets. Accordingly, as the case study suggests, the United States Navy will increasingly encounter advanced Russian naval equipment throughout the world's oceans.

B. METHODOLOGY

This thesis is based on primary and secondary open sources addressing current worldwide trends in conventional arms transfers, Russia's conventional arms exports since 1991, the primary importers of Russian conventional arms, and the status of the Russian Federation's defense industry. A case study is then provided which exemplifies the pattern of customer relationships Russia employs with its customers. Included in the case study is a discussion of the specific armaments China has imported from Russia to enhance the maritime capabilities of the PLAN and the implications these transfers have on operational forces of the United States Navy.

C. ORGANIZATION

Chapter II discusses trends of present worldwide arms transfers, including the historical context, leading exporting/importing countries and current worldwide volumes of conventional arms transfers. Further, an overview of Russia's conventional arms transfer policies, current customers which actively purchase Russian advanced conventional arms, and projections of Russian conventional arms transfers are addressed.

Chapter III examines the Russian Federation's defense industry since 1991. Decline in state defense procurement orders and failure of defense conversion posed serious challenges to the Russian defense industry over the past decade. As a result, Russian initiatives including consolidation of the defense industry under President Putin and a newfound reliance on the export of Russian conventional arms are presently

underway to meet these challenges and salvage the once preeminent Russian defense industry.

Chapter IV focuses on a case study involving Sino-Russian arms agreements since 1991 and the strategic partnership which has recently emerged between the two countries. Specifically, China has purchased large volumes of Russian naval equipment and technologies and this case study explores the challenges these Russian weapon systems may pose for U.S. Naval forces operating in the Western Pacific.

In summation, Chapter V offers conclusions regarding the status of Russian conventional arms transfers since the collapse of the Soviet Union and the implications associated with such transfers. United States policy recommendations are then offered to effectively address the ever-increasing proliferation of advanced Russian conventional arms throughout the world. In light of the continuing transfers of advanced Russian conventional arms, the United States needs to strengthen current policies including the Wassenaar Arrangement arms control agreement, continue U.S.-Russian cooperative efforts in converting Russia's defense industry, and maintain a viable naval presence in the Western Pacific to counter the PLAN's modernization program.

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II. CONVENTIONAL ARMS TRANSFERS SINCE 1991

It is clear that the worldwide conventional arms market is: first, significantly smaller than before; second, unlikely to regain the high sales volume of the mid-1980's; and third, still large enough to encourage traditional arms producers to emphasize exports.³

The purpose of this chapter is to analyze the present status of worldwide conventional arms sales and, specifically, the present status of the Russian Federation's conventional arms transfers. This analysis highlights the recent decline in worldwide arms transfers and discusses the implications of the ever-increasing competitiveness of today's conventional arms market. Leading importing and exporting countries, including Russia, are examined as well as geographic areas targeted by conventional arms exporting nations. This chapter argues that, despite the overall decline in conventional arms transfers, the current proliferation of Russian conventional weapons continues on a grand scale. The Russian Federation still ranks second to the United States in worldwide conventional weapons sales.⁴ The proliferation of modern and lethal Russian conventional arms will continue in the immediate future and may pose serious threats to operational forces of the United States Navy.

³ Hull, Andrew and Markov, David. "A Changing Market in the Arms Bazaar," *Jane's Intelligence Review*, March 1, 1997, p.143.

⁴ *SIPRI Yearbook 2000*, p. 372.

A. PRESENT TRENDS OF WORLDWIDE ARMS TRANSFERS

The worldwide market for conventional weapons has diminished in terms of volume since the end of the Cold War, resulting in a fiercely competitive arms market as we enter the 21st century. The conventional arms market once dominated and controlled by the United States (U.S.) and the Union of Soviet Socialist Republic (U.S.S.R.) has subsequently been transformed into an arms market with numerous participants who are willing to sell and purchase advanced conventional arms. While few believe the extreme volume of weapon sales reached during the Cold War has any chance of reappearing in the near future, the proliferation of more advanced conventional weapons continues on a routine basis by developed and developing nations.

Overcapacity, intense competition, and a buyer's market are the three primary factors effecting the recent decline in the global arms market.⁵ First, the drastic international defense buildup of the 1980's resulted in the overcapacity of many industrial nations, and, now, "the world is awash in excess weapons and defense production capabilities."⁶ Second, the United States, the Soviet Union, North Atlantic Treaty Organization (NATO) members, China, Israel, and South Korea are no longer the only major participants in global arms sales. Traditional arms exporters have recently been encountering new competition from developing producers such as India, Taiwan,

⁵ O'Prey, Kevin P., *The Arms Export Challenge: Cooperative Approaches to Export Management and Defense Conversion* (Washington, D.C.: The Brookings Institution, 1995), p.8-9.

⁶ *Ibid.*, p.8.

Brazil, and North Korea.⁷ Third, the aforementioned points have contributed to the establishment of a buyer's market within the international arms arena. Importing countries now possess greater freedom and selectivity than in the past and "prospective arms importers have become much more demanding in terms of the top-of-the-line equipment, co-production agreements, countertrade requirements, and after-sales service."⁸

1. The Changing Nature of Conventional Arms Transfers

The nature of international arms sales has dramatically changed since 1991. The past decade has witnessed economic interests superceding political/ideological interests as the driving force behind the continued worldwide proliferation of conventional weapons. Unlike the conventional arms market of the Cold War in which countries often purchased conventional arms on credit due to their political/ideological alignment with the supplier, today's arms purchasers need readily available funds to procure conventional weapons. Presently, if a nation has the financial resources to purchase arms, there are many nations willing to sell to them, regardless of ideological/political persuasion or military implications.

National defense budgets throughout the world have substantially decreased and domestic defense procurements, consequently, have accordingly diminished. As of 1997,

⁷ Ibid.

⁸ Ibid.,p.9.

U.S. defense procurement declined 71 percent from its 1985 Cold War procurement levels, and Russian defense procurement declined by 80 percent since 1990.⁹ To revive Russia's defense industry in this fiscal environment, defense enterprises have aggressively sought both old and new customers in the worldwide arms market (see Chapter III). "Increasingly, governments and defense industries are turning to the international arms market for salvation. Indeed, (conventional arms) exports now equate to survival for many (defense) firms."¹⁰

Soviet decisions regarding conventional arms exports were dictated by whether the importing country maintained a socialist orientation and/or reflected a counterbalance to U.S. influence in the region.¹¹ During the past decade, however, "policy-makers in the leading supplier countries (including Russia) have faced the problem of preserving defense industries in a time of shrinking foreign and domestic demand."¹² The aftermath of the Cold War found the political considerations waning in deference to economic considerations. Russia, in particular, aggressively sought new markets throughout the world for economic gain, including NATO members such as Greece and Turkey.

⁹ Andrew Hull and David Markov, p.140.

¹⁰ Ibid., p.141.

¹¹ Anthony, Ian. *Russia and the Arms Trade*, (Oxford, Oxford University Press, 1998), p. 40.

¹² Mussington, David. "Understanding Contemporary International Arms Transfers," *Adelphi Paper 291*(International Institute for Strategic Studies, 1994), p. 11.

2. Current Volume of Conventional Arms Transfers

The current volume of international conventional arms sales is a fraction of what it was during the Cold War. At the height of the Cold War, the overall volume for international conventional arms sales reached an estimated \$71 billion in 1985.¹³ In contrast, the volume of 1999 worldwide conventional sales amounted to less than half this amount with international conventional arms sales to both developed and developing nations peaking at just over \$30 billion.¹⁴ As presented in Figure 2.1, the dollar amount of conventional arms transfers during the first half of the 1990's gradually decreased in the aftermath of both the fall of the Soviet Union and the Persian Gulf War. This universal decrease continued primarily through the mid-1990's, but rebounded slightly since 1997 due to improving worldwide economic conditions.

3. Leading Importing/Exporting Countries

Due to a substantial decrease in sales volume, the international conventional arms market has become extremely competitive over the last decade. This competitiveness has driven exporters to offer latest technologies employed in such advanced weapons as supersonic anti-ship cruise missiles, acoustically quiet submarines, and fourth generation

¹³ Andrew Hull and David Markov, p. 142.

¹⁴ "Conventional Arms Transfers to Developing Nations, 1992-1999," *CRS Report RL 30640* (Congressional Research Service, August 18, 2000), p. 2. Developing nations include all countries except the United States, Russia, European nations, Canada, Japan, Australia, and New Zealand.

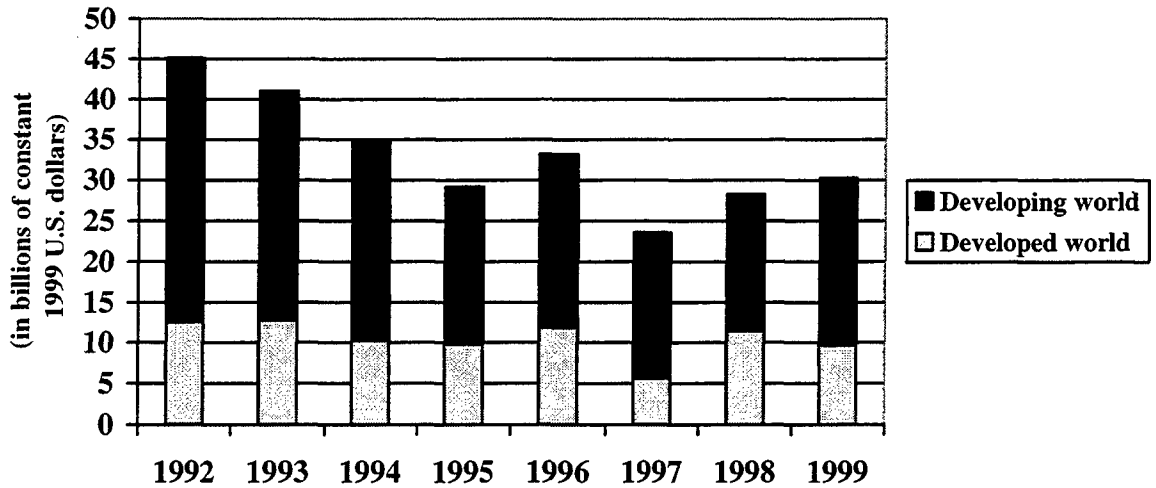


Figure 2.1: Worldwide Arms Transfer Agreements

From: *CRS Report RL 30640*

fighter aircraft. As the 21st century begins, five countries dominate the international arms export market. The United States, Russia, France, the United Kingdom, and Germany have been the top five worldwide suppliers of major conventional weapons to both developed and developing countries from 1995-1999.¹⁵ The United States has amassed \$53.4 billion, Russia \$14.6 billion, France \$11.7 billion, the United Kingdom \$7.3 billion, and Germany has earned \$6.1 billion in conventional weapon sales over the past five years (see Table 2.2).¹⁶ In terms of actual arms transfer agreements, the United States currently accounts for over 39 percent of worldwide arms transfers followed by the

¹⁵ *SIPRI Yearbook 2000*, p. 372.

¹⁶ *Ibid.*, p. 372.

Russian Federation at nearly 20 percent.¹⁷ Conventional weapons such as the F-16 C/D fighter aircraft, M1A1 Abrams tank, Su-27 and Su-30 fighter aircraft, and Kilo-class and Type 209 submarines represent more sought after conventional weapons the last several years.¹⁸

Rank	Supplier	Value of Deliveries, 1995-1999
1	USA	\$53.4 billion
2	Russia	\$14.6 billion
3	France	\$11.7 billion
4	UK	\$7.3 billion
5	Germany	\$6.1 billion
6	Netherlands	\$2.24 billion
7	China	\$2.21 billion
8	Ukraine	\$2.1 billion
9	Italy	\$2 billion
10	Canada	\$1.1 billion

Table 2.2: The Leading Suppliers of Major Conventional Weapons, 1995-1999:
(Expressed in constant 1990 U.S. dollars)

From: *SIPRI Yearbook 2000, Appendix 7A.2.*

Developing nations have been the principal importers of conventional weapons since 1991 (see Figure 2.1). Conventional arms exporters have placed emphasis on Asia, Europe, and the Middle East and these three regions currently constitute the majority of the world's conventional weapons recipients. Specifically, as depicted in Table 2.3,

¹⁷ *CRS Report RL 30640*, p. 6.

¹⁸ *Ibid.*, pp. 6-9.

Taiwan, Saudi Arabia, and Turkey were the top three conventional arms importers from 1995-1999.¹⁹

A contributing factor in the sale of conventional arms within these regions has been the domino effect. The domino effect occurs when “the sale of several dozen weapon systems creates a new market in a neighboring country in response.”²⁰ Over the past decade, consequently, the domino effect increased the number of countries seeking advanced conventional arms from conventional weapons exporters.

Asia has become the number one conventional arms market recipient in the world due primarily to the domino effect. “Several East Asian nations, for example, have responded to growing Chinese military strength (modernization) by buying advanced Western and Russian military equipment.”²¹ Taiwan, South Korea, and Japan are just a sampling of East Asian countries which have increased conventional arms imports due to China’s People’s Liberation Army (PLA) modernization program. From 1995-1999, in fact, China, Taiwan, South Korea, and Japan have accounted for approximately 26 percent of worldwide major conventional weapons deliveries with a total value over \$28 billion.²²

Additionally, the European market has been a major recipient of conventional arms over the past decade. Although many European countries have sizeable defense

¹⁹ *SIPRI Yearbook 2000*, p. 368.

²⁰ Andrew Hull and David Markov, p. 142.

²¹ *Ibid.*

²² *SIPRI Yearbook 2000*, pp.368-371.

industries, many have not been able to effectively meet production requirements for specific types of advanced defense equipment such as cruise missiles and attack helicopters.²³ France and the United Kingdom, for instance, “have turned to the United States for off-the-shelf purchases as solutions to some of their military requirements.”²⁴

The Middle East has always been an important geographic area for conventional arms transfers. Continuous tensions in the region over the past few decades, i.e. the Arab-Israeli Wars and the Iran-Iraq War, have consistently provided a prime market for conventional arms sellers. The coalition force’s powerful weapons display during Desert Storm also contributed to the recent high demand for more advanced conventional arms in many Middle Eastern countries. As Table 2.3 depicts, Saudi Arabia, Egypt, the United Arab Emirates (U.A.E.), and Israel have been the primary recipients of conventional arms in the Mid-East region over the past five years.²⁵

²³ Anthony, Ian, p.23. As examples, the UK bought the US BGM-109 Tomahawk cruise missile, the UK and the Netherlands purchased the US AH-64 Apache attack helicopter, and the UK and France bought US E-3 AWACS systems.

²⁴ Ibid.

²⁵ *SIPRI Yearbook 2000*, p.368.

Rank	Recipient	Value of Deliveries, 1995-1999
1	Taiwan	\$13.9 billion
2	Saudi Arabia	\$9.2 billion
3	Turkey	\$6.5 billion
4	South Korea	\$6 billion
5	Egypt	\$4.7 billion
6	India	\$4.6 billion
7	Japan	\$4.3 billion
8	Greece	\$4.1 billion
9	China	\$4 billion
10	U.A.E.	\$3.3 billion

**Table 2.3: The Leading Recipients of Major Conventional Weapons, 1995-1999:
(Expressed in constant 1990 U.S. dollars)**

From: *SIPRI Yearbook 2000, Appendix 7A.1.*

B. CURRENT RUSSIAN CONVENTIONAL ARMS TRANSFERS

Because Russia has a wide variety of weaponry to sell, from the most basic to the highly sophisticated, and despite the internal problems in the Russian defense industrial sector, various developing countries still view Russia as a potential source of their military equipment.²⁶

In December 1991, the dissolution of the Soviet Union precipitated an end to the extraordinary levels of conventional weapon sales attained by the U.S.S.R. during the 1980's. The Russian Federation inherited the largest part of the Soviet Union's defense industrial base at this time, and, due to decreasing world demand, had to reduce expectations regarding the profitability of conventional arms transfers.²⁷ It is crucial to

²⁶ *CRS Report RL30640*, p.7.

²⁷ Ian Anthony, p. 28.

remember that Russia is currently the second most profitable arms exporter behind the United States, and thus, Russian advanced conventional arms based on modern 1980's and 90's technologies remain widely available for purchase in 2001.

1. Current Volume and Types of Russian Conventional Arms Transfers

During the mid to late 1980's, the Soviet Union's defense industry experienced its most profitable years through large scale exports of conventional arms. On a yearly basis the Soviet Union exported between \$15 and \$20 billion of conventional weapons primarily through the granting of credit and/or barter arrangements with many of its customers.²⁸ Once the Soviet Union collapsed in 1991, however, exports of conventional weapons by the Russian Federation likewise collapsed. With the Russian defense industry in a rapid state of decline, the Russians could no longer afford to export conventional arms without receiving compensation.

While conventional arms exports dropped significantly to an average of approximately \$3 billion per year over the past decade, Russia continued to aggressively market advanced conventional arms throughout the world (see Figure 2.4).²⁹ In 1999, for example, Russian exports of conventional arms amounted to \$3.125 billion. In some years during the 1990's, Russian conventional exports did not reach the \$3 billion level. Domestic economic problems in 1998, including the ruble crash, devastated the Russian

²⁸ Ibid., p.75.

²⁹ SIPRI Yearbook 2000, p. 372.

economy and as a result, conventional weapons exports only amounted to \$1.752 billion in profits.³⁰

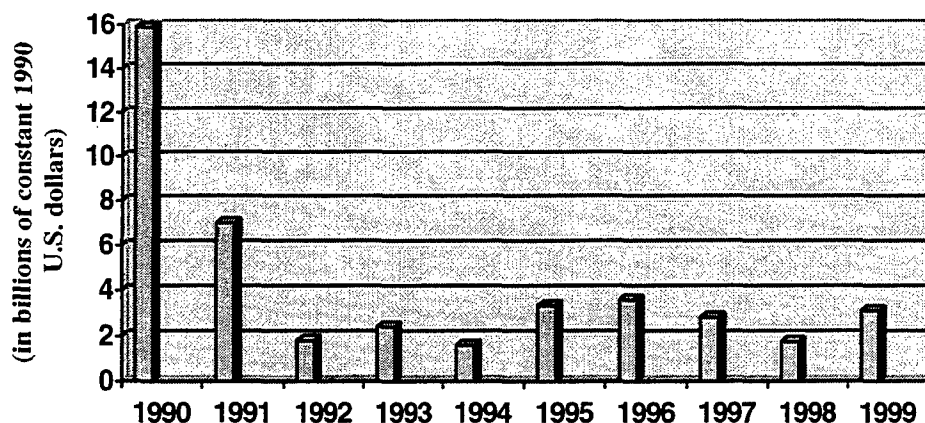


Figure 2.4: Soviet/Russian Arms Exports Since 1990

From: *SIPRI Yearbooks 1995-2000*.

Even to maintain the multi-billion dollar sales volumes described above, the Russian Federation must export vast quantities and varieties of advanced conventional arms. The majority of Soviet arms for sale during the Cold War were not leading edge weapons and were designed and produced during the 1950's, 60's, and 70's. The conventional arms currently sold by the Russian Federation, however, are highly advanced, much more sophisticated weapons based on newer 1980's and 90's technologies. Soviet/Russian weaponry has been sought for many years by importing countries searching for advanced air force, air defense, and naval equipment at reasonable

³⁰ Ibid.

prices. Today's Russian product line seeks to accommodate these importing countries with equipment such as Su-27, Su-30, Mig-29, Mig-31, Mi-17, and Ka-27 aircraft, S-300 (SA-10) air defense regiments, Kilo-class submarines, Krivak-class frigates, Sovremenny-class destroyers, SS-N-22 'Sunburn' and Kh-35 'Uran' missiles, and T-90 battle tanks.³¹ In 1999, air force weapons and equipment accounted for over 50 percent of Russian arms exports, air defense weapons accounted for 14 percent, and naval equipment accounted for 13 percent.³² The implications of such weapons proliferation cannot be ignored as we enter the 21st century.

Three state-run organizations consistently led the Russian Federation in total conventional arms sales during the latter half of the 1990's. Rosvooruzheniye sold new Russian conventional weapons, Promexport sold spare Russian parts and used equipment, and Rossiyskiye Tekhnologii was responsible for selling production licenses and technology transfers.³³ Rosvooruzheniye was, and continues to be, the leader of the three companies in terms of profitability. Rosvooruzheniye was responsible for 80 percent of Russian conventional arms sales in 1999.³⁴ Due to the continued success of

³¹ "Russia's Road to Corruption," *Speaker's Advisory Group on Russia*, United States House of Representatives, 106th Congress, September 2000. Available online: <<http://policy.house.gov/russia>>, November 17, 2000.

³² Aleksin, Valeriy, "Changes in Arms Trade Must Parallel Military Reform," *Moscow Nezavisimoye Voennoye Obozreniye No 47*, (December 3, 1999). Translated by FBIS. Document ID: CEP19991215000006. Note: The naval portion of exports has continued to increase in recent years, which should be a cause of concern for the U.S. Navy.

³³ Ibid.

³⁴ Ibid.

Rosvooruzheniye, many defense analysts suggest total volume of Russian arms exports could increase to \$4.5 billion in 2000.³⁵

2. Importers of Russian Conventional Arms

Russian advanced conventional arms continue to be aggressively marketed to nations throughout the world. The Russian Federation's current conventional weapons client base involves a mixture of both former and post-Soviet Union customers such as India and Turkey, respectively. As was true during the Soviet era, countries continue to be drawn towards the "reliability, operating simplicity, and low-price" of Russian conventional arms.³⁶

China and India have been the two prominent purchasers of Russian conventional arms since the fall of the Soviet Union. A detailed case study involving Chinese imports of Russian weaponry is offered in Chapter IV, but, in general, China has aggressively bought Russian advanced conventional weapons over the past several years to include Su-27 and Su-30 fighter aircraft, S-300 (SA-10) air defense missiles, Kilo-class submarines, Sovremenny-class destroyers, SS-N-22 'Sunburn' anti-ship missiles, and KA-27 anti-submarine helicopters.³⁷ The potential threat these purchases pose towards U.S. Naval forces will continue to increase over the next several years (see Chapter IV).

³⁵ "Fourth Quarter Crucial for Russian Arms Exports Figures," *Moscow ITAR-TASS*, (October 16, 2000). Translated by FBIS. Document ID: CEP20001016000232. Note: As of February 2001, export sales figures for 2000 have not been released so confirmation of such estimates cannot be made at this time.

³⁶ Bulavinov, Ilya, "Where Haven't We Made Sales," *Moscow Kommersant-Vlast*, (February 1, 2000). Translated by FBIS. Document ID: CEP20000208000244.

³⁷ Blank, Stephen, p. 521-523.

India, similarly, continues as one of Russia's most dependable conventional weapons customers. "Over the past four decades, Russia has supplied about \$30 billion worth of weapons to India, much of which is still in use and needs a steady supply of spares to run."³⁸ Approximately "60 percent of India's weapon systems are supplied by the Russian Federation, so Russian product support plays a crucial role in maintaining India's defense hardware."³⁹ Recent arms purchases by India include Kilo-class submarines, Krivak III frigates, T-90 tanks, Su-30 fighter aircraft, and the Admiral Gorshkov aircraft carrier.⁴⁰ Because India is satisfied with both the quality of arms and support infrastructure they receive from the Russian Federation, India will continue to be a prominent Russian arms customer in the foreseeable future.

In addition to large volume importers such as China and India, the Russian Federation also has numerous customers who purchase less significant quantities of conventional arms. Iran, Syria, Algeria, Libya, Serbia, Greece, Turkey, Vietnam, Malaysia, Singapore, North Korea, South Korea, and Colombia are a few of the countries who currently purchase Russian advanced conventional arms.⁴¹ The Russians consider the world their marketplace, and, most recently, they have been aggressively pursuing non-traditional markets such as the NATO countries of Greece and Turkey. Analysts,

³⁸ Radyuhin, Vladimir, "Defense Purchases: Russian Exporter Ready to Meet Demand," *The Hindu*, July 24, 2000.

³⁹ Ibid. Note: In some countries, up to 80-90 percent of army and navy equipment are of Soviet and Russian make.

⁴⁰ "Russia Set to Supply India with T-90S Tanks, Aircraft Carrier," *Moscow Interfax*, (June 27, 2000). Translated by FBIS. Document ID: CEP20000627000078.

⁴¹ Novichkov, Nikolai, "Interview with Alexey Ogarev, Director General of Rosvooruzheniye," *Jane's Defence Weekly*, December 1, 1999.

however, correctly argue that many of Russia's current arms sales are destabilizing and escalate ongoing regional arms races such as the Sino-Indian, North/South Korean, and Greek/Turkish rivalries.⁴² In the words of one Russian government official though, "Russia is willing to sell anything that our customers want, except nuclear weapons."⁴³ Such statements exemplify why the United States remains concerned with the continued Russian proliferation of advanced conventional arms.

C. CONCLUSION

Chapter II has provided an overview of present day international and Russian conventional arms sales. Although the conventional weapons market has decreased overall since the 1980's, billions of dollars continue to change hands in the worldwide arms market on a yearly basis. The Russian Federation still ranks as the number two exporter of conventional arms in the world and, unlike during the Cold War period, many of these weapons are highly advanced, lethal weapons incorporating modern technologies. The United States, therefore, must continue to closely monitor Russian conventional arms exports in the future to reduce the possible threat these weapons may pose towards U.S. Naval forces.

⁴² "Russia's Road to Corruption."

⁴³ Andrew Hull and David Markov, p. 141.

III. THE RUSSIAN DEFENSE INDUSTRY SINCE 1991

Arms sales are now critical to the Russian defense industry because the state cannot afford to procure weapons for its own forces. Exports remain essentially this industry's sole source of income. Although many defense firms have received subsidies of one sort or another, only if they export can they be sure of surviving.⁴⁴

This chapter examines the Russian Federation's defense industry over the past decade and the challenges currently facing Russian defense enterprises. Contributing factors including the lack of government defense procurement orders and major problems inherent in defense conversion are addressed in detail. The chapter also addresses possible solutions being examined by Russian political and business leaders to restore the once powerful defense sector. These solutions include major restructuring of the defense industry under newly elected President Vladimir Putin as well as the Russian Federation's newfound reliance on the international conventional arms market for survival. Specifically, Military-Technical Cooperation (MTC) has become a key focus for Russian defense enterprises over the past decade, and MTC may represent a solution to the overall defense industry's current challenges.

A. PRESENT STATUS OF RUSSIAN DEFENSE INDUSTRY

Ten years have passed since the fall of the Soviet Union and the defense industry of the Russian Federation in 2001 bears little resemblance to the former preeminent

⁴⁴ Blank, Stephen J., *The Dynamics of Russian Weapon Sales to China*, (Carlisle Barracks, Pennsylvania: Strategic Studies Institute, 1997), p. v.

Soviet defense sector. During the Cold War, large state defense procurement orders for Soviet military equipment were consistently received by Soviet defense enterprises. The Soviet defense industry was the most privileged sector of the Soviet economy with the best Soviet resources and personnel routinely directed towards defense enterprises.

Within a few months after the fall of the Soviet Union, however, the once flourishing Soviet defense industry collapsed into disarray. State defense procurement orders ceased virtually overnight. This trend continued throughout the 1990's and to this day hinders the success of the Russian Federation's defense industry. The Russian Federation rapidly discovered it could not economically support the enormous defense industry and looked towards defense conversion as a possible solution. The primary challenges currently facing defense conversion in Russia include the technical difficulty associated with the conversion process, a misguided governmental strategy, and the staunch opposition defense enterprise managers have towards conversion.

1. Background of the Soviet Defense Industry

Since the beginning of the Cold War, the Soviet Union's massive defense industry remained the unrivaled leader in the Soviet economy. The Soviet defense sector was responsible for 60 percent of machine production and more than 80 percent of electronics manufacturing in the Soviet economy.⁴⁵ Success within the Soviet defense industry equated to success for the overall economy of the U.S.S.R. The Soviet defense industry "determined the level of scientific and technological advancement and the pace of

⁴⁵ O'Prey, Kevin, *The Arms Export Challenge*, p. 25.

research and development for other sectors of the economy.”⁴⁶ Within the defense industry defense enterprises “were provided with prime access to the finest material and human resources in the Soviet Union.”⁴⁷

The Soviet defense sector clearly received more funding and preferential treatment in comparison to other non-defense industries within the Soviet Union. According to some estimates, the U.S.S.R. spent nearly 20 percent of its gross national product (GNP) within the defense sector.⁴⁸ To maintain the immense infrastructure of the Soviet defense industry demanded such levels of funding. “The nine branches of the Soviet defense industries, or *devyatka*, comprised between 2,000 and 4,000 production enterprises, research and development (R&D) facilities, and research institutes.”⁴⁹

Equally astonishing was the number of Soviet citizens employed within the defense industry during the Cold War. During the late 1980’s, between 9 million and 14 million Soviet citizens worked within the defense establishment.⁵⁰ The Russian Federation alone “inherited a defense sector consisting of 1,200 purely military-oriented factories with a workforce of some 4 million.”⁵¹ Out of all the former-Soviet states, the

⁴⁶ Pierre, A.J., and Trenin, D.V., *Russia in the World Arms Trade*, (Washington, D.C.: Carnegie Endowment for International Peace, 1997), p. 10.

⁴⁷ O’Prey, Kevin P., *A Farewell to Arms?: Russia’s Struggles with Defense Conversion*, (New York: Twentieth Century Fund Press, 1995), p. 15.

⁴⁸ *Ibid.*, p. 14. In contrast, the United States spent approximately 6 percent of its GNP on defense during the 1980’s.

⁴⁹ *Ibid.*, p.15.

⁵⁰ *Ibid.* In contrast, the United States employed 1.5 to 1.9 million people within its defense industry in 1990.

⁵¹ Andrew Pierre and Dmitri Trenin, p. 12.

Russian Federation clearly became responsible for the majority of defense enterprises comprising the former Soviet defense industry.

Numerous Russian cities were almost entirely developed around defense enterprises and their workforce. In approximately 74 Russian cities 80 percent of the work force within these communities were dependent on the defense industry.⁵² The ten leading region/cities involved in the defense industry are depicted in Table 3.1. Clearly, the importance of Soviet defense enterprises to the overall success of the Soviet economy could not be overstated.

President Boris Yeltsin, upon taking office, immediately instituted broad political reform within the Russian Federation. President Yeltsin's chief economic reform strategist, Yegor Gaydar, attempted to transform the Russian economy from a Soviet-style command economy into a capitalist, market economy.⁵³ Gaydar's "shock therapy" strategy never quite succeeded, however, and the Russian economy quickly collapsed in the early 1990's.⁵⁴ Instead of fueling the Russian economy, the "shock therapy" approach led to widespread corruption within government and business circles resulting in the creation of a privileged Russian oligarchy.⁵⁵

⁵² Hull, Andrew, and Markov, David, "A Changing Market in the Arms Bazaar," *Jane's Intelligence Review*, March 1, 1997.

⁵³ O'Prey, *A Farewell to Arms?*, p.33.

⁵⁴ Goldman, Marshall, "The Pitfalls of Russian Privatization," *Challenge*, May/June 1997, p. 35. The primary components of "shock therapy" are elimination of most of the command economy's planning organs, liberalization of prices, privatization of state enterprises, and pursuit of macroeconomic stability through restrictive budgetary and monetary policy.

⁵⁵ *Ibid.*

Region/City	Defense Workforce (in thousands)
Sverdlovsk	350
St. Petersburg (city)	318
Moscow (city)	300
Nizhniy Novgorod	257
Moscow Oblast (region)	225
Perm'	213
Samara	212
Novosibirsk	172
Tatarstan	172
Udmurtiya	168

Table 3.1: Number of Soviet Defense Industry Workers by Region/City

From: O'Prey, *A Farewell to Arms?*, p.22. Based on Julian Cooper's *The Soviet Defence Industry: Conversion and Economic Reform* (New York: Council on Foreign Relations Press, 1991).

2. Decrease in State Defense Procurement

The Russian defense sector, arguably, was the hardest hit by Yegor Gaydar's sweeping economic reforms. "The government slashed state orders for arms procurement by 68 percent with the aim of forcing most defense enterprises to find new work in the civil sector or liquidate."⁵⁶ As a consequence, civilian production decreased, which also led to reduced Russian federal budget revenues and increased Russia's national deficit.⁵⁷

⁵⁶O'Prey, *A Farewell to Arms?*, p. 34.

⁵⁷ Andrew Pierre and Dmitri Trenin, p. 16.

As depicted in Table 3.2, state defense orders dramatically fell over the course of one year from 1991 to 1992. ⁵⁸ “The rapid and deep cuts in military expenditure that followed the end of the cold war—in which spending on equipment was often reduced to a greater extent than other forms of military expenditure— created new pressures on (defense) industry to find new markets for its products.”⁵⁹

Weapons Systems	% Decrease
Intercontinental ballistic missiles (ICBMs)	55
Submarine-launched ballistic missiles (SLBMs)	39
Tactical missiles	81
Surface-to-air missiles	80
Air-to-air missiles	80
Aircraft	80
Tanks	97
Field artillery	97
Satellites and missile-delivery vehicles	34

Table 3.2: Percentage Decreases in Russian Arms and Military Equipment (AME) State Procurement, 1991 to 1992

From: Andrew Pierre and Dmitri Trenin, p. 14.

The lack of government procurement orders was not strictly confined to the early 1990's. This trend continued throughout the 1990's and still hinders the success of the Russian Federation's defense industry today. In fact, according to Dr. Alexei Arbatov,

⁵⁸ Ibid., p.13. Additionally, between 1992-1996, munitions production dropped by 93 percent, radio engineering products by 93 percent, and electronic products by 95 percent.

⁵⁹ Anthony, Ian, *Russia and the Arms Trade*, p. 3.

Vice Chairman of Russian Defence Committee, defense contractors should not expect significant domestic procurement to resume until 2005.⁶⁰

3. Challenges Facing Defense Conversion

Faced with such downturns in state defense procurement orders, major reforms within the Russian defense industry were needed if the industry was to remain a viable sector of the Russian economy. Business and political leaders of the Russian Federation, therefore, attempted defense conversion to resurrect the defense industry. The conversion plan in its narrowest definition directed military equipment producing enterprises to convert to civilian goods. A more comprehensive definition was “any transfer of assets—people, technologies, capital, etc.—from the defense sector to new uses in the civil economy.”⁶¹

Defense conversion within Russia, unfortunately, worked much better on paper than in reality and resulted in utter failure. Inherent difficulties present in the conversion of defense enterprises, misguided governmental strategy, and the staunch opposition of defense enterprise managers towards conversion were the primary challenges facing defense conversion in the Russian Federation.⁶²

Converting defense enterprises into consumer oriented enterprises has been an immense challenge to leaders within the Russian defense sector. After decades of

⁶⁰ Stephen Blank, “Russia’s Clearance Sale,” *Jane’s Intelligence Review*, November 1, 1997, p. 517.

⁶¹ O’Prey, Kevin, *A Farewell to Arms?*, p.5.

⁶² *Ibid.*

Converting defense enterprises into consumer oriented enterprises has been an immense challenge to leaders within the Russian defense sector. After decades of answering to a single customer, i.e., the government, Russian defense enterprises were faced with the daunting challenge of answering numerous customers' demands. Beginning in the early 1990's, the enterprises quickly understood they needed to efficiently convert their military-oriented production lines into civilian-oriented production lines if they were to remain in business. Few, however, actually achieved success with defense conversion. "Attempts by defense plants to initiate production of new products for civilian consumption experienced a meager 20 percent success rate" during the 1990's.⁶³

The largest contributing factor to unsuccessful conversion is the Russian defense enterprises' failure to adapt to the demands of the new consumer market. "Russian defense enterprises traditionally orient themselves towards a 'supply-push' approach to developing and manufacturing new products. However, most Russian firms must completely reorient themselves toward a demand-pull approach, in which product costs, specifications, and designs are determined by market demand."⁶⁴ Additionally, when choosing a civilian product to manufacture, most defense enterprises place higher importance on what equipment and experience they have on hand instead of researching the consumer market to ascertain what type of consumer product is in demand.⁶⁵

⁶³ O'Prey, Kevin, *The Arms Export Challenge*, p. 19.

⁶⁴ *Ibid.*, p.26.

⁶⁵ O'Prey, Kevin, *A Farewell to Arms?*, p.46.

Misguided government strategy is another major obstacle facing defense conversion in the Russian Federation. Many analysts believe the Russian government's defense conversion strategy during the 1990's could have gone further than it did to salvage the once flourishing defense industry. After the failure of Gaydar's "shock therapy" approach, the Russian government foolishly offered assistance in the form of subsidies to struggling enterprises within the defense sector. In effect, the government "was rewarding those (defense enterprises) that had not taken any entrepreneurial risks."⁶⁶

The government's indecision regarding widespread unemployment in the defense sector was another blunder in strategy. The government wanted drastically to convert the defense industry, yet they did not want to cause widespread unemployment. "Although (Viktor) Chernomyrdin has stressed the need for radical revamping of defense industries, customarily he quickly adds the caveat that workers should not lose their jobs as a result."⁶⁷ Government leaders need to make the tough decision as to which of these two issues, conversion or unemployment, is more important because the future of the Russian defense industry remains in jeopardy.

The staunch opposition of defense enterprise managers to convert their factories is another major challenge confronting the conversion of Russia's defense industry. It is important to remember the majority of Russian defense enterprise managers were raised under the Soviet command-style economy, and, thus, are not readily adaptable to the

⁶⁶ Ibid., p.55.

⁶⁷ Ibid., p.56.

conversion process. In the Soviet Union, defense managers “tended to emphasize product performance and high technology at the expense of affordability and customer satisfaction.”⁶⁸ They had one customer to satisfy, and if production problems did arise, the defense managers “had the implicit knowledge that the government would never permit the enterprise to go bankrupt.”⁶⁹

The Russian defense managers received a rude awakening when the Soviet Union collapsed in 1991. Defense conversion began and the Russian managers were suddenly thrust into a new economy with little preparation. The managers had “virtually no experience operating in market economies and they proved unable to competently assess market trends.”⁷⁰ “The majority (of defense managers) continued to demonstrate a profound lack of faith in, and a serious misunderstanding of, the workings of a market economy.”⁷¹ Instead of attempting to efficiently convert their enterprises, many Russian defense managers staunchly opposed defense conversion. The Russian managers continued to look towards the state for assistance just as their Soviet counterparts had done. This lack of entrepreneurial spirit certainly does not bode well for the future of Russia’s defense industry.

⁶⁸ Ibid., p.63.

⁶⁹ Ibid., p.62.

⁷⁰ Andrew Pierre and Dmitri Trenin, p.18. Product duplication amongst enterprises became quite common as a result of mismanagement. For example, in the early 1990’s, almost every major defense enterprise produced similar household washing machines.

⁷¹ O’Prey, Kevin, *A Farewell to Arms?*, p.64.

B. POSSIBLE SOLUTIONS FOR RUSSIAN DEFENSE INDUSTRY

As a result of the disastrous conversion process and economic reforms throughout the 1990's, political and business leaders within the Russian Federation have begun to examine numerous initiatives which may alleviate some of the current problems confronting the defense sector. Newly elected President Vladimir Putin is actively pursuing a restructuring of the defense sector. Russian leaders, likewise, continue to view the export of conventional weapons, and in particular, Military-Technical Cooperation (MTC) as a possible savior for its troubled defense industry.

Russian military exports since 1991, as described in Chapter II, "have become a key prerequisite for lessening the economic burden of military spending and ensuring the efficiency of defense industries as the core of Russia's defense potential."⁷² The Russian defense sector, in other words, must attempt to continue attracting advanced conventional arms customers throughout the world in order to survive.

1. Restructuring Under President Vladimir Putin

Upon assuming office in 2000 President Vladimir Putin inherited numerous challenges within the Russian defense sector. In addition to declining defense procurement orders and difficulties with defense conversion, bankruptcy and debt issues plagued the success of the Russian defense sector. President Putin aggressively enacted

⁷² Andrew Pierre and Dmitri Trenin, p.22.

restructuring measures within the defense sector to confront these challenges and resurrect the once thriving Russian defense industry, clearly understanding the defense sector's vital role to the success of the Russian economy. President Putin states, "It is the military industrial complex that can help Russia out of all the problems the country is facing. The government considers it (the defense industry) a priority sector of the Russian economy, and the sphere accumulating the most advanced technologies and highly skilled personnel."⁷³

Shortly after Vladimir Putin assumed office, grave reports surfaced regarding the state of the Russian defense industry. At the end of April 2000, Alexei Shulunov, First Vice President of the League for Assistance to Defense Sector Enterprises, announced more than 40 percent of Russian defense and industrial complex enterprises were on the verge of bankruptcy.⁷⁴ A primary determinant behind such a substantial figure was the ever-increasing debt generated by state defense procurement orders. As of January 2000 the total debt owed to Russian defense and industrial enterprises exceeded 33 billion rubles.⁷⁵ As Alexei Shulunov points out, there was and continues to be "a paradoxical situation currently enforced in Russia's defense enterprises: the more state orders an enterprise gets, the worse off that enterprise is."⁷⁶ Since the Russian Defense Ministry

⁷³ "Putin: Defense Industry Will Help Russia Out of Trouble," *Moscow ITAR-TASS*, FBIS Document ID: CEP20000321000180, March 21, 2000.

⁷⁴ "Many Russian Defense Industry Plants Facing Bankruptcy," *Moscow ITAR-TASS*, FBIS Document ID: CEP20000427000301, April 27, 2000.

⁷⁵ *Ibid.* The debt problem is only magnified when one learns many state procurement orders account for up to ninety percent of production at numerous defense industrial enterprises.

⁷⁶ *Ibid.*

cannot afford to pay defense enterprises for its conventional arms orders, the more orders a Russian defense enterprise receives from the Ministry, the larger that enterprise's debt becomes.

Vladimir Putin views restructuring as a necessary means to correct these problems and resurrect the Russian defense sector in the immediate future. President Putin has begun his restructuring plan by creating the newly established Russian Conventional Weapons Agency, consolidating centers of conventional arms production, and merging conventional arms export enterprises. One of the first steps Vladimir Putin took towards restructuring the defense industry took place in February 2000 when he approved a statute creating the Russian Conventional Weapons Agency.⁷⁷ The statute declared:

The Russian Conventional Weapons Agency is a federal executive body which effects executive, control, licensing, regulatory and other functions. The Agency will operate in the sphere of the conventional arms industry, including research, development, production, modernization and utilization of armored vehicles, firearms and artillery systems, missile systems, high-precision weapons, cartridges for firearms, optic and electronic devices and systems for weapons and civil equipment.⁷⁸

The agency is envisioned as the sole governmental body responsible for supervising all state-owned enterprises of the conventional arms industry. President Putin projects that the creation of a central authority will facilitate the consolidation process and, thereby,

⁷⁷ "Putin Approves Statute of Conventional Weapons Agency," *Moscow ITAR-TASS*, FBIS Document ID: FTS20000202001255, February 2, 2000.

⁷⁸ *Ibid.*

enable profits from Russian conventional arms exports to increase over the next several years.

After creating the Russian Conventional Weapons Agency, Vladimir Putin's next step in the restructuring process was the consolidation of Russian conventional arms producing regions. Numerous Soviet/Russian cities and regions were created for the sole purpose of the defense industry. President Putin has sought to reduce the number of concentrated defense regions to four: St. Petersburg city; Moscow city; Moscow Oblast'; and Chelyabinsk Oblast'.⁷⁹ By consolidating defense production centers, according to Vladimir Putin, "it will now be possible to optimize budgeted means allocated for state defense orders, rule out duplication of production at different enterprises, and improve settlements within the defense-industrial complex."⁸⁰

The regional consolidation plan foresees cutting approximately two-thirds the number of current defense enterprises by 2005. Of the current 1,700 Russian defense enterprises, the plan calls for an estimated 400–500 to remain.⁸¹ As Vice-Prime Minister Ilya Klebanov succinctly stated, "the consolidation of defense enterprises will allow the enterprises to be more competitive in the world (conventional) arms market."⁸²

⁷⁹ "Russia: Four Regions To Produce Conventional Weapons," *Moscow ITAR-TASS*, FBIS Document ID: CEP20000403000284, April 3, 2000.

⁸⁰ *Ibid.*

⁸¹ "Russian Defense Industry News Briefs," *Moscow Nezavisimoye Voyennoye Obozreniye*, FBIS Document ID: CEP20000721000362, July 14, 2000.

⁸² "Klebanov Confirms Government Plans Cuts In Defense Industry," *Moscow ITAR-TASS*, FBIS Document ID: CEP20000802000277, August 2, 2000.

Another option Vladimir Putin has considered since assuming office is the possible merger of the two leading Russian conventional arms exporters. Rosvooruzheniye and Promeksport defense enterprises, as discussed in Chapter II, are currently the top exporters of Russian conventional weapons. Vladimir Artyakov, Deputy General Director of Promeksport, stated the fierce competition between Rosvooruzheniye and Promeksport has "made it difficult for progress to be made with Russian arms on the world market."⁸³ Vladimir Putin concurs with such sentiments, and as of September 2000 there was a presidential decree being prepared calling for Rosvooruzheniye to become the only Russian state mediator for the export of conventional weapons.⁸⁴ In issuing such a decree, Vladimir Putin hopes the competitive nature of both enterprises will be funneled into a unified Russian effort to successfully compete against other countries in the worldwide conventional arms market.

2. Military-Technical Cooperation (MTC)

In addition to the restructuring efforts of President Putin, the Russian Federation's defense sector has turned to the international conventional arms market for relief. Some analysts have pointedly stated, "exports now equate to survival for many (Russian defense) firms."⁸⁵ "The continuing failure of the Russian economy has created a nearly irresistible attraction to the hard capital generated by the export of advanced

⁸³ Kozyrev, Mikhail, "Russian President's Office Plans Merger of Arms Exporters," *Moscow Vedomosti*, September 18, 2000.

⁸⁴ *Ibid.* If this decree becomes law, Promeksport will most likely become a subdivision of Rosvooruzheniye.

⁸⁵ Andrew Hull and David Markov, p. 141.

conventional weapon systems.”⁸⁶ MTC with other nations has become a key focus of both President Putin and Russian Federation defense industry leaders.

The concept of Russian MTC over the past decade includes several components. Most associate MTC strictly with conventional arms imports and/or exports and fail to recognize its other relevant aspects. MTC also includes “the provision of military-technical services, free or preferential aid, manufacturing licenses, and cooperation with other nations in the development of arms and military equipment.”⁸⁷

There are also several economic incentives associated with MTC to include increased hard currency proceeds, reduced domestic arms procurement costs, a sustained employment level within the defense sector, reductions in research and development costs, and possible creation of dual-use technologies.⁸⁸ “The proponents of arms exports and MTC advance arguments that range from arms sales’ usefulness as a means for financing enterprise conversion activities to their being a long-term source of revenue that should be cultivated in its own right.”⁸⁹ President Putin’s restructuring efforts merely strengthened such arguments.

Russian defense enterprises frequently offer joint venture or licensed production packages to the customer with exports of conventional equipment. In doing so “the recipients want to offset a substantial amount of their purchasing costs by establishing

⁸⁶ “Russia’s Road to Corruption,” Chapter 9, September 2000.

⁸⁷ Andrew Pierre and Dmitri Trenin, p. 19.

⁸⁸ Ibid.

⁸⁹ O’Prey, Kevin P., *A Farewell to Arms?*, p.75.

their own domestic production lines, which allows them to develop expertise in a technologically advanced sector.”⁹⁰ Services such as these are additional tools employed by Russian defense enterprises to gain a greater market share of the international conventional arms market.

In recent years Russian Military-Technical Cooperation with other countries has flourished. China and India, in particular, have entered into numerous MTC agreements with the Russian Federation. Both of these countries are looking to lower the costs of imported conventional arms, and, thus, they purchase licensed production rights to indigenously produce the equipment. China’s purchase of the production license for the Su-27 fighter in 1996, as will be discussed in Chapter IV, and India’s purchase of the production license for the Russian T-90 battletank are two recent MTC examples.⁹¹ In addition to conventional arms exports emanating from the Russian Federation, MTC agreements between Russia and other nations are rapidly becoming a major cause of concern for the United States since MTC agreements increase the number of Russian advanced conventional arms producers throughout the world.

⁹⁰ Simunovic, Pjer, “Russia Chases Fewer Clients as Former Satellites Look West,” *Jane’s Intelligence Review*, May 1, 1998.

⁹¹ “India and Russia Sign Protocol on Defense and Technical Cooperation,” *New Delhi Hindustan Times*, FBIS Document ID: SAP20001004000032, October 4, 2000.

C. CONCLUSION

Chapter III has provided a brief synopsis of the Russian Federation's defense industry over the past decade. The defense sector experienced major challenges throughout the 1990's including lack of state defense procurement orders and the failure of defense conversion. Recently, however, drastic restructuring of the defense sector by President Putin and a newfound reliance on conventional weapons exports, including MTC, are current initiatives being pursued by the Russian Federation. As these initiatives take effect, increased proliferation of Russia's lethal conventional arms remains a vital concern of the United States.

IV. CASE STUDY: RUSSIAN CONVENTIONAL ARMS EXPORTS TO CHINA

One of the most troubling aspects of China's military modernization program is its growing strategic partnership with Russia, which Beijing views as an offset to U.S. power. China continues to acquire sophisticated military equipment and technologies from Russia, including fighter aircraft, ships, submarines, cruise missiles, and surface-to-air missiles. Among the more troubling of China's recent acquisitions from Russia are two guided missile destroyers that will likely be outfitted with anti-ship cruise missiles specifically designed to counter U.S. carrier battle groups. Reportedly, China is seeking to purchase additional destroyers from Russia.⁹²

Chapter IV explores present-day Russian conventional arms exports to China which serves as an example of a developing pattern of arms customer relationships between Russia and consumer nations. China has become one of Russia's most profitable customers since Russia turned to aggressively exporting conventional arms to preserve its defense sector. Over the past decade, the Sino-Russian customer relationship has grown much closer than in previous decades and a strategic partnership is now emerging between the two nations to counter the perceived hegemony of the United States.

The chapter examines the specifics of the strategic partnership, including a discussion of the types and quantities of conventional arms the Chinese are currently purchasing from Russia. The chapter also analyzes the potential threat the export of Russian conventional arms represents to operational forces of the United States Navy. Specifically, it will address the threats to the U.S. Navy made possible by the People's

⁹² Congressman Floyd Spence, Chairman, House Armed Services Committee, July 19, 2000. Available online: <<http://www.house.gov/hasc/pressreleases/2000/00-07-19spence.html>>

Liberation Army Navy's (PLAN) changing maritime strategy, as well as possible scenarios in which the PLAN and U.S. Navy may confront one another in the future.

A. THE SINO-RUSSIAN STRATEGIC PARTNERSHIP

The Chinese and Russian Federation governments have developed a closer relationship with one another during the past decade to counter the perceived dominant influence of the United States. As a result, in lieu of an alliance, they have formed a strategic partnership. The strategic partnership is essentially a bilateral agreement and based on five key principles agreed upon by both the Russian Federation and China. Russian conventional arms procurement by the Chinese is one of the core elements of the newly emerging strategic partnership. China has been purchasing large volumes of Russian equipment and technology such as Mi-17 helicopters, Il-76 transport aircraft, Su-27 and Su-30 fighter aircraft, SA-10 and SA-15 SAM regiments, Kilo-class submarines, Sovremennyy-class destroyers with SS-N-22 Sunburn missiles, and A-50 Airborne Early Warning (AEW) aircraft.

1. Background of Sino-Russian Strategic Partnership

At the outset of the Cold War, Russia and China were communist allies, but during the 1960's, the two countries rapidly grew apart. Not only did the Soviet Union withdraw all Soviet advisers, aid, and weapon designs from China in 1960, the two

nations openly clashed along their common borders in the late 1960's.⁹³ Over the next thirty years, China and the Soviet Union/Russia had little economic and diplomatic interaction with one another.

1989 marked a major turning point in Sino-Soviet relations. At the Sino-Soviet summit meeting in May 1989, a newfound cooperative relationship emerged between the Soviet Union and China with the two nations ultimately agreeing upon a framework of political rapprochement with one another.⁹⁴ Military cooperation between the two nations including conventional arms sales and Military-Technical Cooperation resumed, and the Chinese immediately began procuring Russian conventional arms to modernize their outdated military equipment. Since the 1989 summit, "ties between Russia and China have gradually warmed," and the foundation for a long-term strategic partnership has formed.⁹⁵

At the heart of the Sino-Russian strategic partnership are five principles adhered to by China and Russia: peaceful coexistence; mutual respect; trust; equality; and mutual non-interference in each other's' affairs.⁹⁶ China, for example, politically supports Russia's current war against the Chechen rebels, and, similarly, Russia currently supports

⁹³ Gill, Bates and Kim, Taeho, *China's Arms Acquisitions From Abroad: A Quest for 'Superb and Secret Weapons.'* SIPRI Research Report No. 11, (Oxford: Oxford University Press, 1995), p. 30.

⁹⁴ Ibid., p. 51.

⁹⁵ Eckholm, Erik, "Russia, China Eye Friendship," *New York Times News Service*, January 14, 2001.

⁹⁶ Blank, Stephen J., Testimony Before The House Armed Services Committee, July 19, 2000. Available online: <<http://www.house.gov/hasc/testimony/106thcongress/00-07-19blank.html>>

China's policy of one-China.⁹⁷ Each of the five guiding principles is equally important to both nations and by strictly adhering to the principles, the partnership between the Russian Federation and China only strengthens. In the words of Russian and Chinese leaders, the strategic partnership "offers a model for the entire world as to how bilateral relationship among neighbors should develop."⁹⁸

The strategic partnership is not a formal alliance between the two countries. There has yet to appear, in fact, a formal clause binding either country to fight on behalf of the other, providing either country is attacked by a third party.⁹⁹ Russia and China have also stated this partnership is not directed towards any specific third party, i.e. the United States.¹⁰⁰ The partnership, though, increasingly seems to be evolving into an alliance type structure in order to combat U.S. influence in the Asian-Pacific region. As Ian Anthony suggests, "China and Russia hope that their bilateral military ties will provide them with a strategic counterweight to a number of threats and challenges in the post-cold war era, including U.S. hegemonism."¹⁰¹ The evolving Sino-Russian strategic relationship, therefore, requires close observation by the U.S. in the future.

⁹⁷ Ibid. Note: In fact, Russia also supports a non-interference policy towards the Taiwan issue. Russia will not have state to state relations with Taiwan, will not sell weapons to Taiwan, and will not support Taiwanese membership in any world organization that requires statehood for membership.

⁹⁸ Ibid.

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Anthony, Ian, *Russia and the Arms Trade*, p.215.

2. Chinese Conventional Arms Purchases from Russia

Export of Russian conventional arms to China is perhaps the most essential element of the emerging strategic relationship between the two countries. In the past decade, "China's strong desire for Russian military equipment coincided with equally strong pressure by Russian arms manufacturers to sell their products to any and all interested parties."¹⁰² The Russian defense sector views the export of conventional weapons as crucial to their existence, and in their relationship with the Chinese they have found a customer willing to import large volumes of conventional arms.

China embarked upon a modernization program for its armed forces, the People's Liberation Army (PLA), throughout the 1990's. The PLA is aware of the gap in capabilities between its military and other armed forces such as the United States and has recently initiated large-scale weapons procurement to diminish the gap.¹⁰³ The PLA views the acquisitions of Russian conventional arms as a start to its modernization program. The Chinese are widely known for reverse-engineering military equipment so many analysts believe the recent purchases of Russian conventional arms are a short term solution for the PLA's outdated force. The longer term and more challenging solution to modernize the PLA is for the Chinese to successfully reverse-engineer the modern 1980's and 90's Russian equipment and technology in order to indigenously produce effective

¹⁰² Pierre and Trenin, p. 91.

¹⁰³ Blasko, Dennis J., "Evaluating Chinese Military Procurement from Russia," *Joint Forces Quarterly*, Autumn/Winter 1997-98, p. 91.

conventional arms such as fighter aircraft and naval weapon systems.¹⁰⁴ An increase of MTC agreements with Russia, as described in Chapter III, enables China to indigenously employ this technology in a much quicker fashion. All the more reason for the United States to maintain a close watch on the modernization efforts of the PLA.

China's primary supplier of conventional arms over the last decade has been the Russian Federation. The Chinese enjoy access to and are able to afford the wide array of Russian advanced equipment offered for sale and have aggressively procured naval, air, and land conventional arms from the Russians. As depicted in Table 4.1, the PLA has purchased substantial quantities of Russian conventional equipment including Mi-17 helicopters, Il-76 transport aircraft, SA-10 and SA-15 SAM regiments, and A-50 AEW aircraft.¹⁰⁵ The People's Liberation Army Navy (PLAN), in particular, has dramatically boosted its maritime capabilities with the purchase of Kilo-class submarines and Sovremenny-class destroyers armed with 3M-80 Moskit (SS-N-22 Sunburn) missiles. Additionally, the large volume purchases of fourth generation Sukhoi Su-27 and Su-30MKK fighter aircraft will not only upgrade the PLA's Air Force (PLAAF), but these aircraft may also be employed in a naval support role to protect the PLAN's warships.¹⁰⁶ The modernization program of the PLA is still in its infancy stage and continued

¹⁰⁴ "China's Foreign Conventional Arms Acquisitions: Background and Analysis", *CRS Report for Congress, Report RL30700*, October 10, 2000, p. 9.

¹⁰⁵ *Ibid.*

¹⁰⁶ *Ibid.*, p. 21.

Item	Qty.	Year of Sale	Year of Delivery	Value (\$ mil)	Comments
Mi-17 helicopters	60	1990-97	1991-99		
Il-76 transport aircraft	10	1990-92	1991-93		
Su-27 fighters	26 22 <200	1991 1995 1996	1992 1996 1998-?	1,000 710 2,500	Armed with AA-10 & AA-11's; up to 200 (called J-11) to be co-produced under license with Russian help over perhaps 15 years
S-300/SA-10 SAM regiments	4	1991-99	1993-2000		Similar to U.S. Patriot air defense system
Kilo-class submarines	4	1994	1995-98	700	2 Type 877 and 2 Type 636
Tor-M1/SA-15 SAM regiments	2	1995-99	1997-2000		
Sovremenny-class destroyers	2	1996	2000	1,000	Equipped with 3M-80 Moskit (SS-N-22 Sunburn) missiles, Uragan (SA-N-7 Gadfly) SAMs, and Ka-27 and Ka-28 ASW helicopters
A-50 AEW aircraft	1-4	1996	Not yet delivered	250-1,000	For PLAAF; modified Russian Il-76; Israeli Phalcon radar canceled in 2000
Su-30 fighters	40	1999	Not yet delivered	2,000	Armaments could include Python-4 AAMs (Israeli), KR-1 anti-radiation AAMs, air-launched Moskit, R-77 (AA-12) AAMs

Table 4.1: China's Major Conventional Arms Acquisitions from Russia Since 1990

From: "China's Foreign Conventional Arms Acquisitions: Background and Analysis," *CRS Report for Congress, Report RL30700*, October 10, 2000, p.9.

procurement of advanced Russian conventional arms will potentially threaten operational forces of the United States Navy in the Western Pacific.

a. Kilo-Class Submarines

Over the past decade, China's PLAN has sought to modernize its dated submarine fleet by procuring advanced diesel submarines. According to RADM Lowell E. Jacoby, Russia continued "to produce a wide range of leading edge undersea warfare technologies for their own use and for export."¹⁰⁷ It was only a matter of time before a deal was struck between the two countries regarding the sale of Kilo-class diesel submarines.

Even though the PLAN currently has over one hundred submarines in its inventory, half of them are dated, non-operational, Romeo-class submarines.¹⁰⁸ In the subsequent sales agreement between Russia and China in 1995, the PLAN procured four Kilo-class submarines from Russia at an estimated price of \$700 million.¹⁰⁹ The four Kilo-class submarines acquired by China consist of two Type 877EKM submarines and two advanced Type 636 submarines.¹¹⁰ The two Type 877EKM Kilos arrived in China in

¹⁰⁷ RADM L.E. Jacoby, USN, "Submarine Warfare in the 21st Century," Statement before the Seapower Subcommittee of the Senate Armed Services Committee, April 13, 1999.

¹⁰⁸ Gill, Bates and Kim, Taeho, p. 62.

¹⁰⁹ Karniol, Robert, "China to Buy Russian 'Kilo' Submarines," *Jane's Defense Weekly*, November 19, 1994.

¹¹⁰ *CRS Report RL 30700*, p.14.

February and November, 1995, and the Type 636 Kilos arrived in January and December of 1998.¹¹¹

The four Kilo-class submarines greatly enhance the operational capabilities of the PLAN's current submarine fleet. The two Type 877EKM Kilos purchased by China are the export variant of the basic Russian Kilo submarine complemented with improved fire-control systems and wire-guided acoustic homing torpedoes from two tubes.¹¹² The two advanced Type 636 submarines have the added bonus of an improved propulsion system and acoustic quieting. The Type 636 is advertised as one of the quietest submarines in the world while maintaining the ability to operate up to 400 miles submerged and remain at sea for up to 45 days.¹¹³

Recent reports suggest China is looking to purchase additional Kilo-class submarines from the Russian Federation in the near future. Two or three Kilo-class submarines equipped with the effective Russian 3M54 Club anti-ship cruise missile may be purchased within the next few years.¹¹⁴ Such acquisitions will serve to make the PLAN a more credible threat to the United States Navy in the Western Pacific. In the words of former Secretary of Defense William Cohen, "China's submarine fleet could constitute a substantial force capable of controlling sea lanes and mining approaches

¹¹¹ *Jane's Fighting Ships, 1998-99*, p. 118.

¹¹² *Jane's Fighting Ships, 1998-99*, p. 556. Note: Torpedoes can be a combination of TEST 71/96; wire-guided; active/passive homing to 8.1nm at 40kt; passive wake homing to 10.3nm at 45kt.

¹¹³ *CRS Report RL 30700*, p. 14.

¹¹⁴ *Ibid.*, p. 15.

around Taiwan, as well as a growing threat to submarines in the East and South China Seas.”¹¹⁵

b. Sovremennyy-Class Destroyers and SS-N-22 Sunburn Missiles

Lacking an area on-board air defense and supersonic surface-to-surface missiles, China has recently purchased two Sovremennyy-class guided missile destroyers from the Russian Federation.¹¹⁶ The two destroyers are clearly the largest and most combat effective surface ships in the PLAN. In order to acquire this increased capability, the Chinese reportedly paid approximately \$1 billion to the Russian Federation for the two destroyers in November of 1997.¹¹⁷ The first destroyer, *Hang Zhou*, was delivered to China in February of 2000 and as of December, 2000, the second of the two destroyers, *Fu Zhou*, was in transit to China.¹¹⁸

The design of the Sovremennyy-class destroyer is fairly standard for a guided-missile destroyer. Equipment such as the medium-range Uragan (SA-N-7 Gadfly) surface-to-air missile and a complement of eight Ka-27 and Ka-28 anti-submarine helicopters have been included with the two destroyers.¹¹⁹ However, the devastating firepower of the Sovremennyy-class destroyers lies within its two quad launchers riding

¹¹⁵ Cohen, William, “Report on the Military Power of the People’s Republic of China,” June, 2000.

¹¹⁶ *Jane’s Fighting Ships, 1998-99*, p. 120.

¹¹⁷ Sokut, Sergey, “Russia-China Destroyer Deal Detailed,” *Moscow Nezavisimaya Gazeta*, March 15, 2000. FBIS Document ID: CEP20000320000251, March 20, 2000.

¹¹⁸ Baker III, A.D., “Combat Fleets,” *Proceedings*, February, 2001, p. 92. Note: Both destroyers will reportedly be assigned to the PLAN’s East Sea Fleet.

¹¹⁹ *Jane’s Fighting Ships, 1998-99*, p.120. Note: SA-N-7 Gadfly has a range of approximately 13.5nm and max altitude between 46,000-50,000 ft.

port and starboard. Each quad launcher is capable of firing a four round salvo of 3M-80 Moskit (SS-N-22 Sunburn) anti-ship missiles, making both units, the *Hang Zhou* and the *Fu Zhou*, lethal surface combatants.¹²⁰ The initial deal calls for China to receive approximately 50 Sunburn missiles, with the first 24 having already arrived in the spring of 2000.¹²¹

The SS-N-22 Sunburn missile is the most advanced surface-to-surface anti-ship cruise missile in the world. The Soviet Union, and now Russia, have always been known for their powerful surface-to-surface weapons and the Sunburn missile continues the tradition.

The 3M-80 Moskit missile (SS-N-22 Sunburn) is powered by a solid rocket booster/ramjet sustainer combination delivering a maximum speed of Mach 2.1 at low altitude and a maximum range of up to 65 nautical miles depending on flight profile. The later 3M-82 Moskit-M version is thought to extend range to about 81 nautical miles. The weapon's Altair-designed multichannel seeker uses active radar, anti-radiation, and home-on-jam modes. Approaching its target at an altitude of approximately 66 feet, Moskit can execute a terminal 'S' maneuver (pulling up to 15g) to evade close-in defenses. The 660-pound penetrating warhead contains 330 pounds of high explosive. Raduga (the manufacturer) has publicized a number of further improvements to Moskit. These include more internal fuel (pushing range up to 108 nautical miles), an improved warhead and seeker updates.¹²²

¹²⁰ Sokut, Sergey, "Moskit Versus Aegis," *Moscow Nezavisimoye Voyennoye Obozreniye*, March 24-30, 2000. FBIS Document ID: CEP20000404000293, April 4, 2000.

¹²¹ Gertz, Bill, "Russia Sends Cruise Missiles to China for New Warships," *Washington Times*, May 19, 2000.

¹²² "Russian anti-ship missile developments," *Jane's Defense Weekly*, August 30, 2000, p.26. Note: Over-the-horizon guidance could be supplied by the 120-mile range radar of the Ka-27 helicopter. (<<http://www.heritage.org/library/categories/forpol/asc146.html>>)

China's acquisition of the two Sovremenny-class guided missile destroyers with the SS-N-22 Sunburn missiles clearly upgrades the capability of the PLAN's surface fleet. It has been reported the PLAN is also looking to procure two more Sovremenny-class destroyers from the Russian Federation in the near future. The *Rastoropnyy* and the *Bezuprechnyy*, both based at Severnaya Shipyard in St. Petersburg, are the most likely Sovremenny-class destroyers to be purchased by China with delivery expected in the 2002-2003 timeframe.¹²³ China's overall maritime capabilities will continue to improve in the foreseeable future.

c. Sukhoi Su-27 and Su-30MKK Fighter Aircraft

In addition to upgrading the PLAN's undersea and surface capabilities with Russian conventional arms, China has also purchased advanced fourth-generation Sukhoi Su-27 and Su-30MKK fighter aircraft from the Russian Federation. These long range fighters are vastly superior combat aircraft when compared to indigenously produced Chinese aircraft such as the J-7, J-8, or Q-5.¹²⁴ Since 1996, China has received close to 50 Su-27 fighters at a cost of just under \$2 billion and has also purchased the production license to indigenously produce up to 200 additional Su-27 fighters at a cost of \$2.5 billion.¹²⁵ As for the Su-30MKK, China has reportedly

¹²³ Baker III, A.D., p. 92.

¹²⁴ *CRS Report RL 30700*, p.24. Note: The range and speed of both the Su-27 and Su-30MKK are approximately double that of China's indigenously produced counterparts.

¹²⁵ *Ibid.*, p.9.

purchased 40 Su-30MKK from the Russian Federation at a cost of approximately \$2 billion and delivery is expected to begin as early as 2002 or 2003.¹²⁶

The Sukhoi Su-27 and Su-30MKK's purchased by China are assigned to the PLA Air Force (PLAAF). The PLAAF purchased these fourth generation fighters to improve their air-combat capabilities in the region. Even though the primary role of both long-range fighters is air-superiority, PLA leaders envision a secondary naval support role for the fighters in the near future, especially the Su-30MKK.¹²⁷ The United States Navy, consequently, may encounter fourth generation, Russian-designed fighter aircraft in the skies above the Western Pacific in the future.

The Sukhoi Su-27 is a highly maneuverable and lethal fighter. Some analysts believe the Su-27 "may be more maneuverable than the best Western fighters," and "is roughly comparable to the United States' F-15C air superiority fighter."¹²⁸ Russian armament such as the AA-10 Alamo and the helmet-sighted AA-11 Archer air-to-air missiles give the Su-27 a formidable array of weapons to engage and defeat enemy aircraft.

The Sukhoi Su-30MKK, arguably, is even more intimidating than the Su-27. The Su-30MKK is an "upgraded two-seat version of the Su-27 retaining much of the Su-27's air-combat capability, but is also equipped with all-weather navigation systems and laser or TV-guidance equipment that gives its precision-guided munitions pinpoint

¹²⁶ Ibid., p.21.

¹²⁷ Ibid.

¹²⁸ Ibid., p.23.

accuracy.”¹²⁹ For the proposed naval support role, the Su-30MKK weapons loadout may include a variant of the powerful Russian and Chinese co-produced AS-17 Krypton air-surface missile, and possibly the newly developed air launched version of the 3M-80 Moskit (SS-N-22) anti-ship missile, the 3M-80EA.¹³⁰ Evaluations are still ongoing for such weapon systems, but the United States needs to maintain a close watch on air-surface missile developments within China.

B. IMPLICATIONS FOR THE UNITED STATES NAVY

The large volume of advanced Russian conventional naval equipment exported to navies throughout the world carries serious implications for the United States Navy. During the Cold War, the United States Navy focused almost exclusively on the Soviet Navy. The United States Navy now, however, needs to maintain a much broader situational awareness of which countries possess such advanced Soviet/Russian naval equipment. If the United States Navy fails to maintain this awareness, American warships, aircraft, and most importantly, lives could be lost in the future.

Procurement of Russian naval equipment by China's PLAN, particularly, causes much concern for the operational forces of the United States Navy. The PLAN has recently altered their maritime strategy and they are seeking a much more influential role

¹²⁹ Fisher, Richard D., "Dangerous Moves: Russia's Sale of Missile Destroyers to China", *ASC Backgrounder No. 146*, February 20, 1997. Available online: <http://www.heritage.org/library/categories/forpol/asc146.html>

¹³⁰ *CRS Report RL 30700*, p. 21.

in the seas of the Western Pacific. In the not too distant future, accordingly, the United States Navy may confront the PLAN's Russian Kilo-class submarines and Sovremenny-class destroyers and depending on the scenario, the PLAN may have the advantage in such a confrontation.

1. Changing Strategy of the PLAN

The large volume of Russian advanced conventional arms imported by the PLAN during the last several years has supported a shift in Chinese maritime strategy. The PLAN's once coastal-oriented, defensive naval strategy has subsequently evolved into an offshore-oriented, defensive naval strategy known as "offshore active defense."¹³¹ As PLA General Liu Huaqing stated in 1993:

It is imperative to establish a powerful and modern navy. The three main tasks of the people's navy [PLAN] are to safeguard the motherland's sacred territorial waters, to counterattack hegemonists and advocates of power politics who play with fire and dare to invade our country, and to accomplish the great cause of the reunification of the motherland and smash all attempts to break China up by practicing 'Taiwan independence' and 'one China, one Taiwan.'¹³²

The focus of the PLAN's new "offshore active defense" strategy is to control the seas out to the first and second island chains (see Figure 4.2). The first island chain includes those islands which run from the Kuril Islands north of Japan down through

¹³¹ Fisher, Richard D.

¹³² Bates Gill and Taeho Kim, p.61.

Taiwan, the Philippines, and most of Indonesia, including the South China Sea.¹³³ The second island chain includes the seas and islands out to Guam, the Marianas, and the Carolines.¹³⁴ The PLAN, consequently, is looking to drastically increase their influence in the Western Pacific.

The new strategy employed by the PLAN may seem ambitious. Boosted by the upgraded capabilities of the newly purchased Russian conventional equipment, however, some analysts believe the PLAN may control out to the first island chain by 2015 and the second island chain by 2030. Implications for the United States Navy operating in the Western Pacific will accordingly escalate in the future.

2. Possible Scenarios Involving the United States Navy

Ever-increasing tensions regarding Taiwan's possible independence is the primary rationale why the United States Navy could conceivably confront the PLAN in the Western Pacific. If such a confrontation took place, a number of scenarios involving the United States Navy and the PLAN's newly acquired Russian Sovremenny-class destroyers and Kilo-class submarines could occur. The two primary scenarios which both focus on PLAN attacks against United States Navy surface combatants, include a no-warning shot of an SS-N-22 from a Sovremenny-class destroyer and a no-warning shot of a wake-homing torpedo from a Kilo-class submarine.

¹³³ Fisher, Richard D.

¹³⁴ Ibid.

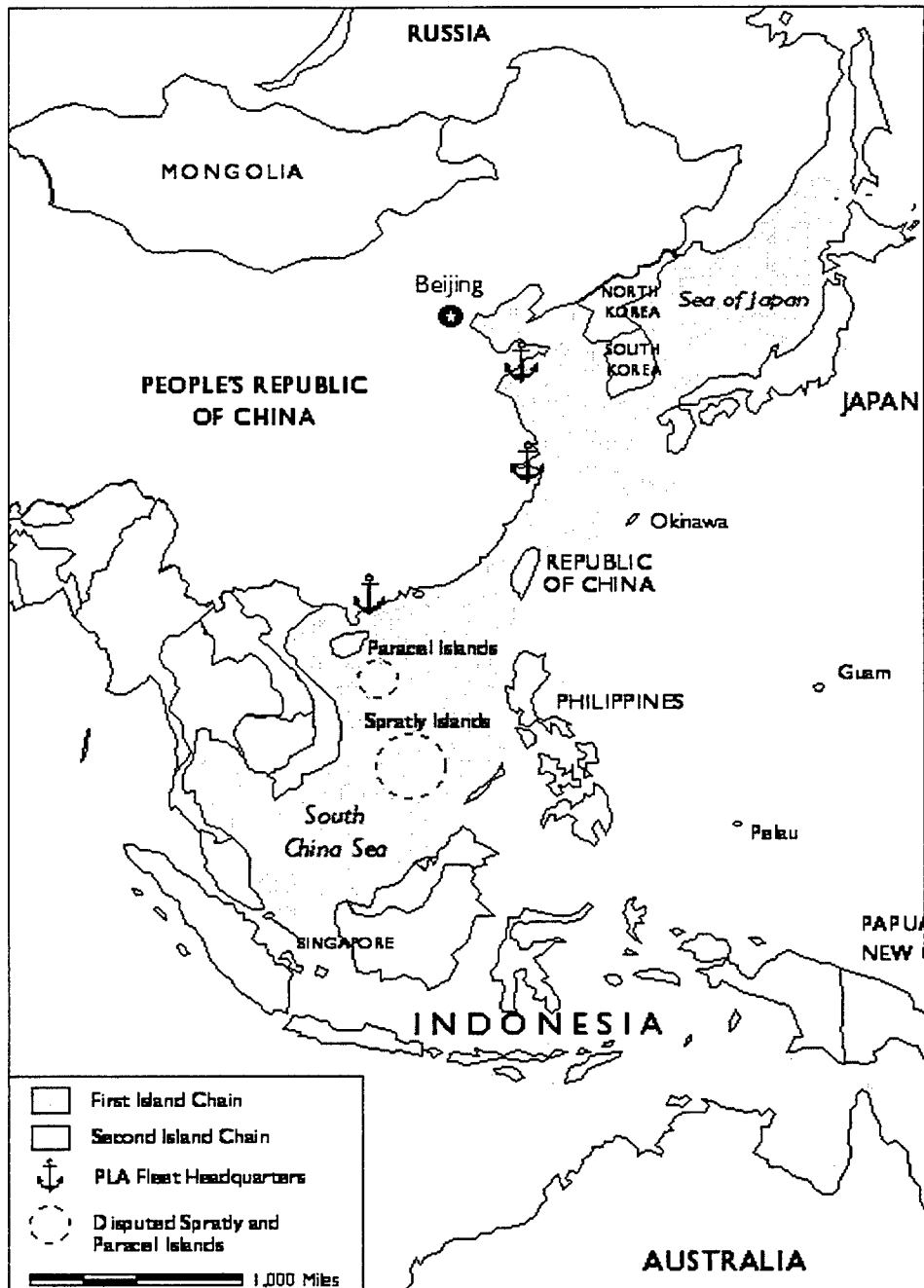


Figure 4.2: PLAN's First and Second Island Chain Map

After: Fisher, Richard D., "Dangerous Moves: Russia's Sale of Missile Destroyers to China", *ASC Backgrounder No. 146*, February 20, 1997. Available online: <http://www.heritage.org/library/categories/forpol/asc146.html>

The no-warning shot, or first shot, of an SS-N-22 Sunburn missile from one of the PLAN's Sovremenny-class destroyers is arguably the most threatening scenario for surface combatants of the United States Navy. As Rear Admiral Eric McVadon stated in November 1999, "the scariest scenario is the first shot theory...If Beijing decided to take a potshot at a U.S. aircraft carrier, this missile (SS-N-22 Sunburn) would give us something to worry about."¹³⁵ The United States Navy has reason for concern. According to Professor Igor Seleznyov, Director of the Raduga bureau and Program Head for the 3M-80 Moskit (SS-N-22) missile in 1993, the characteristics of the 3M-80 Moskit missile "have been optimized for the specific purpose of overcoming the defensive barrier of the United States Navy's AEGIS system."¹³⁶

An SS-N-22 Sunburn missile fired in a first shot scenario from either the PLAN's *Fu Zhou* or *Hang Zhou* Sovremenny-class destroyers has an advantage against United States Navy warships. The only defense the United States Navy currently has against the missile is the Mk-15 CIWS Phalanx system and this system is hardly a guarantee against the SS-N-22.¹³⁷ To counter the SS-N-22 Sunburn missile, the United States Navy has conducted several tests employing the Russian MA-31 supersonic cruise missile in a

¹³⁵ Komarov, Steven, and Slavin, Barbara, "China's Military Upgrade May Raise Stakes in Taiwan," *USA Today*, November 19, 1999. Note: Such an attack could occur to "highlight the capabilities of the SS-N-22, embarrass the United States demonstrating the vulnerabilities of U.S. Navy ships, or exact retribution for the U.S. attack on the PRC embassy in Yugoslavia during Operation Allied Force." (*CRS Report RL 30700*, p.57)

¹³⁶ Bonsignore, Ezio, "New Data on Russian Anti-Ship Missiles," *Military Technology*, No.4, 1993, p.66. Note: Also, testing may begin in the immediate future on the air-launched version of the Sunburn missile, the 3M-80EA, fired from the newly acquired Su-30MKK. This missile likewise has been developed to defeat AEGIS platforms.

¹³⁷ *CRS Report RL 30700*, p.52.

conducted several tests employing the Russian MA-31 supersonic cruise missile in a simulated Sunburn missile role but has yet to successfully shoot one down.¹³⁸ In a first shot scenario, consequently, “ships equipped with an AEGIS system might not be able to guarantee 100 percent effectiveness in defending themselves against the missile, and ships not so equipped would be highly vulnerable to the missile unless they operate under the protective cover of an AEGIS-equipped ship.”¹³⁹

The other threatening scenario for United States Navy surface combatants is a no-warning shot of a wake-homing torpedo from one of the PLAN’s Russian Kilo-class submarines. When operating on battery power, the PLAN’s diesel Kilo-class submarines acquired from Russia are extremely quiet. The two improved Type 636 Kilos acquired by the PLAN are as quiet as an Improved Los Angeles (SSN-688) class nuclear-powered attack submarine (SSN) and more quiet than a basic Los-Angeles-class SSN.¹⁴⁰ Such characteristics may enable the PLAN’s Kilo-class submarines to avoid U.S. Navy Anti-Submarine Warfare (ASW) operations and maneuver themselves into an optimal firing position to attack a U.S. Navy surface combatant with wake-homing torpedoes.

The United States Navy has concerned itself with surface-ship torpedo defense for a number of years, but it does not currently possess a fully effective defense against a wake-homing torpedo. The only anti-torpedo defense currently employed by the U.S.

¹³⁸ Sokut, Sergey, “Moskit Versus Aegis.” Note: Sokut also points out, as of March, 2000, the United States was planning to purchase up to 100 additional Russian MA-31 missiles to conduct firing tests against.

¹³⁹ *CRS Report RL 30700*, p. 52.

¹⁴⁰ *Worldwide Submarine Challenges, 1996*, Office of Naval Intelligence, February, 1996, p.11.

Navy includes evasive maneuvering and the use of towed acoustic decoys.¹⁴¹ As stated in *CRS Report RL 30700*:

An attack by a wake-homing torpedo would pose a particular threat to a United States Navy ship for two reasons. First, the torpedoes are difficult to detect because they approach the ship from the rear where their sound is masked by the noise of the ship's propellers. Second, a wake-homing torpedo would not be fooled by an acoustic decoy, and the ship may find it difficult to maneuver quickly enough to reduce or eliminate its wake. Given these considerations, U.S. Navy officials might not be able to guarantee 100 percent effectiveness in defeating an incoming torpedo. Some analysts, in fact, might argue that the chance of defeating a torpedo attack would be considerably less than 100 percent.¹⁴²

The combination of the improved, quiet Type 636 Kilo-class submarines and the highly effective wake-homing torpedo employed by the PLAN raises serious concerns for the United States Navy. If an unlocated PLAN Kilo-class submarine positions itself for an attack against a United States Navy surface combatant, the fate of the surface ship is in the hands of the PLAN. Careful monitoring of the PLAN's Kilo-class submarines and continued strong U.S. naval presence in the region, however, may prevent such a scenario from occurring in the first place.

C. CONCLUSION

Chapter IV has examined the emerging Sino-Russian strategic partnership including the present cooperative customer relationship found between Russian

¹⁴¹ *CRS Report RL 30700*, p. 65.

¹⁴² *Ibid.*

conventional arms exporters and Chinese conventional arms importers. The Russian defense industry views arms purchases by China as essential to their survival, whereas China views the purchases as necessary for their aggressive modernization efforts.

The Chinese have procured Russian conventional arms such as advanced Kilo-class submarines, Su-27 and Su-30 fighter aircraft, and Sovremennyy-class destroyers armed with SS-N-22 Sunburn anti-ship missiles. The PLAN's newly emerging offshore-oriented defense strategy has only been bolstered by such procurements. The United States Navy, accordingly, may find itself engaged against the PLAN in the future. If the United States neither maintains a strong presence in the Western Pacific nor devotes substantial resources to tracking the modernization efforts of the PLAN, such engagements may prove fatal for operational forces of the United States Navy.

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V. CONCLUSION

A. OVERVIEW

As the 21st century dawns, conventional arms producers proliferate billions of dollars of military equipment each year. Developed and developing countries continue to import and export large quantities of advanced conventional arms on a routine basis. While the quantity of conventional arms has fallen markedly since the height of the Cold War, the proliferation of increasingly advanced conventional arms utilizing modern technology raises serious concerns for the United States.

The United States is especially concerned with the Russian Federation's conventional arms transfer policies since the collapse of the Soviet Union. The Russian Federation remains the second largest exporter of advanced conventional arms in the world. Russian conventional arms currently available include modern supersonic anti-ship cruise missiles, acoustically quiet submarines, and advanced fourth generation fighter aircraft. Declining state procurement orders and lack of success in defense industry conversion have fueled the Russian Federation's newfound reliance on exports of advanced conventional weapons to sustain the Russian defense industry. Exports of Russian conventional arms, accordingly, will continue to rise in the future.

The transfer of Russian advanced conventional arms raises serious challenges for the United States Navy since many of these advanced weapons incorporate modern technologies designed to defeat current United States weapon systems. Russian conventional arms proliferation coupled with the emergence of Russian strategic

partnerships create serious implications for the United States Navy. China, for instance, is deliberately purchasing Russian advanced conventional naval arms to deny sea access to the United States Navy and its allies in the Western Pacific. According to RADM Rick Porterfield, Director of Naval Intelligence, "many coastal countries (such as China) are developing - either by buying outright or by developing them indigenously - the military capabilities intended to deny the USA access to waters that are in the periphery of their nations."¹⁴³ The United States government needs to take actions which will reduce this ever-increasing threat to United States naval forces in the Western Pacific. If the continued proliferation of Russian conventional arms goes unchecked or unmanaged, American warships, aircraft, and, most importantly, personnel will be at risk in the near future.

B. SUMMARY OF FINDINGS

Chapter II provided an overview of present day international and Russian conventional arms transfers. Although the volume of conventional weapons transfers dramatically decreased since the 1980's, billions of dollars continue to change hands in the worldwide conventional arms market on a yearly basis. While Russia still ranks as the number two exporter of conventional military arms in the world, market competition and a reliance on weapon sales for capital income has forced Russia to put their most

¹⁴³ Koch, Andrew, Interview with RADM Rick Porterfield, DNI, *Jane's Defence Weekly*, March 14, 2001.

advanced weapons and modern technologies on the market. The United States, therefore, must continue to closely monitor both Russian export activity as well as the import activity of Russia's worldwide customers.

Chapter III analyzed the Russian Federation's defense industry over the past decade when its defense sector experienced major challenges. Lack of state defense procurement orders for conventional arms and failure in converting defense enterprises are the two primary challenges confronting the Russian Federation's defense industry. Recently, however, drastic restructuring of the defense sector by President Vladimir Putin and a newfound source of income through conventional weapons exports to include Military-Technical Cooperation (MTC) are initiatives which show promise. Russian defense enterprises now view the export of conventional arms as vital to their future existence.

The case study in Chapter IV examined the emerging Sino-Russian strategic partnership. The partnership illustrates the cooperative relationship developing between Russian conventional arms exporters, who view purchases by China as essential to their survival, and Chinese conventional arms importers, who view the Russian conventional arms imports as necessary for their modernization efforts. The Chinese Navy, in particular, procured large numbers of Russian conventional arms over the past decade such as highly-advanced Kilo-class submarines and Sovremennyy-class destroyers armed with SS-N-22 Sunburn anti-ship missiles. The PLAN's newly emerging offshore defense strategy has been enabled by such procurements. As the PLAN continues to improve their maritime capabilities, the United States Navy will increasingly encounter the PLAN's

advanced, and potentially lethal, Russian-designed conventional naval equipment in the Western Pacific. Depending on the scenario, U.S. Navy surface ships may find themselves vulnerable to the modernized PLAN.

C. U.S. POLICY RECOMMENDATIONS

In light of the continuing transfer of advanced Russian conventional arms throughout the world, the United States government needs to initiate three policies to curtail proliferation and minimize the impact of these weapons on regional stability. While these proposals are not easily implemented, a lack of U.S. initiative may result in even greater security concerns for the United States Navy and its allies. First, the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies arms control agreement must be strengthened and closely monitored in order to prevent the Russian Federation from transferring certain conventional arms. Second, the United States needs to continue assisting the Russian Federation in their defense conversion efforts. Lastly, to adequately address the recent modernization program of the PLAN and counter growing Chinese regional power projection capabilities, the United States Navy needs to maintain appropriate force levels in the Western Pacific.

1. Strengthen the Wassenaar Arrangement (WA)

The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies is the leading multilateral conventional arms control

agreement in the world today. The WA received final ratification by the original thirty-three co-founding nations, including the United States and Russia, in July 1996.¹⁴⁴ Taking effect in September 1996, the arrangement's objectives were "to promote transparency, responsibility, and, where appropriate, restraint in the transfer of conventional weapons and sensitive dual-use goods and technologies, particularly to countries and regions of concern such as Iran, Iraq, Libya, and North Korea."¹⁴⁵

The WA, however, does not go far enough to prevent potential destabilizing arms transfers from taking place, such as in the current case of Russian sales to China. Currently, the decision to transfer conventional arms remains solely the responsibility of the individual member states. The WA does not require a case-by-case review of proposed arms exports by member states, nor does it have veto power on proposed exports.¹⁴⁶ Even if some member countries have reservations regarding the arms transfer policies of a fellow member country, the exporting country in question can transfer the conventional weapons despite these reservations.¹⁴⁷

The United States should work to strengthen the WA to prevent future possible destabilizing arms transfers from taking place. Member countries of the WA need to be

¹⁴⁴ Holum, John D., Senior Advisor for Arms Control and International Security, "Testimony before the Senate Government Affairs Committee on the Wassenaar Arrangement and the Future of Multilateral Export Controls," April 12, 2000. Available online: <<http://www.osce.usia.co.at/wassenaar/holum01.html>> Note: Participating states include Argentina, Australia, Austria, Belgium, Bulgaria, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Slovak Republic, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, and the United States.

¹⁴⁵ Office of the Secretary of Defense, *Proliferation: Threat and Response*, November, 1997, p. 59.

¹⁴⁶ Holum, John D.

¹⁴⁷ Ibid.

able to deny member countries the right to export conventional arms if a majority of the member states feel the transfers would destabilize a given region. Russian conventional arms transfers to China are a prime example. The United States and China's regional neighbors find the large volume of Russian conventional arms imported by the Chinese troubling, especially the import of the sophisticated and highly capable SS-N-22 Sunburn anti-ship missile. Presently, the most the United States can do under the WA is to formally voice their concerns about such transfers. A solution for this challenging issue is to create a WA amendment banning such sales if a majority of the member states agree the transfers would contribute to instability in a region. The United States needs to take the leading role in generating such an amendment.

2. Continue United States-Russian Cooperation in Defense Conversion

The United States needs to further initiate and promote cooperation with Russia to successfully convert former Russian defense enterprises into commercial, civilian-oriented enterprises. As detailed in Chapter III, the Russian defense industry faces numerous challenges including declining state defense procurement and difficulties in defense enterprise conversion. A meaningful way for the United States to assist the Russians with their defense conversion efforts is to continue to urge U.S. firms, especially defense firms, to cooperate and share their expertise with Russian counterparts.

Such cooperation should be a continuation of the efforts initiated by the Nunn-Lugar Program in 1994.¹⁴⁸ In addition to helping with the dismantling of Russian nuclear weapons, the Nunn-Lugar Program includes funding for the conversion of Russian defense industries to civilian industries.¹⁴⁹ The Fast Four project found within the Nunn-Lugar Program, for example, has generated positive results in the past. Under the Fast Four project, “approximately \$20 million has been awarded to four projects that pair U.S. firms with Russian defense enterprises to create a new venture oriented toward production of goods and services for the Russian civil economy, including dental chairs, cola processing and bottling, hearing aids, and new air traffic control systems.”¹⁵⁰

If American-Russian defense cooperation successfully continues over the next several years, two results will follow. First, ties between the United States and Russia will strengthen, contributing to greater trust between the two nations. Secondly, the fewer advanced conventional arms produced by the Russian Federation, the fewer advanced arms they have for export. Accordingly, the United States Navy will experience greater security in operational theaters throughout the world.

3. U.S. Naval Force Requirements in the Western Pacific

The offshore defense, anti-access strategy emerging from China’s PLAN necessitates a strong United States naval presence in the Western Pacific region for the

¹⁴⁸ O’Prey, Kevin P., *The Arms Export Challenge*, p.34.

¹⁴⁹ Ibid.

¹⁵⁰ Ibid.

foreseeable future. The PLAN will continue to modernize by purchasing and developing advanced conventional arms. In determining future force requirements, China's recent and projected weapons acquisitions must be considered in the 2001 Quadrennial Defense Review (QDR) process to ensure United States Naval forces are able to shape and respond effectively to Chinese initiatives in the future. The 2001 QDR process should specifically examine the number of carrier battle groups, amphibious ready groups, surface combatants, and attack submarines required to meet the potential challenge associated with the PLAN's modernization program.

The United States Navy's Seventh Fleet is the symbol of American naval forward presence in the Western Pacific. The three primary missions of Seventh Fleet are: "defend and protect the territory, citizens, commerce, sea lanes, allies and other vital interests of the United States; deter aggression with capable, flexible, and mobile U.S. naval forces, cooperating closely with other U.S. military services and the forces of allied and friendly nations; and, if deterrence fails, conduct prompt and sustained combat operations to terminate hostilities on terms favorable to the United States and allies."¹⁵¹

Successfully conducting the three missions will become increasingly more challenging in the future due to the PLAN's aggressive modernization program and developing strategy. Operational forces of the Seventh Fleet, therefore, must make a concerted effort to remain actively engaged with its allies in the Western Pacific to safeguard mutual interests over the next several years. Multinational naval exercises,

¹⁵¹ United States Navy Seventh Fleet, "Forward Presence," February 22, 2001. Available online: <<http://www.c7f.navy.mil/fwdpres.html>>

personnel exchanges, and other cooperative efforts with U.S. allies in the Western Pacific must continue at an aggressive pace. If Seventh Fleet reduces its regional engagement plan with allies and if appropriate force levels are not maintained, this inaction may lead to threat scenarios described in Chapter IV.

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LIST OF REFERENCES

1. Aleksin, Valeriy, "Changes in Arms Trade Must Parallel Military Reform," *Moscow Nezavisimoye Voyennoye Obozreniye No 47*, December 3, 1999. Translated by FBIS. Document ID: CEP19991215000006.
2. Anthony, Ian. *Russia and the Arms Trade*, (Oxford, Oxford University Press, 1998).
3. Baker III, A.D., "Combat Fleets," *Proceedings*, February, 2001.
4. Blank, Stephen J., *The Dynamics of Russian Weapon Sales to China*, (Carlisle Barracks, Pennsylvania: Strategic Studies Institute, 1997).
5. Blank, Stephen J., "Russia's Clearance Sale," *Jane's Intelligence Review*, November 1, 1997.
6. Blank, Stephen J., Testimony Before The House Armed Services Committee, July 19, 2000. Available online: <<http://www.house.gov/hasc/testimony/106thcongress/00-07-19blank.html>>
7. Blasko, Dennis J., "Evaluating Chinese Military Procurement from Russia," *Joint Forces Quarterly*, Autumn/Winter 1997-98.
8. Bonsignore, Ezio, "New Data on Russian Anti-Ship Missiles," *Military Technology*, No.4, 1993.
9. Bulavinov, Ilya, "Where Haven't We Made Sales," *Moscow Kommersant-Vlast*, February 1, 2000. Translated by FBIS. Document ID: CEP20000208000244.
10. Cohen, William, "Report on the Military Power of the People's Republic of China," June, 2000.
11. Congressional Research Service, "China's Foreign Conventional Arms Acquisitions: Background and Analysis", *CRS Report RL 30700*, October 10, 2000.
12. Congressional Research Service, "Conventional Arms Transfers to Developing Nations, 1992-1999," *CRS Report RL 30640*, August 18, 2000.
13. Eckholm, Erik, "Russia, China Eye Friendship," *New York Times News Service*, January 14, 2001.
14. Fisher, Richard D., "Dangerous Moves: Russia's Sale of Missile Destroyers to China", *ASC Backgrounder No. 146*, February 20, 1997. Available online: <<http://www.heritage.org/library/categories/forpol/asc146.html>>

15. "Fourth Quarter Crucial for Russian Arms Exports Figures," *Moscow ITAR-TASS*, October 16, 2000. Translated by FBIS. Document ID: CEP20001016000232.
16. Gertz, Bill, "Russia Sends Cruise Missiles to China for New Warships," *Washington Times*, May 19, 2000.
17. Gill, Bates and Kim, Taeho, *China's Arms Acquisitions From Abroad: A Quest for 'Superb and Secret Weapons.'* *SIPRI Research Report No. 11*, (Oxford: Oxford University Press, 1995).
18. Goldman, Marshall, "The Pitfalls of Russian Privatization," *Challenge*, May/June 1997.
19. Holum, John D., Senior Advisor for Arms Control and International Security, "Testimony before the Senate Government Affairs Committee on the Wassenaar Arrangement and the Future of Multilateral Export Controls," April 12, 2000. Available online: <<http://www.osce.usia.co.at/wassenaar/holum01.html>>
20. Hull, Andrew and Markov, David. "A Changing Market in the Arms Bazaar," *Jane's Intelligence Review*, March 1, 1997.
21. "India and Russia Sign Protocol on Defense and Technical Cooperation," *New Delhi Hindustan Times*, FBIS Document ID: SAP20001004000032, October 4, 2000.
22. Jacoby, L.E., RADM USN, "Submarine Warfare in the 21st Century," Statement before the Seapower Subcommittee of the Senate Armed Services Committee, April 13, 1999.
23. Karniol, Robert, "China to Buy Russian 'Kilo' Submarines," *Jane's Defense Weekly*, November 19, 1994.
24. "Klebanov Confirms Government Plans Cuts In Defense Industry," *Moscow ITAR-TASS*, FBIS Document ID: CEP20000802000277, August 2, 2000.
25. Koch, Andrew, Interview with RADM Rick Porterfield, USN, *Jane's Defence Weekly*, March 14, 2001.
26. Komarov, Steven, and Slavin, Barbara, "China's Military Upgrade May Raise Stakes in Taiwan," *USA Today*, November 19, 1999.
27. Kozyrev, Mikhail, "Russian President's Office Plans Merger of Arms Exporters," *Moscow Vedomosti*, September 18, 2000.

28. "Many Russian Defense Industry Plants Facing Bankruptcy," *Moscow ITAR-TASS*, FBIS Document ID: CEP20000427000301, April 27, 2000.
29. Mussington, David. "Understanding Contemporary International Arms Transfers," *Adelphi Paper 291*(International Institute for Strategic Studies, 1994).
30. Novichkov, Nikolai, "Interview with Alexey Ogarev, Director General of Rosvooruzheniye," *Jane's Defence Weekly*, December 1, 1999.
31. Office of Naval Intelligence, *Worldwide Submarine Challenges, 1996*, February, 1996.
32. Office of the Secretary of Defense, *Proliferation: Threat and Response*, November, 1997.
33. O'Prey, Kevin P., *The Arms Export Challenge: Cooperative Approaches to Export Management and Defense Conversion* (Washington, D.C.: The Brookings Institution, 1995).
34. O'Prey, Kevin P., *A Farewell to Arms?: Russia's Struggles with Defense Conversion*, (New York: Twentieth Century Fund Press, 1995).
35. Pierre, A.J., and Trenin, D.V., *Russia in the World Arms Trade*, (Washington, D.C.: Carnegie Endowment for International Peace, 1997).
36. "Putin Approves Statute of Conventional Weapons Agency," *Moscow ITAR-TASS*, FBIS Document ID: FTS20000202001255, February 2, 2000.
37. "Putin: Defense Industry Will Help Russia Out of Trouble," *Moscow ITAR-TASS*, FBIS Document ID: CEP20000321000180, March 21, 2000.
38. Radyuhin, Vladimir, "Defense Purchases: Russian Exporter Ready to Meet Demand," *The Hindu*, July 24, 2000.
39. "Russia: Four Regions To Produce Conventional Weapons," *Moscow ITAR-TASS*, FBIS Document ID: CEP20000403000284, April 3, 2000.
40. "Russia Set to Supply India with T-90S Tanks, Aircraft Carrier," *Moscow Interfax*, June 27, 2000. Translated by FBIS. Document ID: CEP20000627000078.
41. "Russian anti-ship missile developments," *Jane's Defence Weekly*, August 30, 2000.
42. "Russian Defense Industry News Briefs," *Moscow Nezavisimoye Voyennoye Obozreniye*, FBIS Document ID: CEP20000721000362, July 14, 2000.

43. Simunovic, Pjer, "Russia Chases Fewer Clients as Former Satellites Look West," *Jane's Intelligence Review*, May 1, 1998.
44. Sokut, Sergey, "Russia-China Destroyer Deal Detailed," *Moscow Nezavisimaya Gazeta*, March 15, 2000. FBIS Document ID: CEP20000320000251, March 20, 2000.
45. Sokut, Sergey, "Moskit Versus Aegis," *Moscow Nezavisimoye Voyennoye Obozreniye*, March 24-30, 2000. FBIS Document ID: CEP20000404000293, April 4, 2000.
46. Spence, Floyd, Chairman, House Armed Services Committee, July 19, 2000. Available online: <<http://www.house.gov/hasc/pressreleases/2000/00-07-19spence.html>>
47. Stockholm International Peace Research Institute, *SIPRI Yearbook 2000*.
48. United States House of Representatives, 106th Congress, "Russia's Road to Corruption," *Speaker's Advisory Group on Russia*, September 2000. Available online: <<http://policy.house.gov/russia>>
49. United States Navy Seventh Fleet, "Forward Presence," February 22, 2001. Available online: <<http://www.c7f.navy.mil/fwdpres.html>>

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