

China's Strategic Assistance To North Korea's Nuclear Program

By Richard D. Fisher, Jr.

Introduction

On 15 April 2012, the Democratic People's Republic of Korea (DPRK), or North Korea, held a large military parade to celebrate the centennial of its founder, Kim Il Sung. Toward the end of the military portion of the parade newly elevated leader Kim Jong Un became excited as six new large ballistic missiles rolled by, identified by the parade announcer as the "KN-08."¹ However, what was quickly noticed by the active community of Chinese military-fan netizens was that the new missile was carried by a unique large 16-wheel transporter-erector-launcher (TEL) of Chinese origin. It was almost immediately identified as a product of the 9th Academy of the China Aerospace Science and Industry Corporation (CASIC), or the Sanjiang Space Wanshan Special Vehicle Co in Hubei, which makes the "WS" series of TELs that carry CASIC's family of ballistic missiles for the People's Liberation Army (PLA).



Happy Dictator: Moments before the April 15, 2012 appearance of the KN-08 missile before the viewing stand, newly elevated North Korean leader Kim Jong Un gave an approving glance.

The transfer of this TEL to North Korea raises the prospect that China has also transferred the technology for the three-stage KN-08 missile, as knowledge of the missile would be essential to make its TEL. CASIC has been involved in the transfer of large solid fuel rockets and their associated TELs to Pakistan, so there is the possibility of a direct Chinese tech transfer or a less probable indirect transfer from Pakistan. However, news briefs from Sanjiang's web page indicate it received an important export order for these large TEL vehicles in October 2010, and were perhaps delivered soon after May 2011. This was most likely an order for North Korea. There may have been other recent Chinese missile technology transfers to Pyongyang. In an

October 2010 parade North Korea revealed a new 4th generation surface-to-air missile (SAM) system that resembles aspects of China's HQ-9/FD-2000A SAM.

While China's motivations for so arming North Korea may range from a desire to pressure the United States to reduce its support for democratic Taiwan to a desire to perpetuate the Kim dynasty dictatorship, the stark fact is that China has brazenly assisted a North Korean missile program with the potential to deliver nuclear weapons as far as Alaska. There is little chance this missile technology transfer transpired without the approval of the highest levels of China's government. Furthermore, as it has decided to assist the nuclear delivery capability of a state that has repeatedly practiced state-sponsored terrorism and is a serial proliferator of missile technology, China is assisting a global nuclear threat. China's action also stands in direct contravention of 2006 and 2009 United Nations Security Council resolutions (#1718 and #1874) specifically forbidding the transfer of such technology to North Korea.²

Members of Congress, led by Representative Michael Turner, Chairman of the Strategic Forces Subcommittee of the House Armed Services Committee, have been quick to express concern and ask questions of the Obama Administration.³ Representative Turner's concern was prompted by an April 15 letter from the International Assessment and Strategy Center, which was attached with his April 17 letter to the Administration.⁴ Secretary of Defense Leon Panetta briefly acknowledged such Chinese assistance for North Korea in testimony before the Armed Services Committee on April 19, saying, "I'm sure there's been some help coming from China."⁵ However, it does not appear that the Administration is willing to consider the gravity of China's provocation or an appropriate response — even though former Secretary of Defense Robert Gates had warned in June 2011,

“With the continued development of long-range missiles and potentially a road-mobile intercontinental ballistic missile, and their continued development of nuclear weapons, North Korea is in the process of becoming a direct threat to the United States.”⁶

China's clear transfer of TEL and possible ICBM missile technology to North Korea is of sufficient gravity that it is now necessary for the United States and its allies to reevaluate many aspects of their relationship with China. This includes: participation in the Chinese-led Six-Party Talks with North Korea, ostensibly to curtail North Korea's nuclear ambitions; trade with China in advanced technology; and, maintaining the military capabilities necessary to dissuade and deter China and its soon-to-be nuclear-armed proxy states.

North Korea's Chinese TEL

While a modern mobile missile unit is comprised of a number of vehicles to transport, command and protect the missiles until their launch, it cannot complete its mission without a vehicle known as the transporter-erector-launcher or TEL. The TEL carries the missile to its launch point, elevates the missile to launch position, and contains the command and control systems necessary to receive targeting and launch command information. Most TELs are also designed to accept reloads in order to carry out multiple fire missions. As such, *it is necessary to design a TEL around the missile that it is intended to carry*. The TEL must be of sufficient size to carry the missile and have a vehicle suspension capable of properly cushioning the missile, especially

if it is intended to travel over unpaved roads. Failure to meet these needs, especially for a solid fueled missile, could result in cracks in the solid fuel motor that could precipitate premature destruction of the missile. Therefore it is no small matter for China to have transferred a TEL, especially one this large, to North Korea.

It is curious in that the days before and surrounding the April 15 parade which revealed the KN-08 missile, Chinese internet pages offered new data from the company in question that produced the TEL for North Korea, the 9th Academy of CASIC or the Sanjiang Space Wanshan Special Vehicle Co in Hubei.⁷ Such exposure was reminiscent of how Chinese authorities allowed a gradual internet-driven revelation of the Chengdu J-20 5th generation fighter in late 2010 and early 2011, and suggests this may have been a deliberate exposure. Sanjiang is one of two Chinese companies that make missile TELs. The other is the Tai'an Spaceflight Special Purpose Vehicle Corporation in Shandong,⁸ which also makes a large 16-wheel TEL used a new large PLA ICBM, sometimes called the DF-41. China supports similar redundancies throughout its military industrial complex and programs not selected for use by the PLA are often offered for export, which appears to be the case for the CASIC/Sanjiang 16-wheel TEL.

Similarities The carrier for the KN-08 missile is most similar to the WS2600 vehicle described in the CASIC/Sanjiang brochure. Focusing on the respective vehicle cabs, similarities include:

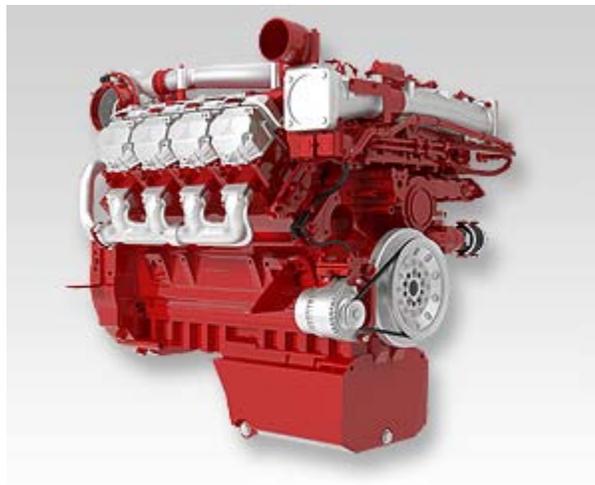
1. The same distinctive cab roofline dip for a missile.
2. The same windshield and windshield wiper configuration.
3. Almost identical radiator grill area below the windshield.
4. Almost identical road light configuration on the front bumper.
5. Almost identical side door and door handle configuration.
6. Almost identical initial steps to the cab.⁹



Family Resemblance: The CASIC/Sanjiang WS2600 (left) shows obvious similarities with the TEL of the North Korea KN-08 missile.

Foreign technology Brochure information posted on Chinese web sites indicate that the CASIC/Sanjiang WS2600 large vehicle is a slightly modified version of the WS51200 16-wheel vehicle. The latter is described as having a maximum weight of 122 tons and a payload capability of 80 tons. The WS2600 has advanced features, such as: a divided axle with differential gears to assist of road movement; a central tire inflation system; a hydro pneumatic suspension to handle sensitive payloads; and the ability to pivot wheels in the front and back to assist steering. The brochure posted on the FYJS page makes clear that Sanjiang has a close relationship with the Minsk Automobile Plant (MAZ) in Belarus, a pioneer in the design and manufacture of large vehicles for the transport of ballistic missiles. This relationship started in 1998, and technology transfers allowed Sanjiang to begin producing MAZ-based TELs in 2003. While the WS2600 can be considered a Chinese product it is clear that it has benefitted from MAZ TEL technology developed originally for large Soviet/Russian ICBMs.

It is also apparent that North Korea’s new TELs could be powered by American designed/Chinese manufactured or German manufactured high power diesel engines. One brochure states that the WS51200 is powered by the 700hp KTTA19-C700,¹⁰ which is a design of the U.S. Cummins engine company, manufactured in and widely available in China.¹¹ Another CASIC/Sanjiang brochure states the WS2600 is powered an “Imported high-power DEUTZ diesel engine.” This is a reference to the German Deutz AG company, another major global manufacturer of high power diesel engines. The Deutz TCD 16.0 V8 seems to have the power range needed for the WS2600.¹² The transmission of the WS51200 is identified as the ZF WSK440+16S251, a product of the German ZF Friedrichshafen AG company, which has many manufacturing facilities in China.



Choice of Engines: North Korea’s CASIC/Sanjiang TEL may be powered by a U.S. design Cummins high power diesel engine (left) or a German Deutz diesel engine (right).

Probable Sales Details The Chinese government has not disclosed the details of how a large TEL from one of its companies has come to carry a new North Korean ballistic missile. A lack of definitive disclosure has caused some to speculate that the TEL or its technology could have been transferred to North Korea as part of a “civilian” deal or that it could have been re-exported

from Pakistan.¹³ However, on April 16 Hong Kong's Phoenix TV web page had gathered new reports from CASIC web pages noting that on October 19, 2010 the 9th Academy had received a "first of its kind" 30 million Yuan (\$4.75 million) export order for "super heavy off road vehicles." The same report then cites a CASIC report from May 26, 2011 that a "WS51200 heavy off road truck was successfully delivered."¹⁴ Other Chinese sources have speculated the 30 million Yuan order was for five vehicles, or nearly \$1 million each, while another source speculated the order was for 50 million Yuan (\$7.92 million).¹⁵

Chinese Assistance For the KN-08 Missile?

While the origin of the KN-08's TEL was a shock, its actual missile is also a very troubling development. As a three-stage rocket it is the largest and most sophisticated military rocket produced by North Korea to date. While some are concluding that the actual missiles carried by the CASIC/Sanjiang TELs in the April 15 parade may be mock-ups, there is a larger question over whether this missile is now, or in the future will be, powered by liquid or solid fueled engines. Imagery of the KN-08 from the parade did not yield a full view of the nozzle section at the bottom of the first stage, which might provide important indicators. The type of fuel would have a bearing on the missile's range, which has been variously estimated as reaching up to 5,000 or 6,000 kilometers, the latter being sufficient to reach Anchorage, Alaska from the uppermost parts of North Korea. Liquid fuel might provide higher power leading to greater range, while lower weight solid fuel and a smaller warhead could also allow for longer range.



Solid or Liquid: A solid fueled missile of this size would represent a major North Korean advance in missile capability, one that likely has been a result of China's direct sale or transfer of technology, as with the missile's TEL.

A solid fuel rocket of this size however, would constitute a major advance for North Korean large rocket technology inasmuch as their best solid fueled rocket in the KN-06 short range ballistic missile. North Korea has no previous experience with multi-stage solid fueled rockets. On April 13 its three-stage Unha-3 liquid fueled space launch vehicle failed spectacularly, while the North is believed to have had a far better success rate with its single-stage liquid fueled missiles. A solid rocket motor on the KN-08 would allow for a rapid launch sequence, thereby enabling the missile to take full advantage of the concealment and mobility offered by the TEL to conduct surprise launch missions. A liquid fuel powered rocket would have to be elevated to

allow for fueling and thus be visible to sensors, as fueling would also take considerable time, increasing chances the missile could be attacked before launch.

If the KN-08 is indeed a new solid-fuel rocket, then there is a significant probability that it too is a direct sale or technology transfer from China, most likely again from CASIC. There is a precedent for this: CASIC was likely the main source for Pakistan's solid fuel rockets and their TELs. Pakistan's 360 km range Ghaznavi solid-fuel short-range ballistic missile is a direct copy of CASIC's DF-11 which equips several PLA Second Artillery brigades facing Taiwan. Pakistan's 750km range Shaheen, and its two-stage 2,500km range Shaheen-2, both solid fuel rockets, are also very likely CASIC products. CASIC may now be testing a new 4,000km range intermediate range ballistic missile using a shorter 12-wheel TEL, indicative of what may be a two-stage missile.¹⁶ This new IRBM could also form the basis for the slightly longer three-stage KN-08 on its 16-wheel TEL. Inasmuch as this new IRBM may not enter PLA service until 2015, that may help account for the possibility that the KN-08 missiles seen in the April 15 parade are mock-ups; CASIC may be busy finalizing the KN-08 missile.



CASIC Solid Precedent: CASIC's sale of solid fuel rocket technology to Pakistan is most clearly represented by the Ghaznavi, a direct copy of CASIC's DF-11 short range ballistic missile, as seen by the author at the 2004 IDEAS show in Karachi. Source: RD Fisher

Shortly after the February 2011 *Global Times* disclosure of CASIC's 4,000km range missile project, there was speculation on some Chinese web forums that it would form the basis for a longer range 5,000km range IRBM to succeed the 4,750 to 5,000km range liquid fueled DF-4 IRBM that entered Second Artillery service in about 1980, and which is nearly retired. While there was no way to confirm such a program at that time, the possibility that the KN-08 may be a CASIC project would offer the possibility that it may also be derivative of an additional PLA IRBM program to succeed the DF-4.



KN-08's Little Brother ?: This missile very likely is CASIC's new 4,000km range IRBM, which could also be the basis for the KN-08 and perhaps a new PLA IRBM to replace the old DF-4. It is curious how a KN-08 with two stages would cover 12 wheels of its TEL and just might be as long as the missile to the left.

Further Proliferation, New Global Threats

North Korea's obtaining a potential solid fueled ICBM is also great news for Iran and Pakistan, its main partners in both nuclear weapon and long-range missile development. Pyongyang apparently did not care that the world knew that Iranian engineers were on hand to observe the launch of the Unha-3 space launch vehicle.¹⁷ Some sources reported that Iranian missile technology was being used to improve the Unha-3, which failed anyway. Should North Korea actually gain the wherewithal to manufacture the KN-08 missile, it likely will sell that technology to Iran and Pakistan. For that matter, a failure by the international community to effectively sanction China's known sale of missile technology to North Korea could embolden Beijing to go ahead and sell enough elements of the KN-08—perhaps even using North Korea as a cut-out--to allow Iran and Pakistan to make their own mobile solid fueled ICBMs.

Thus the United States, its allies and India not only face a PLA strategic nuclear force that will grow in terms of the number of deployed warheads on ICBMs, IRBMs, MRBMs and perhaps cruise missiles -- and which also may benefit from an expanded ballistic missile defense system by the mid-2020s -- but they also face the prospect of China's network of nuclear proxies all having modern mobile solid-fueled ICBMs. Furthermore, if China's central role in the creation of this threat is not properly countered, it is possible that such a China-centered network of ICBM-armed proxies could be a reality before the end of this decade. A failure by the United States to exercise appropriate leadership will leave South Korea, Japan and Australia with few options but to advance their own nuclear deterrent capabilities. Japanese and ROK development of "space launch vehicles" means they are already well down this road. The longer the U.S. fails to confront a proliferating China, the greater the likelihood that it may have little choice but to support/enable the nuclear deterrents of its allies as the price for sustaining those relationships.

China would rather that the United States and its allies not take steps to defend their security; so, on April 19, Chinese Foreign Ministry spokesman Liu Weimin rejected reports of the TEL transfer to North Korea saying, "China consistently opposes the proliferation of weapons of mass destruction and their carriers."¹⁸ Contrary to the Foreign Ministry's denial, China's historic

proliferation behavior -- and the obvious facts of this latest sale to North Korea -- suggest that there was a direct sale of the CASIC/Sanjiang TELs to North Korea which required the approval of the highest levels of the Chinese government. It is also possible that China's highest government and military leaders profited personally from this sale of equipment to North Korea. In his memoirs, former Secretary of State James A. Baker recounted how he came to conclude that his efforts to convince Chinese leaders to halt their sale of missile technology to Pakistan had failed because China's leaders received a share of the profits from such sales.¹⁹

Since the revelation of the TEL transfer, a Special Panel of experts under the United Nations Security Council has been investigating whether China violated U.N. Security Council Resolution 1874, which prohibits the supply of any arms-related equipment to North Korea.²⁰ A report may be due by May.²¹

Ending 20 Years of Illusions

Since the early 1990s under the Administration of former President George H.W. Bush, the United States has regularly given China the benefit of countless doubts about its intentions and behavior, first in regard to Northeast Asia and then to the larger issue of proliferation of weapons of mass destruction. Having gained alarming insights into North Korea's nuclear weapon development intentions, President Bush, Sr. in part deferred to Chinese concerns about attempting to effectively confront Pyongyang. China's maneuvering also helped lead the Clinton Administration into the October 1994 "Agreed Framework" which attempted to arrest North Korea's plutonium-based nuclear weapons program. The folly of such agreements was revealed in 2002 when the George W Bush Administration disclosed that North Korea also had a uranium-based nuclear weapons program. It was the Bush Administration's rapid invasion and defeat of Iraq in 2003 which frightened Beijing into action, taking the unprecedented step of organizing the multi-lateral Six Party Talks which ostensibly sought to arrest North Korea's drive for nuclear weapons. The talks have droned on for a decade with no tangible results. Throughout this period China has been North Korea's major economic benefactor. It has regularly supplied diplomatic cover -- counseling negotiations whenever Pyongyang would provoke -- such as its nuclear tests in 2006 and 2009, or its March 26, 2010 sinking of the South Korean corvette *Cheonan*, killing 46 of its crew.

Perhaps the main reasons Washington, Seoul and Tokyo have persisted in this path were a belief in the viability of negotiations, a fear of the alternatives, and an assumption that China, as it has so often stated, really did not approve of North Korea's nuclear weapons program. The hope was that China, as evidenced by its leadership role in the Six Party Talks, could be relied upon to eventually apply effective pressures on Pyongyang. Unfortunately, some in the Obama Administration persist in giving Beijing the benefit of the doubt, recent events notwithstanding, telling the New York Times,

“We think this is poor Chinese performance in sanctions implementation, and not willful proliferation,” said the [White House] official, who spoke on the condition of anonymity because of the issue's diplomatic delicacy. “The Chinese system is so sprawling and poorly organized that they are not good at enforcing sanctions.”²²

The *Times* also reported, based on Administration sources, that China “sold only a chassis, not a complete vehicle. It might have been sold ostensibly for civilian purposes, like for use in mining. The firm most likely also sold the parts to a North Korean ‘cut out,’ a term that refers to a front company set up to mask the ultimate buyer.”²³ Not only does this anonymous White House official appear to seek to discount Secretary Panetta’s April 19 response to Congressman Turner, “I’m sure there’s been some help coming from China” -- but also ignores obvious questions. How would North Korea be able to modify such a complex vehicle from putatively designed for hauling logs or minerals, to one with the far more exacting requirements for carrying and launching missiles, without the assistance of the Chinese manufacturer? Would CASIC report twice on the sale of these vehicles on its own web page if it was engaged with a “front company” engaged in illegal activities, especially one from North Korea? And then there is the matter of highly-guarded PRC-DPRK border. How likely is that six vehicles the size of these TELs would pass this border without the active assistance, much less without the approval of both governments?²⁴ Finally, if the Administration was aware of North Korea’s efforts to build *mobile* ICBMs at least as early as Secretary Gates’ June 2011 disclosure, it stands to reason that it had over nine months and two U.S.-PRC presidential meetings to warn leaders in Beijing of “poor Chinese performance in sanctions implementation.” Yet, six Chinese-made TELs still carried a “missile” in North Korea’s April 15 parade.

So far the Obama Administration’s efforts to explain this incident fall short. It seems there is a high probability the Administration knew of the transfer of the Chinese TELs for nine months, at least from Secretary Gates’ June 2011 disclosure. So either the Administration tried to stop this traffic and Beijing went ahead anyway, or the Administration did nothing. In either case it has been ineffective against this most crucial challenge. Far from China being “not good at enforcing sanctions,” it is highly unlikely that a Chinese government capable of oppressive control over its citizens, and able to build space stations in low Earth orbit, simply “lost” six TELs the size of the WS2600 -- and is unaware of how multiple Chinese state-owned entities are deliberately expanding North Korea’s nuclear threat -- a supposed area of primary focus in Beijing. It is more probable that this is yet another case of U.S. dissembling, persisting in making excuses for China’s behavior in order to avoid a confrontation with Beijing – a classic arms control conceit. In any case, what it signals is an abject unwillingness to exercise the necessary leadership to defend the security interests of the United States, a message that will be heard loudly by America’s allies and friends, as well as her enemies.

It is now time to end the delusion of an emerging Chinese global power being a “responsible stakeholder.” It appears, with its brazen sale of TELs to North Korea, that even Beijing itself has grown tired of its deception efforts. China is most directly challenging freedom and stability on the Taiwan Strait, the South China Sea, and in the regions now threatened by the emerging Chinese-North Korean-Iranian-Pakistani network of nuclear missiles. China is building an expeditionary space, navy and air force that may be capable of significant global power projection early in the 2020s, to say nothing of its rampant cyberwar and espionage activities.²⁵

Leaving decades of comfortable but deadly delusions behind will require a comprehensive and wrenching Western re-evaluation of its commercial and technology relationships with China, as well as acknowledgement of the more robust military posture needed to deter and defeat both China and its nuclear proxies. The lesson for both the Administration and its critics is simple:

Time is quickly running out for both Administration and UN efforts to end North Korea's nuclear threat, and for any chance to effectively curtail the PRC's wider proliferation efforts, both in greater Asia and in the Middle East.

¹ The April 15 parade was broadcast on Chinese television: <http://video.sina.com.cn/p/news/w/v/2012-04-15/145161721961.html>

² . For the text of United Nations Security Council Resolution 1817 see, <http://www.un.org/News/Press/docs/2006/sc8853.doc.htm> For UNSC Resolution 1874, see, <http://www.un.org/News/Press/docs/2009/sc9679.doc.htm>

³ April 17, 2012 letter from Congressman Michael Turner to Secretary of State Hillary Clinton and Director of National Intelligence General James R. Clapper: [http://turner.house.gov/UploadedFiles/20120416 - MRT letter to SecState and DNI - North Korea and China.pdf.pdf](http://turner.house.gov/UploadedFiles/20120416_-_MRT_letter_to_SecState_and_DNI_-_North_Korea_and_China.pdf.pdf)

⁴ April 15 letter from the International Assessment and Strategy Center: <http://turner.house.gov/News/DocumentSingle.aspx?DocumentID=290614>

⁵ On April 19, 2012 Secretary Panetta made this acknowledgement in response to questions from Congressman Michael Turner: <http://turner.house.gov/News/DocumentSingle.aspx?DocumentID=291091>

⁶ Secretary Gates referred to North Korea building a "mobile" ICBM in a speech before the Tenth International Institute for Strategic Studies (IISS) Asia Security Summit, The Shangri-La Dialogue, Singapore, June 4, 2011, <http://www.iiss.org/conferences/the-shangri-la-dialogue/shangri-la-dialogue-2011/speeches/first-plenary-session/qa/>.

⁷ On April 10, 2012 a Sanjiang brochure was posted on the popular FYJS military issue forum: http://www.fyjs.cn/bbs/htm_data/26/1204/693839.html The Sanjiang company's web page: <http://www.wstech.com.cn/en/gyws.asp>

⁸ Tai'an company web page: <http://www.tasv.cn/hangtianen/index.htm>

⁹ Also noted in the April 15 letter to Congressman Michael Turner from the IASC, op-cit.

¹⁰ Performance specifications for the WS51200 that identify the KTTA19-C700 were posted on "The truth? China Aerospace's bulk exports of heavy vehicles (4)," *Phoenix TV Web Page*, posted on April 16, 2012: http://www.daqi.com/article/3283654_4.html

¹¹ This example from the Shanghai Stone Diesel Engine Co. is marketed on the Alibaba web page: http://stonediesel.en.alibaba.com/product/538606696-213263720/CUMMINS_KTTA19_C700_diesel_engine.html

¹² See TCD 16.0 V8, Deutz Products, http://www.deutz.de/live_deutz_products/html/display:engine.de.html?engineKey=8a85818a269337540127fbfe488d5ffa&count=22

¹³ Peter Enav, "Experts: NKorea missile carrier likely from China," *Associated Press*, April 19, 2012, <http://news.yahoo.com/experts-nkorea-missile-carrier-likely-china-075630844.html>

¹⁴ "The truth? China Aerospace's bulk exports of heavy vehicles (4)," *Phoenix TV Web Page*, posted on April 16, 2012: http://www.daqi.com/article/3283654_1.html

¹⁵ While its veracity cannot be confirmed, this speculation was posted on the Top81 web page on April 20, 2012, <http://top81.ws/show.php?f=1&t=1279013&m=9743439>

¹⁶ The existence of this missile program was the subject of a very rare pre-development article in a Chinese publication, see, Zhang Han and Huang Jingjing, "New missile 'ready by 2015,'" *The Global Times*, February 18, 2011, <http://military.globaltimes.cn/china/2011-02/624275.html> . Then in February 2012 a partial image of a new CASIC-designed IRBM on a 12-wheel emerged on the Chinese internet, see, Bill Gertz, "China Unveils New Nuke Missile," *The Free Beacon*, March 7, 2012, <http://freebeacon.com/china-unveils-new-nuke-missile/>

¹⁷ Donald Kirk, "Why Iranian engineers attended North Korea's failed rocket launch," *The Christian Science Monitor*, April 18, 2012, <http://www.csmonitor.com/World/Asia-Pacific/2012/0418/Why-Iranian-engineers-attended-North-Korea-s-failed-rocket-launch>

¹⁸ Hao Zhao, "China denies selling launcher to N. Korea," *The Global Times*, April 19, 2012, <http://www.globaltimes.cn/NEWS/tabid/99/ID/705780/China-denies-selling-launcher-to-NKorea.aspx>

¹⁹ James A. Baker III, *The Politics of Diplomacy, Revolution, War and Peace*, New York: GP Putnam and Sons, 1995, p. 593.

²⁰ “UN probes claim China broke N. Korea sanctions: report,” *Agence France Presse*, April 19, 2012, <http://www.google.com/hostednews/afp/article/ALeqM5issdHPy5jiVrNeEv1ezO6WehnlWw?docId=CNG.c48edd1d1dea9c6d92f8c17aefcd2f24.4a1>

²¹ “[North Korean Missile Carrier Could Indicate Sanctions Have Been Violated](http://blogs.voanews.com/breaking-news/page/8/),” VOA News, April 19, 2012, <http://blogs.voanews.com/breaking-news/page/8/>

²² Mark Landler, “Suspected Sale by China Stirs Concern at White House,” *The New York Times*, April 20, 2012, <http://www.nytimes.com/2012/04/21/world/americas/suspected-sale-by-china-to-north-korea-stirs-concern.html>

²³ Ibid.

²⁴ While it is possible for individuals to cross illegally from China into North Korea with the benefit of professional preparation, the degree of control imposed on this border by both Chinese and North Korean authorities makes it most unlikely that six WS2600-size TELs could be “smuggled” without the active participation of multiple levels of government, military and police officials from the PRC and DPRK. It begs credulity that this feat could be accomplished by a “front company” not operating under the auspices of both governments. For an account of the challenges individuals alone face in crossing this border, see, Spelunker, “Infiltration: Spelunker’s Three Expeditions Into North Korea From Dandong,” *Sino-NK Web Page*, April 2, 2012, <http://sinonk.com/tag/border-security-2/>

²⁵ For more on China’s developing expeditionary capabilities see Richard D.Fisher,Jr, *China’s Military Modernization, Building for Regional and Global Reach*, Westport: Praeger, 2008, Chapter 7, <http://www.strategycenter.net/research/pageID.48/default.asp>