

1-1-2010

## **Military Innovation in Russia and Japan during the Interwar Years: A Relevant Case Study in Strategic Analysis**

Leonard Lira

*San Jose State University*, [leonard.lira@sjsu.edu](mailto:leonard.lira@sjsu.edu)

Follow this and additional works at: [https://scholarworks.sjsu.edu/pols\\_pub](https://scholarworks.sjsu.edu/pols_pub)



Part of the [Military and Veterans Studies Commons](#)

---

### **Recommended Citation**

Leonard Lira. "Military Innovation in Russia and Japan during the Interwar Years: A Relevant Case Study in Strategic Analysis" *Strategos* (2010).

This Article is brought to you for free and open access by the Political Science at SJSU ScholarWorks. It has been accepted for inclusion in Faculty Publications by an authorized administrator of SJSU ScholarWorks. For more information, please contact [scholarworks@sjsu.edu](mailto:scholarworks@sjsu.edu).

# Military Innovation in Russia and Japan during the Interwar Years: A Relevant Case Study in Strategic Analysis<sup>1</sup>

By  
Leonard L. Lira

[leonard.lira@us.army.mil](mailto:leonard.lira@us.army.mil)

Paper published in the Journal of the United States Military Strategist Association, *Strategos*, Volume II, Issue I (Spring 2010)

## Abstract

*This article looks at military innovation through a political, social, and economic lens. Contrasting Japan and Russia in the interwar years as case study, it demonstrates the importance of political, social, and economic variables as the critical determinants. This begs the question of how these factors affect U.S. military innovation in the coming years.*

Scholars often attribute revolutions in military affairs solely to either technological or human factors. However, other research shows that change is never the result of one main contributing factor alone, regardless of at what level that change occurs. For example, mechanized warfare changed the nature of combat in that the human was no longer central or exclusively instrumental in winning battles. In its advent, mechanized warfare was the employment of the modern mobile attack and defensive tactics that depended upon machines. Specifically this meant the tank and armored vehicles with support and supply from motorized columns and aircraft<sup>2</sup>. It is easy to assume that the driving factor for this change was the onset of industrial technology. However, a major lesson drawn from analyzing the development of mechanized warfare from the British, American, and German perspectives during the inter-world war period shows that it occurred more so as a result of political and social factors. Williamson Murray confirms this in his essay, "Military Innovation in the Interwar Period," when he states that "personalities, intellectual trends, societal influences, and the position of military organizations in society all affected innovation and adaptation to new technologies."<sup>3</sup> Further analysis of his examples indicates that economic factors also played a role. If this theory of change in the development of mechanized warfare is valid for these three countries, then the same factors should apply in other settings of military change as well.

Murray's hypothesis can be confirmed by examining the combination of political, social, and economic factors in Japan and Russia which determined the development

of mechanized warfare as an operational concept for those two countries during the inter-world war period. These factors set the conditions for successful innovation in mechanized warfare for Russia, but these same factors made it very difficult for Japan to successfully adapt mechanization.

The impetus of national security setting for adopting mechanized warfare within Russia and Japan were at polar ends of the extreme. For example, during the inter-war period the political and military leaders of Japan believed that the geography in the potential areas of operation that it might engage in- the Pacific Islands, Southeast Asia, China and Manchuria-provided little scope for mechanized warfare, especially since their potential opponents in those areas (Americans, British, Dutch and Chinese) in 1941-42 possessed few or no tank forces at the time that would block Japan's expansion.<sup>4</sup> Although the Japanese saw Russia as a potential land threat, they failed to take into account the rise of the Russian mechanized forces as a specific threat because the Imperial Japanese Army (IJA) had been able to defeat them earlier in 1905. Instead, the IJA saw control of the Asian mainland as an objective with a more likely and weaker Chinese adversary. Further, Japan saw that the major threats to its future intentions of expansion in the South East Asia were the British and American Navies.<sup>5</sup> Therefore, Japan's military divided in opinion on which strategy to adopt. Hence, they presented their political leaders with two conflicting options: a northern strategy focused on China, which the Army endorsed; and a second southern strategy focused on the Western Pacific, which the Navy endorsed.

The Japanese government compromised by developing a national defense plan that accommodated both "pursuing security on the East Asian continent for the Army

and guaranteeing security in the west Pacific for the Navy.”<sup>6</sup> This resulted in a decreased need for the mechanization of Japanese land forces since the southern strategy required focusing the nation’s limited resources on maritime equipment.

Industrialization and mechanization of the capitalist countries to the west and to the east defined Russia’s national strategic setting. In addition, the Russians had already learned valuable lessons from their early defeats to more modern armies. For Lieutenant Colonel Aleksandr A. Neznamov, the Russian defeats in the Far East had one basic cause: "We did not understand modern war."<sup>7</sup> To avoid defeat in future wars, many leading political and military leaders by 1927 began to advocate total mechanization. To stay on par with possible future enemies Russia began a program of “reactive innovation” to catch up with those capitalistic and industrial nations’ armies that appeared to be ahead in their mechanization development.<sup>8</sup> Along with the national security setting, the civil-military relationship was another strong political influence on the adoption of mechanization in each nation.

As Murray pointed out in his essay, innovation relies partly on the position of military groups in their society. As such, the Japanese Army and Navy were initially on par with the political elite in Japanese society. In fact, Emperor Hirohito reportedly shared power with the military and the Diet with regard to military and national security decisions and he shared his audiences from both the Navy and the Army equally.<sup>9</sup> However, as the Chinese campaign began to put the northern strategy in a quagmire, the expansionist elements of the Navy began to gain greater sway in implementing the southern strategy, which required the application of more resources to naval and air power. This usurped the political will to support innovations like mechanization in the

Japanese Army. As realization that Japan's national resources could not support the expansionist designs of both the Army and the Navy and the atrocities of the IJA in mainland China and Korea became known, the political influence of the Japanese Army began to dwindle.<sup>10</sup> With the national defense plan giving priority to the Navy's southern strategy, the IJA found itself in no position to push for any innovations of its forces.

In Russia, the relationship of the Red Army with the civilian leadership and Stalin was mutually beneficial at first. Civilian involvement did not prevent innovation, and in some cases helped it. Similar to the IJA, the Russian Red Army had to convince its civilian leadership, the communist party, and Stalin, to provide resources to feed its innovation attempts. However, unlike the second tier position that the IJA goals held in the political climate of Japan, the Red Army's goals were seen by the civilian leadership to coincide with the nation's overall goals.<sup>11</sup> In fact, Stalin, who saw all government agencies as organs of the party, viewed the technological progress of the Red Army as essential for the progress of Russia into a modern technologically advanced state. Of course, this mutually beneficial relationship between the civilians and the military was conducive to the adoption of mechanization in the army.

By analyzing the political factors of the national security strategy and the civil-military relationship in both countries, one can conclude that the right set of political factors existed in Russia, and that they were inversely sparse in Japan. The budgetary goals and the relevance of military thought to political decisions in Japan contributed to a lack of mechanization in the Japanese Army. On the other hand, the political goals of both the civilian and military leadership in Russia greatly contributed to the mechanization of the Red Army. Closely related to these political factors, the social

factors of military culture and the availability of key innovators in each society had an equal effect on the adoption of the mechanized innovations.

In addition to the unsupportive political setting toward innovation, the IJA itself appeared to be against innovation. This fact did not stem from a lack of the Japanese ability to grasp the new modern way of waging war, or because the “mechanical mind [had] not yet evolutionized in Japan,” as reported by one Western intelligence officer and other military commentators.<sup>12</sup> In fact, as early as the 1880s the popular Japanese philosopher Anane Nishi recognized the importance of technology and that all future armies would be based on mechanization.<sup>13</sup> However, two reasons seem relevant to the lack of enthusiasm in the Japanese Army for mechanization. First, there was no moral imperative of lessons learned from a “Western Front” presented to the Japanese military. Second, “devices such as tanks and periscopes seemed distinctly unheroic”.<sup>14</sup> As such, when mechanized and armored forces were finally adopted, Japanese soldiers held such a high disdain for the tools of mechanization that they failed to maintain their mechanized armaments and practically ran them into the ground. For example, all of the new tanks used in the Jehol campaign were inoperative in the first 36 hours due to a lack of maintenance.<sup>15</sup> Throughout the inter war period and into the Second World War, the main source of the Japanese military inspiration remained the soldier and the sword.<sup>16</sup>

Conversely, the Red Army was generally very open to the advances of technology and the development of mechanization that came with it. Sally Stoeker documents this fact clearly in her book, *Forging Stalin's Army*.<sup>17</sup> She observed that both the political and military leadership openly supported innovation in the Red Army by

allowing open debates about the benefits of technological advances and the best way for the army to benefit from them. Based on this, Stoeker asserts that military innovation was successful because the military culture of the Red Army, before the mid-1930s, permitted an “accurate assessment of the external threat, analysis of the proper response to military threats, and preparation for this response.”<sup>18</sup> While military culture presented an influential social factor in Russia and Japan, the existence of key actors of innovation had an equal influence on the adoption of mechanization.

To the detriment of innovation in the IJA, no clear visionary of innovation existed in the ranks of the Japanese military or in Japanese society. Instead of any key leaders in this respect, a “kaleidoscope of personal cliques and pressure groups” all vying for power were predominately present and served to dilute any true application of a mechanization policy.<sup>19</sup> Military leaders made political accommodations with the Japanese elites-industrialist, bureaucrats, and court officials- to achieve even the most modest and practical mechanized upgrades in the Army.<sup>20</sup>

Comparatively in Russia, a clear proponent of mechanization was present during the interwar period. Not only was Mikhail Nikolaevich Tukhachevsky a visionary of armored warfare, but he was also an articulate proponent of mechanization who seemed to convince Stalin into accepting the progressive transformation of the Red Army over the complaints of Politburo.<sup>21</sup> His gifted ability of articulation and his bureaucratic prowess in exploiting gaps between the Stalinist regime and Bolshevik elites significantly contributed to the mechanization of the Red Army.<sup>22</sup>

As demonstrated earlier, the Japanese military did not put much stock into mechanization warfare and thus failed to realize its importance until much later in the



Second World War. On the contrary, the Russian military and civilian leaders saw a direct link to the prosperity of the nation and the mechanization of its forces. Because of this, its culture was conducive to change and fostered an environment where key leaders of innovation could explain their vision of change and have a hope that the political elite of society would accept it. As strong as the determinants of political and social factors were, the economic factors of natural resources and the industrial revolution proved to be as deterministic, if not more.

The major variable that became integral to the successful innovation of mechanization focus in Russia or Japan were the economic factors of the availability of resources and the influence of the industrial revolution on both nations. For Japan, there was a scarcity of industrial resources. Further, its political leaders viewed industrialization as a means to preserve Japanese tradition, not supplant it. Conversely, Russia was the land of metal as it had ample access to natural resources to support industrialization and mechanization. It lacked, however, the technological expertise to convert those resources into the mechanized warfighting equipment that it required, and thus remained dependant on the import of equipment and technical experts from the more advanced industrial countries.<sup>23</sup>

Japan recognized early on the need for natural resources and its limited industrial capacity, which was in part, one reason it decided to weigh its main effort to the southern strategy of its national defense plan. It basically made an economic decision to choose naval and airpower over mechanized land forces.<sup>24</sup> Two other economic reasons contributed further to a dearth of mechanization in the Japanese Army. First, shipping capability was limited although it was strong early in the war. The

majority of resources brought over went into higher manufacturing priorities such as the Imperial Japanese Fleet and airplanes.<sup>25</sup> When the Japanese realized the need to put resources into mechanization, later into the Second World War, the shipping capability was widely decreased particularly after the battle of Midway.<sup>26</sup> This economic impact was easily discernable by the fact that for every one U.S. soldier, the U.S. Army had four tons of mechanized equipment. On the other hand, for every Japanese soldier, the IJA had two pounds.<sup>27</sup>

Second, industrialization was never meant to transform the Japanese culture or way of life, but to sustain it. In fact, Emperor Hirohito's advocacy of western scientific learning and constitutional monarchy was fundamental to the perpetuation of Japan's imperial line, its unique polity, and especially the preeminent position of his family and the imperial house in Japanese society.<sup>28</sup> Additionally, prior to the outbreak of total war, the industrial elites of Japanese business society, the "Zibatsu," were not enthusiastic about usurping the industrialization process for military gain. They were predominately internationalists and preferred to maintain the free market and private capitalists control over the Japanese economy. From their opinion, placing the Japanese's industrial economy on a war footing would hand too much control over to government forces and thus break what sustained the Japanese economy. They were very influential in ensuring the protection of the leading industrialized technologies of the nation and did not share them with the IJA. This all but assured that Japan would not have the technological capacity coming out of the inter-world war period to upgrade, or revolutionize her weapons to match those needed in the age of mechanized warfare.<sup>29</sup>

In comparison, Russia's political-economic leaders and Stalin tied the progress of the Soviet state directly to industrialization and the technological advancement of all parts of the Soviet state apparatus. Therefore, many political and military leaders could successfully argue that the Soviet economic and military goals coincided.

"Industrialization of the country connoted increased economic power and ipso facto a stronger military capability."<sup>30</sup> The mutual benefit of state progress with military innovation added to the early political and social factors present in Russia and assured the adoption of mechanized warfare in the Red Army during the inter-world war period.

Economically, Japan lacked the resources that Russia had to mechanize its forces. Japan saw industrialization as a way to preserve its imperial heritage, and thus did not see the benefit of mechanized warfare. Russia, however, used industrialization to capitalize on its bountiful resources and mechanize its forces. It did so primarily because it saw a direct link to the nation's overall standing and the army's ability to modernize. It was this precise combination of economic factors, along with the right combination of political and social factors discussed above that provided the impetus for the Russian Red Army to transform into a modern armored force capable of waging mechanized warfare. On the contrary, it was the lack of these key factors that caused Japan to fail at mechanizing its forces. Knowing that this formulation of factors was necessary to innovation begs the question of relevancy to both armies then and to present conditions of military innovations today.

What was the overall effect on both armies to wage modern war? The Imperial Japanese Army was initially a formidable force that, in concert with the Imperial Japanese Navy, took naval operational maneuver to new heights in the South Pacific.

Its soldiers were highly trained and disciplined. Initial engagements between allied soldiers and Japanese soldiers fell to the Japanese because of their high caliber. The Japanese did recognize the value of mechanized warfare for modern armies as demonstrated by their incorporation of Axis tank doctrine into their own. However, the Japanese soldiers in the units simply failed to use this doctrine as written with the limited mechanized capability that did exist in the IJA.<sup>31</sup> That failure was symptomatic of the lack of the right combinations of innovation factors in Japan. Eventually, IJA's failure to develop an operational concept of mechanized warfare led to uncoordinated attacks by infantry, artillery, tanks, and air strength in most of its battle engagements throughout the war.<sup>32</sup>

Ironically, at the polar extreme Russia's ability to adopt an operational concept based on mechanized warfare also failed to lead to direct successes on the battlefield. This occurred even though the doctrine provided the genius to later successful revolutionary concepts such as Airland battle in the U.S. Army. Under the tutelage of the Tukachevsky, the Red Army was able to adopt the twin themes of combined arms and mechanized forces. Dr. Jacob W. Kipp articulates these combined themes in an article he published for the Foreign Military Studies Office:

Tanks were to be used in mass, and mechanized formations, composed of tank, motorized infantry, and self-propelled guns were expected to strike deep into the enemy's rear, using their mobility to outflank and encircle enemy forces. Aviation formations, apart from independent air operations, were expected to act in close operational-tactical cooperation with combined arms formations...The employment of mechanized forces, made it possible to win the "battle for the flanks" through the application of maneuver.<sup>33</sup>

Unfortunately, the architects of this grand design never had the opportunity to witness it enacted, or to guide it into action. Tukhachevsky, along with much of the Soviet military

elite, perished in the Stalin's terroristic purge of the military. With the Red Army's visionary gone, the operational concept dwindled from doctrine to heresy. As a direct result of this and the lack of training in the new concept, the initial proving grounds of Russian mechanized warfare in the Spanish civil and Russo-Finish wars, prior to the WWII, proved disastrous, and the Soviet Union very nearly jettisoned mechanized warfare as an operational concept.<sup>34</sup> In fact, the Red Army's winter counter offensive against Germany during the Second World War relied heavily on infantry and cavalry formations instead of mechanized formations. Only through painful trial and error and hard gained experience did young officers of the Red Army to achieve what the prewar theory promised, but not until the final phases of the war.<sup>35</sup>

What is the "so what" insight that may be of value to military transformation today? The development of mechanized warfare as an operational concept in the Twentieth century could prove analogous to the development of information warfare as an operational concept in the Twenty-First century. A few current similarities serve to demonstrate this. The development of information technology following the information revolution is similar to the development of industrial technology following the industrial revolution. Much like the slowness of all nations to adopt a functional and successful operational concept based on this new way of waging battle-the British and Americans did not get mechanized warfare right the first time in WWI, and the Germans only got it half right in WWII- no relevant or functional operational concept surrounding information warfare has yet arisen and been successfully implemented by U.S. forces. In fact, the theory of information dominance, which gave rise to the quality of firsts in Army Doctrine – "see first, understand first, maneuver while out of contact first, and finish decisively

first” - and led to the operational concept of Rapid Decisive Operations failed dramatically in Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF).

Politically, like the view of industrialization from the perspective of the Soviet political society and Japanese business society during the inter-world war period, America’s elite (military, government, academic, and business, etc) see information-based technology as a benefit to the progress of the American state. However, the jury is still out as to whether or not the U.S. leaders, like the Russian leaders, see the national goal and the national military goals as coinciding and thus mutually beneficial. Or will the U.S. leaders hold the view, similar to the Japanese view prior to WW II, that it is a means to preserve the dominance of the American way of life still resonating from its by gone industrial history? Additionally, in America’s national strategic setting no competitor in the realm of information technology yet exists that can serve as a catalyst for America to develop an operational concept of information warfare. This is due in large part to America’s dominance as the world’s leader in information technology. However, that dominance does not equal control and the continued diffusion of information technology through the spread of globalization will allow other nations to rise to the stature of America in this regard sometime in the near future.

Socially, the American military culture is conducive to innovation that helps improve its ability to accomplish what it views as its core mission. Additionally, there exist individuals who have articulated a vision of change based on information technology, like retired Admiral Arthur K. Cebrowski from DOD’s Office of Force Transformation. The obstacle for the military though, is the dilemma of focusing its innovative powers toward technology-based changes to meet the future challenges of a

“near-competitor” or toward human-based changes to meet the current challenges of post combat stability operations and post-cold war peace operations. Both changes rely heavily on the information revolution to enhance information systems on the one hand, and cultural communications systems on the other. The second type of innovation in cultural communications, however, modifies the military’s core competency by adding the competing mission of peace operations to the requirement for combat operations. Whether the military’s culture is conducive enough to support this type of innovation appears to remain in question given the current argument known as the “COINdinita vs. Big War crowd” argument and characterized by debates between influential military thinkers such as COL Gian Gentile and John Nagl.<sup>36</sup>

Economically, America’s access to resources needed to implement information technology is rich but dwindling. America currently leads the world in research and development in this arena, but studies suggest that America’s greatest economic resources, its children, are falling fast behind other nations in math and science. Eventually, America’s resource of human capital will be eclipsed by other tech savvy nations and it could find itself lacking the very resource it needs to sustain its informational lead.

What a study of the determinants of mechanized warfare in Russia and Japan during the 20<sup>th</sup> century provides is a lens of analysis utilizing the factors that may lead to the successful development of informational warfare as an operational concept in the 21<sup>st</sup> century. As the examples of the similarities of the information revolution occurring today demonstrate, this type of analysis may indicate that it will succeed or fail given the

particular combination of political, social, and economic factors present in today's operating environment.

For that reason, this article applied the change theory using the variables of political, social, and economic factors to the Russian and Japanese setting during the interwar period, in order to confirm their utility predicting innovation in these two countries, as it appears to do, according to Murray, in Germany, America, and Britain. As in Murray's selected countries, successful innovation in Russia and Japan relied upon the political factors of a national security strategy that accounted for a mechanized threat and the civil-military relationship in the society to facilitate military change. Secondly, the social factors that were required were a military culture that was conducive to innovation, and the presence of key individuals who were articulate visionaries of innovation. Finally, the economic factors that were required during this period in Japan and Russia were access to natural resources to feed and sustain an army turned into a mechanized war machine, and compatibility between State economic goals- industrialization- and military goals-mechanization. As pointed out, Russia contained this combination of innovation factors and Japan did not. This is the reason the Red Army was eventually successful in adopting mechanization as an operational concept and why the Imperial Japanese Army was not, which eventually led to the IJA's inexistence after the Second World War.

Although this article looked horizontally in applying the change variables to other countries besides those initially posited by Murray but during the same time-period, it is plausible that these same change factors are applicable vertically in time as well. Therefore, it is reasonable to suppose that an analytical frame using political, social,



and economic variables will predict the success or failure of the emergence of any new innovative operational concepts of warfare, assuming that the same interwar debate will occur after OIF and OEF conclude. Current strategists should feel confident in using these variables as one method of conducting the current strategic analysis for today's force requirements. Applying a similar analysis to today's U.S. military's attempt to innovate may indicate its ability to succeed and meet its destiny, or fail and confront its fate.

## Select Bibliography

- Bozeck Gregory J. "The Soviet-Finnish War, 1939-140: Getting Doctrine Right." AMMS Monograph, School of Advanced Military Science, AY 92-93.
- Byas, Hugh. *Government by Assassination*. New York: A.A. Knopf, 1942. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=74009330>. Internet. Accessed 18 October 2005.
- Blumberg, Arnold. "Tanks of the Rising Sun," *World War II* 19:6 (1 October 2004, accessed 4 October 2005): 58, available from eLibrary, <http://elibrary.bigchalk.com/libweb/elib/do/document?;> Internet
- Chase, Stuart. *Men and Machines*. New York: The Macmillan Company, 1929. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=91248930>. Internet. Accessed 18 October 2005.
- Citino, Robert M. *Armored Forces: History and Sourcebook*. Westport, CT: Greenwood Press, 1994. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=27289710>. Internet. Accessed 18 October 2005.
- Columbia Encyclopedia, 6th ed., "mechanized warfare," accessed 13 September 2005, available from <http://www.encyclopedia.com/html/m1/mechaniz.asp>.
- Drea, Edward J. *In the Service of the Emperor: Essays on the Imperial Japanese Army*. Lincoln, NE: University of Nebraska Press, 1998. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=91972288>. Internet. Accessed 18 October 2005.
- Economic Problems of War*. Edited by George A. Steiner. New York: John Wiley & Sons, 1942. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=883107>. Internet. Accessed 18 October 2005.
- Edgerton, Robert B. *Warriors of the Rising Sun: A History of the Japanese Military*. Boulder, CO: Westview Press, 1997. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=59019480>. Internet. Accessed 18 October 2005.
- Farrell, Theo and Terry Terriff, eds. *The Sources of Military Change: Culture, Politics, Technology*. Boulder, CO: Lynne Rienner, 2002. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=105515632>. Internet. Accessed 18 October 2005.

- Frank, Willard C. and Philip S. Gillette, eds. *Soviet Military Doctrine from Lenin to Gorbachev, 1915-1991*. Westport, CT: Greenwood Press, 1992. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=64783881>. Internet. Accessed 18 October 2005.
- Harries, Meirion and Susie. *Soldiers of the Sun: The Rise and Fall of the Imperial Japanese Army*. New York: Random House, 1991.
- Hitler's Army: The Evolution and Structure of German Forces*. Conshohocken, PA: Combined Publishing, 2000. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=100925980>. Internet. Accessed 18 October 2005.
- Humphreys, Leonard A. *The Japanese Army in the 1920's*. Stanford, CA: Stanford University Press, 1995. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=43038621>. Internet. Accessed 18 October 2005.
- Kipp, Jacob W. "Mass, Mobility, and The Red Army's Road to Operational Art 1918-1936." Fort Leavenworth, KS: Foreign Military Studies Office Publications, 1988, (accessed 6 September 2005) available from FMSO, <http://fmso.leavenworth.army.mil/documents/redopart.htm>; Internet.
- McKercher, B. J. C., and Michael A. Hennessey, eds. *The Operational Art: Developments in the Theories of War*. Westport, CT: Praeger Publishers, 1996. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=15647033>. Internet. Accessed 18 October 2005.
- Miksche, F. O. *Atomic Weapons and Armies*. New York: Praeger, 1955. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=14922262>. Internet. Accessed 18 October 2005.
- Moulton, Harold G., Louis Marlio, and Brookings Institution. *The Control of Germany and Japan*. Washington, DC: The Brookings Institution, 1944. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=3759435>. Internet. Accessed 18 October 2005.
- Murray, Williamson. "Armored Warfare" In *Military Innovations in the Interwar Period*, Murray, and Millett, eds. New York: Cambridge Univ. Press, 1996.
- Nish, Ian. *Japanese Foreign Policy in the Interwar Period*. Westport, CT: Praeger, 2002. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=101333782>. Internet. Accessed 18 October 2005.

- O'Ballance, Edgar. *The Red Army: A Short History*. New York: Praeger, 1964.
- Odom, William O. *After the Trenches: The Transformation of U.S. Army Doctrine, 1918-1939*. 1st ed. College Station, TX: Texas A&M University Press, 1999. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=9498435>. Internet. Accessed 18 October 2005.
- Sowell, Thomas. *Conquests and Cultures: An International History*. 1st ed. New York: Basic Books, 1998. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=30536720>. Internet. Accessed 18 October 2005.
- Stoecker, Sally W. *Forging Stalin's Army: Marshal Tukhachevsky and the Politics of Military Innovation*. Boulder, CO: Westview Press, 1998. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=91461011>. Internet. Accessed 18 October 2005.
- U.S. War Department. *Japanese Tank and Antitank Warfare*. Washington, D.C.: GPO, 1945.
- Wetzler, Peter. *Hirohito and War: Imperial Tradition and Military Decision Making in Prewar Japan*. Honolulu: University of Hawaii Press, 1998. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=8997655>. Internet. Accessed 18 October 2005.
- Wilde, John C. De, David H. Popper, and Eunice Clark. *Handbook of the War*. Boston: Houghton Mifflin Company, 1939. Book on-line. Available from Questia, <http://www.questia.com/PM.qst?a=o&d=833635>. Internet. Accessed 18 October 2005.

## Endnotes

- 
- <sup>1</sup> The views expressed are those of the author and not necessarily of the Department of the Army, the U.S. Army's Command and General Staff College, or any other agency of the U.S. Government.
- <sup>2</sup> *Columbia Encyclopedia*, 6th ed., "mechanized warfare," accessed 13 September 2005, available from <http://www.encyclopedia.com/html/m1/mechaniz.asp>.
- <sup>3</sup> Williamson Murray, "Armored Warfare" *Military Innovations in the Interwar Period*, Murray and Millett, eds. (New York: Cambridge Univ. Press), 8.
- <sup>4</sup> Arnold Blumberg, "Tanks of the Rising Sun," *World War II* 19:6 (1 October 2004, accessed 4 October 2005): 58, available from eLibrary, <http://elibrary.bigchalk.com/libweb/elib/do/document?>; Internet
- <sup>5</sup> Meirion and Susie Harries, *Soldiers of the Sun: The Rise and Fall of the Imperial Japanese Army* (New York: Random House, 1991) 132.
- <sup>6</sup> Ian Nish, *Japanese Foreign Policy in the Interwar Period* [book on-line] (Westport, CT: Praeger, 2002, accessed 5 October 2005), 113; available from Questia, <http://www.questia.com/PM.qst?a=o&d=101333782>; Internet.
- <sup>7</sup> Willard C. Frank and Philip S. Gillette, eds., *Soviet Military Doctrine from Lenin to Gorbachev, 1915-1991* [book on-line] (Westport, CT: Greenwood Press, 1992, accessed 17 October 2005), 93; available from Questia, <http://www.questia.com/PM.qst?a=o&d=64783889>; Internet.
- <sup>8</sup> Sally W. Stoecker, *Forging Stalin's Army: Marshal Tukhachevsky and the Politics of Military Innovation* [book on-line] (Boulder, CO: Westview Press, 1998, accessed 5 October 2005), 18; available from Questia, <http://www.questia.com/PM.qst?a=o&d=91460995>; Internet.
- <sup>9</sup> Peter Wetzler, *Hirohito and War: Imperial Tradition and Military Decision Making in Prewar Japan* [book on-line] (Honolulu: University of Hawaii Press, 1998, accessed 17 October 2005), 7; available from Questia, <http://www.questia.com/PM.qst?a=o&d=8997597>; Internet.
- <sup>10</sup> Harries, 127-128.
- <sup>11</sup> Stoecker, 33.
- <sup>12</sup> Harries, 120, and see William O. Odom, *After the Trenches: The Transformation of U.S. Army Doctrine, 1918-1939*, 1st ed. [book on-line] (College Station, TX: Texas A&M University Press, 1999, accessed 17 October 2005), 187; available from Questia, <http://www.questia.com/PM.qst?a=o&d=9498433>; Internet.
- <sup>13</sup> Harries, 348.
- <sup>14</sup> *Ibid*, 120.
- <sup>15</sup> *Ibid*, 349.
- <sup>16</sup> Edward J. Drea, *In the Service of the Emperor: Essays on the Imperial Japanese Army* [book on-line] (Lincoln, NE: University of Nebraska Press, 1998, accessed 17 October 2005), 63; available from Questia, <http://www.questia.com/PM.qst?a=o&d=91972147>; Internet.
- <sup>17</sup> Stoecker, 10.
- <sup>18</sup> *Ibid*, 10.
- <sup>19</sup> Harries, 169.
- <sup>20</sup> *Ibid*, 147-148.
- <sup>21</sup> Stoecker, 135-168.
- <sup>22</sup> *Ibid*, 140.
- <sup>23</sup> *Ibid*, 31.
- <sup>24</sup> Robert B. Edgerton, *Warriors of the Rising Sun: A History of the Japanese Military* [book on-line] (Boulder, CO: Westview Press, 1997, accessed 18 October 2005), 240; available from Questia, <http://www.questia.com/PM.qst?a=o&d=59019676>; Internet
- <sup>25</sup> U.S. War Department, *Japanese Tank and Antitank Warfare* (Washington, D.C.: GPO, 1945) 86.
- <sup>26</sup> Harries, 352.
- <sup>27</sup> *Ibid*, 348.
- <sup>28</sup> Peter Wetzler, *Hirohito and War: Imperial Tradition and Military Decision Making in Prewar Japan* [book on-line] (Honolulu: University of Hawaii Press, 1998, accessed 18 October 2005), 11; available from Questia, <http://www.questia.com/PM.qst?a=o&d=8997601>; Internet.
- <sup>29</sup> Harries, 138.
- <sup>30</sup> Stoecker, 33-34.
- <sup>31</sup> *Japanese Tank and Antitank Warfare*, 103.

---

<sup>32</sup> Harries, 333.

<sup>33</sup> Jacob W. Kipp, *Mass, Mobility, and The Red Army's Road to Operational Art 1918-1936* (Fort Leavenworth, KS: Foreign Military Studies Office Publications, 1988, accessed 6 September 2005) available from FMSO, <http://fmso.leavwnworth.army.mil/documents/redopart.htm>; Internet.

<sup>34</sup> Edgar O'Ballance, *The Red Army: A Short History* (New York: Praeger, 1964) 132-134; and Gregory J. Bozeck, *The Soviet-Finnish War, 1939-140: Getting Doctrine Right* (AMMS Monograph, SAMS, AY 92-93)

<sup>35</sup> Kipp, <http://fmso.leavwnworth.army.mil/documents/redopart.htm>; Internet.

<sup>36</sup> Safranski, Mark. "The Post-COIN Era is Here" *Small Wars Journal* (25 January 2009, accessed 27 January 2009); available from <http://smallwarsjournal.com/blog/2010/01/the-postcoin-era-is-here/>. Internet.