FRIENDS IN NEED OR COMRADES IN ARMS?: THE DECLINE OF SINO-RUSSO WEAPONS TRADE

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Executive Summary

1. China's arms acquisition from the world market has steeply declined from the peak of 2002's US$2.2 billion to 2007's US$170 million. Since 90% of China's foreign arms deals come from Russia, this has raised global attention on the problems of Sino-Russo arms trade.

2. Expediency has dominated the bilateral arms business since trade began in 1991. Russia tried to rescue its defense industry with hardware sales while China saw foreign acquisition as a quick-fix measure to deal with security challenges.

3. Russia registered the largest post-USSR arms sale (US$7.5 bn) in 2007 with minimum Chinese contribution. This testifies that it has successfully found alternative markets. Moreover, its rising oil income has lowered the need for hard currency through discount sales to China.

4. Russia also feels that it can afford to shift its preoccupation with commercial gains from arms trade to a more comprehensive consideration on national security. The worry of a potential Sino-Russo rivalry is behind Moscow's rejection of the People's Liberation Army's (PLA) demand for cutting edge technology.

5. Russia's attempt to control China's shopping list led to the latter's cancellation of negotiations. Conversely Beijing's demand for technological transfers with hardware sales undermines Russia's basic interests.

6. China's protracted technological accumulation has enabled it to develop sophisticated weaponry, thus reducing its dependence on Russia. Foreign acquisition in large quantities may have become a thing of the past.

7. After years of equipping its elite units with advanced Russian weapons the PLA has basically completed the mission of establishing a core force capable

of fighting an intensive regional high-tech war. Foreign procurement is no longer urgently required.

8. Russian arms could not meet the PLA's transformation need to shift from mechanization (hardware upgrading) to informatization (enhancing network-centric warfare capabilities). This exposes limits of Russian weaponry that is good at the former but not good enough at the latter.

9. The quality of Russian arms often falls far below China's expectation. For instance, the life span of Russian aircraft engines is much shorter than those from the West and delivery has often been delayed.

10. As the danger of a Taiwan crisis subsides, the PLA has once again freed itself from pressure of "an eminent war" (the previous one being Sino-Soviet confrontation). It now reorients its modernization efforts in the direction of generational transformation, a departure from adding emergency weaponry which is at risk of fast becoming obsolete.

11. It is too early to predict if the current sluggish Sino-Russo arms trade is a hiccup or a pattern of future development. Though China still needs Russian arms in key defense areas, it has adopted new approaches to obtaining it, such as being more selective in choosing what to procure and in what sequence.

12. Clearly both countries value their arms business. Politically this has become a symbol of the Sino-Russo strategic partnership, something Beijing cherishes in offsetting Western pressure. Technologically, it shows that China's military Research and Development (R&D) and innovative capability remains weak.

13. However, the Chinese shopping list will progressively be shortened along with that of quantity. The current pattern of one-way arms transfer to China is expected to gradually change to multiple ways of cooperation, including joint R&D.

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YOU Ji*

Foreign Acquisition: Addressing the Transitional Vacuum

1.1 China's international acquisition of arms has steeply declined in the last two years, from the recent peak of 2002's US$2.2 billion to 2007's US$170 million.[1] Since 90% of China's foreign arms purchase comes from Russia, this has raised world attention on the problems of Sino-Russo arms trade.[2] There are reasons why Sino-Russo arms trade has entered a chilly period.

1.2 China's arms and related Research & Development (R&D) policy has long been defined as a middle course: the bulk of arms has been replaced through generational change but the R&D targets technologies of one or two generations ahead. This strategy is not without its setbacks. Slow generational change may leave the PLA lagging further behind its rivals. The generational leap in R&D is risky, as success cannot be guaranteed due to China's weak technological foundation. [3]

1.3 Thus foreign arms purchase becomes a crucial measure for the PLA to bridge the gap between high-tech weapons deficiency and a long lead-time for indigenous development. Indeed in the early 1990s when the PLA started to import high-tech arms, it was at a dangerous transitional stage where the bulk

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1 US DoD annual report on the PLA submitted to the Congress in 2007 and in 2008.

2 *Huanqiushibao* (环球时报), 27 May 2008 and *ITRA-TASS*, 26 May 2008. In fact there has been virtually no major arms deal between the two countries since 2006.

3 You Ji, *The Armed Forces of China*, Sydney, London & New York: Allen & Unwin and I.B. Tauris, Chapter Four, 1999.

of its weaponry needed to be replaced and yet the new designs would take years to finalize and put into series production.

1.4 The US' show of force close to the Taiwan Strait in 1996 and the bombing of the Chinese embassy in 1999 added a military dimension to the already tense Sino-American relations. Taipei's push for *de jure* independence further highlighted Beijing's perceived threat of war. The urgency for advanced weapons was self-evident.

1.5 Russia was the only country from which China could obtain such weapons. Yet China is always wary of dependence on any foreign power for its military modernization. The economic cost is also prohibitive given the size of the PLA. Technologically, integrating the various foreign components into effective weapon systems is difficult. In short Beijing cannot count on overseas purchases to improve its overall capabilities.

1.6 So China saw Russian procurement as a quick fix from the very beginning, despite the importance it attaches to it.[4] The PLA's top priority then was to *have it* so it could learn to handle high-tech weaponry a decade earlier than if it had to develop it by itself.[5] For instance, the significance of the Su-27 deal lied less in obtaining modern aircraft than in the unprecedented opportunity of operating a third generation system.

1.7 In practical terms, Russian equipment serves several functions. First, it helps the PLA tackle its weakest link in war preparation (i.e., the air power). Second, it provides models for reverse technology and shortens the lag time for China's own R & D. The third function is that it uplifts the PLA's combat readiness, with its elite units equipped and trained with advanced weaponry.

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[4] Yao Yanjin and Liu Jingxian, *Study of Deng Xiaoping's military theory*, Beijing: the PLA Academy of Military Science Press, 1995, p. 159.

[5] Liu Huaqing, *Liu Huaqing Huiyilu (The memoirs of Liu Huqing)*, Beijing: PLA Publishing House, 2004.

1.8 This arrangement works well for the PLA as it was unable to upgrade the whole of its forces even though there was a rising need for war preparation. Selectively adding crucial foreign capabilities is the most cost-effective way to address the PLA's obsolesces. It gives China time to concentrate on building a powerful economic base for its future overall defense modernization.

Russian arms sales and PLA transformation

2.1 Russian arms have visibly contributed to PLA's transformation, especially to the PLA Air Force (PLAAF) and the PLA Navy (PLAN), the PLA's priority areas for modernization. These two services have received over 70% of Russian procurement. It is largely due to Russia's arms that they effected the initial change in force structure, deployment posture and training programs in the 1990s.

2.2 The PLAAF was typically an inland force for territorial defense before the Su-27s and Il-78 in-flight refueling tankers were procured. Except for the obsolete H-6s (a medium range bomber of 1960 Soviet technology), the radius of all its other aircraft was shorter than 500 kilometers. This means that China's air defense depth was extremely shallow with no platforms to deliver bunches beyond the land and maritime borders.[6]

2.3 This defensive posture is completely out of step with the age of information warfare. In times of war the enemy's aircraft can approach China's key political and military targets without worrying too much about being intercepted from a distance because China's jet fighters could only engage their counterparts close to home airports.

2.4 The Su-27s and S-30s substantially extend the PLAAF's engagement range to 1000 km. Their long range missiles give the PLAAF's first beyond horizon combat capabilities. The Russian aircraft helped the PLAAF realize its force restructuring (creating a force for both defensive and offensive air campaigns

[6] You Ji, "Adding Offensive Teeth to the PLA Air Force", *Issues & Studies*, Vol. 35, no. 2, March/April, 1999.

攻守兼备型空军).[7] This allows it to lay its doctrinal emphasis on mounting "extra-territorial attacks". Now China has the largest number of third generation combat aircraft in Asia, thanks to its 250 plus Russian planes.

2.5 The same can be said of the PLAN whose 1987 blue water strategy remained just a set of concepts without real capabilities. The PLAN's real transformation as an ocean-going force started with Sovremmemy destroyers and Kilo submarines that allow it to engage enemies beyond the coast. The navy becomes a true blue water power when it possesses carrier battle groups. To this end it has to learn from Russian carrier technology and to buy Russian carrier aircraft, such as Su-33s.[8]

2.6 The PLAN has positioned itself as a regional navy with beyond-region power projection capabilities (具有远程投制能力的地区海军).[9] To achieve this objective, it has to first change its light structure by forming a few task fleets capable of operating beyond the first island chain in the West Pacific. Sovremmemys (9,000 tons) will be core components for the flotillas.

2.7 China bought Sovremmemy not just for its supersonic anti-ship missiles (designed to strike US aircraft carriers) but for learning how to handle a large multi-purpose warship. The destroyer was the first PLAN warship with area air-defense missiles, integrated C4I and radar systems, and advanced anti-submarine warfare facilities. She was both an emergency capability against rising war menace and a training tool for the PLAN to acquire basic skills in managing its indigenous heavy destroyers in the future.

2.8 The quiet Kilo submarines serve similar dual purposes. It poses realistic threats to large ships in the West Pacific. Deploying just eight of them in

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[7] Liu Guangzhi, "Air-space War – the Strategic Goal of the PLAAF Transformation", *Military Art*, no. 9, 2003, p. 49.

[8] Ian Story and You Ji, "China's Aircraft Carrier Ambitions: Seeking Truth from Rumours", *The Naval War College Review*, Vol. LVII, No. 1, Winter 2003.

[9] Liu Yijian, *The command of sea and the strategic employment of naval forces*, Beijing: The PLA National Defence University Press, 2004, p. 233.

waters east to Taiwan is effective in blockading Taiwan's shipping lines. The deterrence value is very high.[10] The Kilo technology also helps the PLAN to manage its new 039 submarines, especially in terms of mastering AIP systems.

2.9 Indeed Russian technology ushered the PLA into the high-tech military world at least 1.5 decade earlier than otherwise the case. This has paved the way for the PLA to enter the IT age at an accelerated pace.

Arms Trade and Sino-Russo Relations

3.1 China and Russia entertained different goals for the arms business when the trade began in 1992. Beijing was concerned about Yeltin's pro-western policy. The Cold War mentality still influenced Moscow that saw China as an adversary. There was virtually no shared political and ideological foundation for military cooperation. Yet a solid bed-fellowship did emerge owing to their converged strategic interests.[11]

3.2 Russian aid was a windfall for China amidst western arms embargo. For Yeltin the new Chinese market was also a windfall for Russian defense industry (RDI) that operated at 10% of its capacity in 1993 due to drying domestic orders. Overseas orders disappeared. Most firms faced bankruptcy. China's monetary transfusion was essential for their survival. In the 1990s China provided RDI with half of its defense sales income.[12]

3.3 China's arms purchase played a key role in Russia's program of *converting defense production into civilian production through arms sales*. The RDI's success encouraged it to set export as a priority for recovery. This resulted in

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[10] Liao Wenzhong, "System integration and upgrading combat capabilities", in Chong-Pin Lin (ed.), *Strategizing the Military Stance of the Taiwan Strait*, Taipei: The Student Publishing bureau, 2002,

[11] Rajan Menon, "The Strategic Convergence between Russia and China", *Survival*, Vol. 39, no. 2, 1997.

[12] *ITRA-TASS*, 7 December 1993. *Russia's motive to sell arms to China*. See Stephen Blank, *The Dynamics of Russian Weapons Sales to China*, US Army War College, 1997.

its sales of US$7.5 billion in 2007, reaching its average annual sales of the USSR era.[13]

3.4 Apparently the arms trade substantiates and consolidates the overall bilateral relations. Through defense cooperation Moscow has gained influence in regional affairs. For instance, fanning a competition for arms between China and India, Russia has placed itself in a favorable position in the tripartite interaction. Russia has so far only sold its second line of equipment to China. In contrast Moscow has been a lot more accommodating to India's requests for more sophisticated hardware.[14]

3.5 Importantly, as the sole supplier of advanced weaponry, Russia's influence on the PLA cannot be underestimated, as proven by China's fear of Russia controlling supply of parts, one of the reasons why Beijing insisted on assembling Su-27SK by itself. During the Wenchuan earthquake rescue operations, the lack of parts hampered the flights of several Il-76 transports, prompting calls for speeding the "large airplane project".

3.6 China's dependence is not confined to hardware. Every year the PLA sends up to 800 officers to Russia to study military science and learn how to operate the arms it has bought. A good example is the training of the *Shenzhou* personnel. This may have fostered personal affinity of PLA commanders with their Russian counterparts. Both Generals Liu Huaqing and Cao Gangchun are strong advocates of more Russian arms imports.[15] A Russian education has become a useful credential for promotion.

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[13] Nabi Abdullav, "Russia Sets Post-Soviet Arms Sale Record", *Defense News*, 19 February 2008.

[14] For instance, Russia refused China's request for Su-30MK2, and was only willing to provide a lower type Su-30. However, Moscow was forthcoming with India's request for Su-30MK2. James Bursert, "China copies Russian ship-building technology", *Signal*, no. 6, 2008, translated and published by *Junshiwenzai* (Military Digest), no. 7 2008, p. 12.

[15] Liu Huaqing, 2004, pp. 590-599.

Barriers to the Sino-Russo Arms Trade

4.1 Though both sides attach much importance to the arms trade, problems never failed to surface. Dichotomy in objectives creates constant challenges. In 2007 Russia's arms sales climbed to a post-USSR peak with minimum Chinese contribution. This indicates two significant developmental trends in Sino-Russo arms trade.

4.2 Firstly, Russia has successfully found alternative markets that can sufficiently compensate for the loss of Chinese orders. Secondly, this shows that although still troubled by many problems the RDI has basically returned to normalcy. Moreover, with handsome oil income Russia's need for hard currency has become less urgent. It is in a position to bargain for higher arms prices than Beijing's willingness to pay.

4.3 Russia's economic recovery has shifted its preoccupation with commercial gains from arms trade to a more comprehensive consideration for national security. The "China threat" perception has never failed to influence Moscow's arms sales to China.[16] For instance, Russia's Su-27 sales in the early 1990s were conditioned on Beijing's promise not to deploy the aircraft north of the Yellow River.[17]

4.4 Russia's control over China's shopping list has deeply frustrated the buyer and this has been a key reason for the sharp decline in bilateral arms trade. The problem of discrepancy in weapons selection can be traced to 1992. Since then Russia's worry of a potential Sino-Russo rivalry has been channeled into two arms sales restrictions: 1) selling hardware rather than transferring cutting edge technology; 2) selling the weapons that Russia has had an upgraded model.

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[16] Paradorn Rangsimaporn, "Russia's debate on military-technological cooperation with China", *Asian Survey*, May/June 2006.

[17] This policy was changed only in the new century, as China deployed J-11B (the Su-27s assembled in Shenyang under license).

4.5 Russia sees this control as reasonable. The transfer of technology will help China's catch-up strategy and threaten its own national security if the two countries are in animosity. The technological transfer may also lead to China using it for export, thus undermining Russia's share in global arms trade. However, this Russian control is an obstacle to sustained growth in bilateral arms trade.[18]

4.6 Thirdly, on China's part its ability to develop high-tech weaponry has reached a new height with years of technological accumulation. This has eased its thirst for Russian arms. For instance, China has developed computer aided high precision machines capable of making propulsion blades for quiet submarines. As a result the PLA may not buy additional Kilos. And the series production of the J-10s (a 3.5 generation multiple purpose aircraft) will gradually meet the PLA's need for tactical combat aircraft.

4.7 After years of equipping its elite units with advanced Russian weapons the PLA has basically completed the mission of establishing a core force to fight an intensive limited regional high-tech war, the only perceived form of war for the PLA in the years to come. Beijing can now afford to slow down in its foreign acquisition.

4.8 The hardware-driven Russian export does not meet PLA's shift from mechanization (hardware upgrade) to informatization (network-centric warfare capabilities). This exposes limitations of Russian arms that are good at the former but not the latter.[19]

4.9 The quality of Russian arms falls far below China's expectation. For instance, the life span of aircraft engines is much below Western standards. The rate of recall is high in regard to Russian aircraft and warships. For instance, the

[18] One typical example was Russia's initial refusal to sell RD-93 aircraft engines to China that uses the engine in its FC-1 fighter-bomber earmarked for export to Pakistan. Russia changed its mind only after China pointed out that this rejection would threaten the overall bilateral arms trade.

[19] The PLA Air Force conducted a combat exercise using a J-10 equipped with indigenous avionics against a Su-27. J-10 proved to be superior based on key criteria such as finding the enemy earlier, engaging it from a longer distance and achieving the kill with more accuracy.

Chinese discovered that the Russians used many second hand parts to build the Sovremmemy destroyers, and delivery was often postponed.

4.10 With the danger of Taiwan independence subsiding, the PLA has freed itself from the pressure of "an eminent war" (the previous one being Sino-Soviet confrontation). It can once again reorient its modernization in the direction of generational transformation, a departure from adding quick-fix equipment that may become obsolete quickly.[20]

A Future Trend Assessment

5.1 It is too early to predict if the current sluggish Sino-Russo arms trade is a hiccup or a pattern of future development. If one looks at the sources of Russia's large arms orders in recent years, i.e., aircraft sales to Venezuela and Algeria, they appear to be one-off deals. Eventually it may have to come back to the Chinese market, by which time the Chinese may play an entirely different game with the Russians.

5.2 Some analysts claim that it is a buyer's market for the Sino-Russo arms trade.[21] Not exactly so, as seen from the fact that Russia achieved US$7.5 bn sales in 2007 with little Chinese contribution. Others argue that the Chinese arms market has become saturated.[22] Again, that is not correct. China still needs Russian weaponry, although it may adopt new approaches to obtaining it.

5.3 There are new signs of interaction between the two states to pursue arms business. Firstly, the PLA will be more selective in identifying and buying key

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[20] An important consideration for the PLA to purchase Russia's strategic bombers was to employ them in sea battles east of the Taiwan island where the PLAN fleets would have weak air cover. Now that the prospects of a war campaign are virtually non-existent, China can afford not to acquire this obsolete aircraft but to wait for its own large aircraft project to deliver the indigenous strategic bombers in the third decade of the century.

[21] Ming-yen Tsai, "Russian-Chinese military ties: Development and Implications", *Journal of Russia Studies*, no. 5, 2005, p. 1.

[22] *Kommersant* (a Russian defense newspaper), 27 May 2008.

and urgent capabilities, capabilities it does not have now and cannot develop in the near future. This alters the past practice of comprehensively acquiring Russian equipment. The PLA will be more careful in choosing what to have and in what sequence.

5.4 Secondly, China tries to change the nature of the bilateral arms business, namely from a one-way direction of "you sell and we take" to a two-way cooperation with a calculated emphasis on technological transfers. The two countries have already inked the deals to jointly develop micro-electronic military facilities and embark on new aerospace research, i.e., the Mars program.

5.5 Thirdly, China will import high-tech military technologies that will not be exclusively for the purpose of war preparation but also for civilian conversion, such as the dual use technologies for the space industries.

5.6 There is still a large potential for long-term Sino-Russo arms business, not as predicted by the latest SIPRI report that China strives to be independent of Russian arms in a decade.[23] This is because China is still in need of a number of weapons that would affect trade for more than a decade.

5.7 The Su-33s carrier aircraft. Beijing's political leadership vetoed the Navy's carrier proposal in the late 1990s. However, this was reverted in the new century where there were many official confirmations of such a project. Among the challenges to the project is carrier aircraft that China cannot develop by itself, at least for now.[24] Therefore, the procurement for the Su-33s is inevitable.[25] If Beijing gives the green light to the carrier project, the Navy

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[23] Annual Report on World Arms Trade by the Stockholm International Peace Research Institute, March 2008.

[24] Although the design of the J-10 leaves room for carrier aircraft development, it would take a long time to materialize. And it would still be a relatively light type of jet fighter with limited capabilities.

[25] *Jane Defense Weekly*, 28 October 2008. It was reported that the two militaries are close to ending the negotiation on this deal, with deliveries of 50 planes worth US$2.5 bn in the next decade.

must have at least two of them to meet the minimum operational requirement. Logically four dozens of the Su-33s would be required.

5.8 Il-76 Transport planes. China's "large aircraft project" would not yield real results at least till 2025. The Wenchun earthquake revealed how weak China's strategic lift capabilities were. This played a part in the renegotiation of the cancelled deal between China and Russia for providing 38 Il-76 in the next decade or so.[26] Even if China is able to produce large aircraft, it is unlikely that it could meet the domestic demand any time soon. Therefore, it may be a foregone conclusion that China will continue to buy Russia's large transport aircraft in the foreseeable future, unless the Western embargo is lifted.

5.9 Helicopters for military and civilian use. The Wenchun earthquake also revealed how inadequate the number of China's helicopters was. Similar to the large aircraft project, China's helicopter R&D capability is very weak. This means that China will continue to import helicopters from overseas and Russia would be the primary supplier, especially in the military front. If the PLA's group armies have at least one helicopter regiment, there is a demand for a minimum of 330 helicopters to equip 10 regiments in the Army, not to mention the requests from other services.[27] The demand from the civilian sector is even bigger.

5.10 Clearly both countries value their arms business. At the political level it has become a symbol of the Sino-Russo strategic partnership, something Beijing cherishes when under western pressure. Technologically, China still has a long way to go before it could catch up with the West. Therefore, Russian arms serve as a transitional bridge.

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[26] In 2005 China signed a deal with Russia to buy 38 Il-38 at a cost of US$1.5 bn but Russia later informed China that it had facility and labor shortage so it could not fulfill the contract.

[27] The PLA's Chengdu helicopter's maintenance factory will be upgraded to that of a helicopter factory. It will assemble Russia's M-171helicopters in sizeable quantities and this deal will be another Russian transfer of assembly right after the Su-27SK (J-11B) in the early 1990s. *Central News Agency*, 1 October 2008.

5.11 Yet the Chinese shopping list will progressively be shortened and the quantity reduced, as China gradually improves its own defense technology. The current pattern of one-way arms transfer to China will gradually change to one of joint research and development. Sino-Russo military cooperation is expected to continue, albeit at a zig-zag course.

Appendix

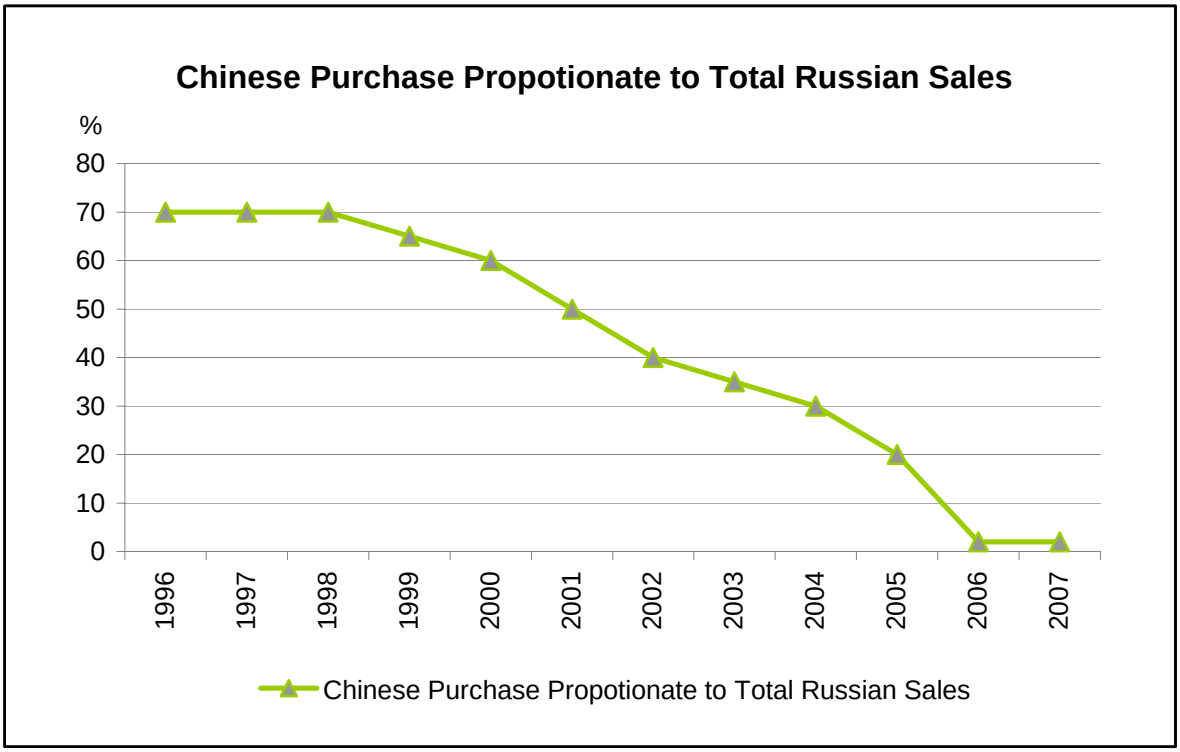

Table 1 Air Defense Items

Model	Quantity	Year
S-300PMU	4	1993
S-300PMU-1	4	2002
S-300PMU-2	8	2004
Tor-M1	27	1996-1999

Table 2 Air Force Items			
Items	**Nature**	**Quantity**	**Year**
Su-27SK	Sales	52	1993-97
Su-27SK	Assemble Under License	Up to 120	1995
SU-30	Sales	38	2002
A-50 AWACs	Sales	4	2004
IL-76	Sales	10	1992-93
IL-78	Sales	4	to 2005
AL-3IFN (Engines for J-10)	Sales	100	to 2004
RD-93 (Engines for FC-1)	Sales	100	2004
Helicopters (Various Kinds)	Sales	Total Number unavailable	2008

Table 3 Naval Sales Items		
Items	**Quantity/Nature**	**Year**
Sovremenny	4 (3 delivered, 1 more to be delivered soon)	1996 (2), 2002 (2)
Kilo Submarine 887	2	1995
Kilo Submarine 636	10 (2 delivered, 8 more ordered in 2002)	1999 (2002)
Anti-Submarine Helicopters	8	to 2008
Aircraft Carriers for "Scrap"	3 (Vovage being converted into a trainer carrier)	to 2005
Rubin Submarine Design Bureau	093 SSN and 094SSBN design assistance and "Sliencing" technology	through 1990s

Table 4 Aerospace Cooperation Programs		
Items	**Nature**	**Year**
Soyuz Capsule	Technological Assistance	1995 -
ICBMSS-18 Upper Stage Rocket Engine	Transfer of Sample Sales	1998
Gagarin Cosmonauts Training Centre	Training of PLA Astronauts	1997
Space Suits	Technological Assistance and Sample Sales	1999-

Table 5 Likely Key Capabilities Acquisitions in the Future		
Items	**Quantity**	**Purpose**
IL-76	38	Enhancing the Strategic Lift Capability
IL-78	8	Extending Operational Radius for the PLAAF
M-26TC	N/A	The world's heaviest lift helicopter to fill the need for Disaster/Fast Response Relief Capability
M-Series	N/A	Enhancing Tactical Attack Capability of the PLA Group Armies
RD-93 Aircraft Engines	up to 350	For equipping FC-1 for export, E.g. Parkistan, and Southeast Asian Nations
Oscar SSN	N/A	Capability to strike Aircraft Carrier from a long distance