WHETHER ASIA IS EXPOSED TO NUCLEAR CONFLICT

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Abstract

The analysis of the political-military situation in South-east Asia shows that it is a hot spot area which, in the future, might be a place of nuclear conflict. Disputes over natural resources, the petroleum and natural gas of the South China Sea, may make it a global hot spot. The main contenders who want to play the dominant role in the Asia and the Pacific Ocean area are the United States and China.

Territorial disputes can also start a future war. Kashmir, which remains the source of ceaseless tensions between India and Pakistan, can provide an example. Conflicts have already consumed thousands of victims and repeatedly put the feuding sides on the edge of the nuclear war.

Key wards: threats, safety, nuclear weapon, nuclear triad, nuclear platforms, strategy.

Introduction

In the last few years, safety in the eastern and south-eastern Asia region has been deteriorating. Mutual relations between states are shaped by political-economic-military rivalry. China, which has become more determined and offensive, is playing the main role. The United States, which has been performing a more important role in the region, is the other main contender.

In Asia, one of the greatest threats and sources of instability is territorial disputes. The greatest two conflicts concerned the division of the Korean Peninsula and the status of Taiwan. Repeatedly, unsettled border issues were also a direct cause of many conflicts. The Chinese-Indian conflict (1962), in which Chinese and Indian armies fought a border battle in the Himalayas, and in which the Chinese army achieved an outright victory, may provide such an example. On the other hand, India fought four wars with Pakistan in 1947-1948, 1965, 1971 and 1999. The main object of the conflicts was division of the border province of Punjab and numerous border incidents. Happily, all incidents and wars ended with a truce achieved by UN mediators and armies withdrawing beyond the demarcation line.

A dispute about the South China Sea, which is an area of great strategic importance, is the most up to date example of a potential global influence trouble spot. The South China Sea is an area rich in sea resources, as well as deposits of petroleum and natural gas. The importance of this basin as a communications artery is impossible to overrate. Through the Malakka Strait and further through the South China Sea, vast quantities of petroleum are transported by ships to Japan, Republic of Korea and Taiwan[1]. Territorial disputes mostly concern two archipelagos: the Paracel Islands archipelago of about 15 islands,a conflict involving China and Vietnam; and the Spratly Islands – about 170 islands- involving China, Vietnam, Taiwan, Malaysia and Brunei.

The dispute about the South China Sea is regarded as one of the greatest threats to regional safety, besides such problems as the division of Korea, the Japanese-Russian dispute about the Kuril Islands and the rivalry between China and the United States regarding influence in the Asia and Pacific Ocean region[2].

South-eastern and eastern Asia is an area where economic and military based critical tensions may appear. China's expenditure on defence is constantly increasing and proves that the state plays a more and more important role in the international security policy and becomes a great challenge for its neighbours, as well as for the USA due to its military potential. Purchase of new equipment and

1 S. Wełmiński, *Zawiłości ekonomii i polityki, czyli spór na Morzu Południowochińskim*, http://stosunki.pl/?q=content/zawi%C5%82o%C5%9Bci-ekonomii-i-polityki-czyli-sp%C3%B3r-na-morzu-po%C5%82 udniowochi%C5%84skim,.

2 T. Skowronek, *Spór o Morze Południowochińskie*, http://www.geopolityka.org/analizy/1500-spor-o-morze-poludniowochinskie.

a constant modernisation of the weaponry already possessed, and a change in the activities of military forces, which have become more offensive, are arousing doubts and anxiety. The current submarines with intercontinental ballistic missiles and new multitask aircraft carriers are a good example. China is also developing its air forces and the missile arsenal and using every opportunity to confirm its dominant position. All actions have political consequences, and it can be seen that China is trying to remove such countries like the Philippines, Thailand and especially Taiwan from the USA area of influence[3].

Also Japan, which has abandoned its policy of pacifism imposed by the USA after World War II, contributes to the escalation of tensions in this region. Japan is going to develop its self-defence, air forces, naval forces, and increase the number of submarines, destroyers and amphibious forces which would be able to regain and hold Japanese Islands in the case of attack[4]. This causes understandable anxiety for neighbours, who are afraid of Japanese military power and expansionism.

An important factor determining the situation in southeastern Asia is the United States policy, mainly focused on balancing Chinese influence in the region. The United States are concerned by the sudden development of the Chinese navy, as a deterrent and exerting pressure on neighbours; the development of multipurpose missile weapons as basic offensive weapons; antisatellite defence and a sudden increase in Chinese nuclear capability. The United States need to look closely to guarantee to the safety of their allies in Asia and are also afraid that further reduction of its strategic nuclear weapons may result China gaining parity in terms of nuclear warheads placed on different types of platforms. In January 2012, the United States announced strategic deprogramming of the Asia and the Pacific Ocean policy in order to oppose Chinese dominance and to show that the United States are a crucial element of the Asian security system. The main aim of the new strategy in Asia is to increase the presence of the USA in the region. The USA will locate 60% of the USA fleet (six aircraft carriers, most cruisers,

3 *Przyjdzie monsun i wyrówna*, wywiad z R. Kaplanem, Forum, nr 51/52, 19.12.2011-1.01.2012, s. 7.

4 W. Chaber, *Koniec z narzuconym pacyfizmem: zmiana polityki obronnej Japonii,* Polityka globalna.pl.

destroyers, warships and submarines)[5] there by 2020 Also, military cooperation with all southeastern Asia countries, especially Thailand, Vietnam, Malaysia, Burma and Indonesia, is recognised as a priority.

Americans are trying to strengthen cooperation with the ASEAN (Association of Southeast Asian Nations) and make them independent of China. In the United States policy, south-eastern Asia and wider Pacific Ocean area is a region of the key importance, not only in the economic aspect, but also in the military. Diminishing the expansion of China is closely correlated with the military presence of the USA.

According to analysis of the political-military situation, it seems that south-eastern and Eastern Asia are vulnerable to the new arms race, and possible nuclear conflict in the future. It is necessary to add that, among the total number of nine countries possessing nuclear weapons, four are located in Asia: China, India, Pakistan and North Korea. The reasons for which these states created nuclear weapons were different. Undoubtedly, China acquired nuclear weapons as a chance to interrupt the nuclear monopoly of the USSR and the USA, as well as to ensure its own safety. India was motivated by Chinese nuclear weapons and the possibility of Pakistan building its own nuclear bomb which could threaten India. Pakistan's motivation was connected with fear of its neighbour India, and its nuclear programme was explained only as a response to the Indian nuclear programme. On the other hand, North Korea sees, in its possession of nuclear weapons, the chance of enhancing its position in the region, being in an exclusive club of powers possessing nuclear weapons and providing the possibility of revenge in the event of war.

Nuclear weapons of the People's Republic of China

China very closely cooperated with the USSR in the development of its nuclear weapons. In the 50s, Chinese scientists and designer engineers were trained and gained experience in Soviet plants and laboratories. After Stalin's death,

5 http://www.globalpost.com/dispatch/news/regions/asia-pacific/120602/leon-panetta-us-navy-asia-2020.

Khrushchev coming to power brought internal and foreign policy change, relationships between states deteriorated and, as a consequence, the USSR terminated the bilateral agreement on development of nuclear weapons. China had to continue work on nuclear weapons on its own which resulted in the first Chinese nuclear test in 1964 on Lop Nor training ground in the Xinjang province. In 1966, China constructed the first ballistic missile and, in June 1967, detonated the first hydrogen bomb. China needed only 32 months to construct the hydrogen bomb, compared with the USSR who needed 77 months, the USA 75 months and France 103 months which was an incredible technical and prestigious achievement. In all, China conducted 43 tests with nuclear weapons. The last underground explosion was conducted in 1996.

Chinese ballistic missiles, with nuclear warheads as well as conventional ones, are grouped in 2nd Corps of Artillery, subordinated directly to the Central Military Commission, whose chairman is the Chinese Leader (president). Created in 1966, its main task is to remain in a high state of readiness, carry out nuclear counter-attacks and precise strikes using conventional missiles and demonstrate a deterrence policy towards other states[6]. At present, it is composed of strategic and tactical nuclear forces, conventional missile powers, support units (communications, reconnaissance, logistics, electronic warfare), training centres, research institutes and commands. Missiles forces are organised into six missile bases: 51st, 52nd, 53rd, 54th 55th and 56th (equivalent of the Russian missile army) with missile brigades, support battalions and units. The command of the Corps is in Qinghe near Beijing. Brigades are located in areas and sectors in which Chinese politicians and servicemen see the greatest threat, namely the 56th Brigade in the Russian direction, the 52nd Brigade in the Taiwan direction, the 51st Brigade in the direction of the West Pacific Ocean and the far east, the 54th Brigade in the Japanese direction and the West Pacific Ocean, and the 53rd and the 55th in the Indian and southern direction.

The first missiles, built in the 60s, were Dongfeng-1 (SS-2) and Dongfeng-2 (CSS-1) missiles based on the Soviet technology. The Donfeng-1 missile was a copy of

6 C. Kopp, *China's Second Artillery Corps*, Landwarfare, Defence Today, http://www.ausairpower.net/PDF-A/DT-Second-Artillery-Oct-2012.pdf.

the Soviet R-2 (SS-2 Sibling), with range of 550 km and could carry a conventional warhead of 500 kg.

The Dongfeng-2 missile was the first ballistic medium-range missile built on the Soviet license of the R-5 Pobieda missile, which was given to China in the late 50s and was able to transfer a 15-20 kt nuclear warhead. It had the same shape, dimensions, engine and warhead[7].The DF-3 (CSS-2) missile was the first Chinese ballistic missile which entered into service in 1971 which was also based on the Soviet R-14 Chusovaya missile. It had a range of 2500 km, equipped with conventional, nuclear or thermonuclear warheads of about 2000 kg. On the other hand, the first intercontinental two-stage ballistic liquid fuel missile DF-4 (CSS-3) was introduced in 1976. The missile was equipped with a nuclear warhead of about 3.3 Mt power and a range of 7000 km. The target accuracy was 1.5 km. In 1981, the three-stage ballistic DF-5 (CSS-4) missile came into service and was put in silos. It had a range of 12000 km and could transfer one nuclear warhead of about 4-5 Mt[8]. The first mobile platform ballistic missile was DF-21 (CSS-5) which came into service in 1991. It could transfer one nuclear warhead of 200-300 kt for a distance of 2100 km[9]. The newest intercontinental mobile platform ballistic missile is DF-31(CSS-10), which came into service in 2006. It is 13.0 m in length, 2.25 m in diameter and has a mass of 42.0 t. It can transfer one warhead of 200-300 kt or thermonuclear for a distance of 8000 km. In 2007, the DF-31A missile with a range of about 12000 km came into service. At present, China is working on an intercontinental three-stage solid fuel mobile platform missile DF-41 (CSS-20). The missile will have a range of 14000 km and will transfer a single nuclear warhead of about 1 Mt or the MIRV warhead of 150 kt[10].

According to available sources, China has about 260-300 nuclear warheads. The Chinese nuclear arsenal is about 46 intercontinental strategic ballistic ICBM missiles, including 20 DF-5A missiles, with a range of over 13000 km arranged in silos and 25 DF-31A missiles on mobile car platforms. The DF-31A missile is able

7 *DongFeng 2 (CSS-1) Intermediate-Range Ballistic Missile*, http://www.globalmil.com/Military/ Strategic_ Missile/China/Ballistic_Missile/2009/1213/51.html.
8 *DF-5/5A (CSS-4),* http://missilethreat.com/missiles/df-5-5a-css-4/.
9 *DF-21, DF-21A, http://missilethreat.com/missiles/df-21-21a-21b-21c-21d-css-5/.*
10 *DF-41 Dongfeng-41 Multi-warhead intercontinental ballistic missile,* http://www.armyrecognition.com/china_chinese_army_missile_systems_vehicles/df-41_dongfeng-41_css-x-10_intercontinental_ballistic_missile_icbm_technical_data_sheet_pictures.html.

to change targets during flight. China is equipped with 80 ballistic IRBM missiles DF-21A with a medium range of about 2100 km on mobile car launchers and 10 DF-4 missiles with over 5500 km range. The majority of missiles have one nuclear warhead, except for the modernised DF-5A missiles arranged in silos, which are armed with MIRV warheads.

For transfer of nuclear warheads, China also has older generation bombers (Hong-6); however, they are not as important as the other elements of the "nuclear triad"[11]. In the last few years, the new heavy bomber Xian H-6K, which is a modernised H-6, was introduced. By now, a dozen of these types of bombers have been produced. Because of its range, and the range of CJ-10A missiles which can be equipped with nuclear warheads, Chinese bombers are able to strike targets in a range of 5000 km, including bases in Hawaii, Alaska and Guam Island without the need to leave the Chinese air defence zone. 6 YJ-62 missiles or Yj-12, for surface targets or other installations, are posing a great threat to American and allied objects in the West Pacific Ocean[12].

The arsenal of intercontinental land and air based ICBM ballistic missiles is supported by nuclear submarines of Jin type (project 094) with ballistic Jl-2 missiles (Julang-2). Currently, three submarines are in a line with hull numbers: 411, 412 and 413. By the end of 2017, two more ships with numbers 414 and 415 will have entered into service. They are the first ships of this class in the Chinese navy which have achieved the full operating readiness. They are armed with 12 launchers of ballistic Jl-2 missiles which are arranged in silos in two rows, six behind the sail and six bow torpedo launchers of 533 mm. Because of the insufficient details published by China, many details need a thorough analysis[13].

At present, submarines are equipped with the second generation ballistic missile Jl-2 (Julang-2) which is based on land DF-31. The missile has a range of 7400-8000 km and an accuracy of 300 m. It has one nuclear warhead of 1 Mt. In the future, it is planned to implement the modified Dongfeng 41 (DF-41) missile, which will be equipped with an MIRV warhead (3-6 autonomous warheads of about

11 T. Nevdick, T. Cooper, *Siły powietrzne świata od 1990 do dziś*, Amber Body Ltd, 2010.

12 *H-6K Long range strategic bomber*, http://www.military-today.com/aircraft/h6k.htm.

13 *Jane's Fighting Ships, 2014-2015*, JPCL, England.

150 kt)[14]. Thanks to long-range ballistic missiles, Chinese submarines located in the Yellow Sea (near the Chinese coast and protected by its own defensive systems) are able to strike targets on the Hawaii Islands, Alaska and the west coast of the United States, whereas missiles deployed on the west Pacific Ocean, can strike continental targets in the area of the United States.

The official policy of China is focused on limitation of nuclear powers, supporting worldwide nuclear disarmament and the non-usage of the nuclear weapon against any state at first. China is an active participant in programmes against proliferation of nuclear weapons. In 1992, China signed the Non-Proliferation Treaty, and accepted the Comprehensive Nuclear-Test-Ban Treaty in 1996. At the end of the 90s, China signed several bilateral nuclear weapons non-proliferation agreements, as well as banned export of ballistic missiles to countries like Pakistan and India. China also takes part as host of official talks concerning denuclearisation of the Korean Peninsula[15].

At the end May 2015, "Chinese military strategy" was published, in which China describes its own national defence policy as defensive, and treats the development of the defence structure as the strategic aim of the modernisation of the state, hand in hand with economic development.

Once again, a declaration of Chinese non-aggressiveness, the principle of not using nuclear weapons first and not leading to hegemony, regardless of economic development, has been underlined. China called on other countries to reduce their nuclear arsenals, stop research on new types of warheads and abandon deterrence policy based on the first use of nuclear weapons. They also ensured that they would not get involved in the nuclear arms race.

However, recently the Chinese press announced that, if the country was not able to defend itself in the conventional way, it will use nuclear weapons. According to this new doctrine, China will at first issue a warning on the possibility of using nuclear weapons, and if the opponent continues hostile actions, China might conduct a pre-emptive nuclear attack. Previous doctrine stated that nuclear

14 *JL-2 (CSS-NX-14),* http://www.globalsecurity.org/wmd/world/china/jl-2.htm.
15 H.M. Kristensen, R.S. Norris, M.G. McKinzie, *Chinese Nuclear Forces and U.S. Nuclear War Planning,* Federation of American Scientists, November 2006.

weapons would only be used in response to another nuclear attack. In the wartime strategy, China emphasizsd that it would apply the principle of active defence, which combines strategic defence with a tactical and operational offensive.

In spite of peaceful declarations, China is continuing its "nuclear triad" programme. They are developing solid fuel strategic ballistic missiles with over 13000 km range, implementing MIRV warheads (Multiple Independently Targetable Re-entry Vehicle) able to transfer 10 autonomous warheads, and MARV (Maneuvering Re-entry Vehicle) which is able to break anti-missile defence systems. They are building mobile systems which are more difficult to destroy, an increasing number of warheads and missile platforms, building modern nuclear submarines with ballistic SLBM missiles, are carrying out work on tactical nuclear weapons and its platforms and manoeuvring tactical missiles launched from DH-10 launchers and air DH-20 carriers (CJ-20), tactical nuclear bombs for fighter-bombers, developing anti-satellite weapon systems (ASAT-Anti-Satellite) and building a network of underground tunnels for storage of mobile launchers.

China is trying to keep such a nuclear capability which will enable it, after an opponent's nuclear attack, to perform the appropriate counter-attack.

Nuclear weapons of India

Building the Indian nuclear bomb had both the political and military aspects. India regarded China and Pakistan as hostile neighbours, from which China had already been a nuclear power, and Pakistan was trying, in secret, to gain nuclear weapons. India had some border disputes with both these countries.

India began to develop its own nuclear programme after the first Chinese nuclear weapons test, conducted in 1964. This proves that their decision to build an atomic bomb was caused by Chinese success, as well as anxiety that Pakistan would build its own bomb and threaten India. On 18th May 1974, India conducted an underground test with the code name "Smiling Buddha" in the Rajasthan desert and detonated its first platoon bomb of 12-15 kt. In the following years, India mastered the technique of constructing its own reactors which resulted in the opening, on 8th August 1985, of the 100MW reactor in Dhurva, which could

produce 20-25 kg of the platoon a year. Materials obtained from nuclear reactors were used in the production of the first nuclear bomb.

On 11th May 1998, in the Thar Desert in the vicinity of Pakistan's border, India conducted three simultaneous underground nuclear tests as part of the Shakti Operation. Two days later, on 13th May, India conducted another two underground tests and declared their nuclear bomb tests finished. The power of the test explosions fluctuated from 0.2 kt to 43 kt. In all, India conducted six nuclear bomb tests. After that, India officially joined the circle of five nuclear powers.

Along with the development of nuclear warheads, the development of nuclear platforms took place. At present, Indian military forces are equipped with 90-110 nuclear warheads which can be carried by "nuclear triad" means: ballistic land missiles, atomic submarines with ballistic SLBM missiles and bomber-fighter aircrafts.

Military forces are armed with four types of land-based ballistic missiles: short range (Prithvi-2 and Agni-1); of middle range (Agni-2); intermediate (Agni-3) and long range (Agni-4 and Agni-5)[16].

At first, Indian strategic missile forces were dominated by short range missiles of the Prithvi type. At present, the Prithvi-2 missile, which can transfer both conventional and nuclear warheads for a distance of 250-350 km, is used. It is used by land (mobile car launchers) and air forces. It was the first missile developed in the Integrated Guided Missile Development Programme (IGMDP)[17]. In 2004, the Agni-1 missile was placed on a mobile train and car launchers entered the service. It has a range of 700-1250 km and has one 40 kt nuclear warhead. On the other hand, the two-stage solid fuel Agni-2 missile, which achieved its operational readiness in 2011, with a range of 2000-3000 km, can strike targets with an accuracy of 30-40 m. The missile is armed with the conventional or nuclear warhead of 40 kt. These missiles are a part of the deterrence forces and can strike objects located in the territory of Pakistan, central and southern China. Missiles are installed on mobile

16 H.M. Kristensen, R.S. Norris, *Indian nuclear forces, 2015*, http://bos.sagepub.com/content/71/5/77.full.

17 *Missile Threat, Prithvi-2 (SS-250),* http://missilethreat.com/missile-class/prithvi-2-ss-250/.

car launchers of the TEL type (Transporter Erector Launcher)[18]. The third Agni-3 series missile, with a nuclear warhead of 40 kt and a range of over 3200 km, can strike targets in Pakistan, in the Middle East and in China with an accuracy of 40 m and is put on mobile train launchers[19]. In 2014, the newest missile of the Agni-4 family, with a 3500 km range put on train launchers, came into service. The missile is equipped with the newest avionics, a fifth generation on-board computer and new architecture[20].Currently, India is testing a new Agni-5 missile which can carry one nuclear warhead of about 40 kt for over 5200 km with 10 m accuracy. It enables missiles to be situated in any place in India, because it can strike targets right across Russia and in Europe. Putting the missile in a container is a kind of novelty, which enables it to be prepared for firing within a few minutes and to be fired from any place. It assures the greater flexibility of the strategic forces during military activity. Probably, it will also be able to carry MIRV warheads, but according to the press reports, India is not working on warheads of this type. The expected operational arrival of the missile is 2016[21].

Military forces are also equipped with manoeuvring missiles of the *cruise* type, which can be armed with nuclear warheads such as: BrahMos and Nirbhay. The BrahMos missile is an Indian-Russian supersonic tactical manoeuvring missile with a range of 290 km, which was drawn up according to MTCR (Missile Technology Control Regime)[22]. The missile can carry conventional and nuclear warheads of 200 kg and has a range from 120 km up to 300 km. The missile's target accuracy is 1.0 m. It was first attached to the land forces in 2007. At present, it is also used in the navy and air forces[23]. The long-range Nirbhay missile (1000-1500 km range) has also been tested. It is a subsonic missile with 0.8 Ma speed and a very high

18 Y. Allikarjun, *Agni-II test-fired for full 2000 km strike range*, http://www.thehindu.com/news/national/agniii-ballistic-missile-succesfully-testfired/article6580146.ece.

19 *Agni (missile),* https://en.wikipedia.org/wiki/Agni_(missile).

20 *India and weapons of mass destruction,* https://en.wikipedia.org/wiki/India_and_weapons_of_mass_ destruction.

21 *Agni-V*, https://en.wikipedia.org/wiki/Agni-V.

22 MTCR (Missile Technology Control Regime) is an unofficial cooperation of 34 states for preventing the proliferation of missiles and missile systems, UAV and other systems able to carry 500 kg nuclear weapons for a distance of over 300 km. The cooperation was initiated in April 1987 by the G-7 group: France, Japan, Canada, Germany, the USA, Great Britain and Italy. Russia joined in 1995, Poland in 1998. China and India is cooperating with MTCR.

23 *BrahMos,* https://pl.wikipedia.org/wiki/BrahMos.

target accuracy of 1.0 m. It was also first attached to the land forces in 2007.It can carry 24 types of different warheads including a nuclear warhead[24]. The missile is meant for navy, land and air forces. And Su-30 MKI will be equipped with it.

India is building atomic submarines of the Arihant type in cooperation with Russia (Vanquisher of the enemies) with displacements of 6000 t. The first INS Arihant ship joined to the line in 2015, the second is planned in 2017. Altogether, India is planning building 5 such ships. In this way India, became the sixth country after the United States, Russia, France, Great Britain and China to have its own atomic submarines equipped with SLBM missiles. The ship has four vertical launchers in SLBM version for twelve ballistic K-15 Sagarika missiles. Additionally, on the bow, it has 6 of 533 mm torpedo launchers able to fire manoeuvring *cruise* SLCM Novator Alpha SS-N- 27 Club (3M-54E-1) anti-ship missiles and land objects located up to 220 km. The ship can be immersed in 450 m[25].

The K-15 Sagarika missile is a two-stage solid fuel ballistic missile which can carry one 12 kt nuclear warhead for a distance of 750 km. Due to limited range, which does not include striking targets over the whole territory of Pakistan and China, India is working on a middle-range K-4 missile with a range of 3500 km. It will compliment K-15 missiles and is planned to come into service in 2017[26].

Fighter-bombers are the third hard core of the Indian "nuclear triad". According to India, 2-3 Mirage and the Jaguar squadrons have a sufficient capability to conduct nuclear operations against China and Pakistan. According to unconfirmed sources, MiG-27 Floggers, built in India, are also adapted to carry nuclear warheads[27].

From the beginning of the nuclear programme, India led a policy of ambiguity and opacity, in order to camouflage their progress in the development of nuclear weapons. In acquiring nuclear weapons, India could see away to building its own position and status on the Asian continent. Similarly to Pakistan, India treats nuclear weapons as an element of deterrence policy. Indian nuclear doctrine is based on "minimal credible deterrence" and the principle of the non-usage of

24 *Nirbhay Subsonic Cruise Missile, India*, http://www.army-technology.com/projects/nirbhay-subsonic-cruise-missile/.
25 *Jane's Fighting Ships, 2014-2015*, JPCL, England.
26 *K missile family*, https://en.wikipedia.org/wiki/K_Missile_family.
27 T. Nevdick, T. Cooper, *Siły powietrzne świata od 1990 do dziś*, Amber Body Ltd, 2010.

nuclear weapons as the first („no first use"), and also towards states possessing nuclear weapons. It means that an ability to survive an enemy attack and to conduct a retaliation attack which will discourage potential aggressors remains the fundamental idea for having its own nuclear weapons. India also pays much attention to the development of conventional military forces which are supposed to assure safety for the country, without the risk of using nuclear weapons[28].

Nuclear weapons of Pakistan

Pakistan's anxiety over India and desire for gaining a leading role in the Islamic world were a main reason for building nuclear weapons. Because of unfavourable geographical location connected with the small distance between the eastern and western border of Pakistan, there was a risk that Indian forces may possess territory of Pakistan in a very short time. So, in order to increase the level of security and as a final deterrence means against conventional or nuclear attack, it was decided to build nuclear weapons. The decision to start work on nuclear weapons was taken after the war with India in 1971.

Dr. Abdul Qadir Khan, who had been a director of the main nuclear weapons testing centre for 26 years, was considered as the father of Pakistan nuclear weapons. Thanks to his connections, he had access to the newest nuclear technology in the world and unlimited government financial resources.

In the middle of the 80s, so-called "cold" tests were conducted, i.e. mechanisms initiating a nuclear explosion without an actual burst. As a result of these works and in response to the second Indian nuclear explosion from 13th May 1998, the first Pakistan nuclear bomb test was conducted. The first Pakistan atomic test with the code name *Chagai-I* was carried out on 28th May 1998 in the Ras Koh mountains in Beluchistan. As part of the test, five simultaneous underground outbursts of 40 kt power were conducted. The second test *Chagai-II* took place two days later on 30th May, the power of the explosion achieved 12 kt. In sum,

28 *India's Nuclear Doctrine,* pdf, h http://www.ipcs.org/Indias-Nuclear-Doctrine.pdf.

Pakistan conducted six underground nuclear tests[29] and joined the elite "nuclear club" and became the only Muslim country possessing nuclear weapons[30].

The assessment of the Pakistan nuclear arsenal is very difficult due to limited information and the lack of the transparency from the military circles. Although all countries possessing nuclear weapons are trying to lower their atomic potentials, Pakistan stays in opposition and in a very short period has developed nuclear armaments. It is expected that about 200 nuclear warheads will be produced by 2020. Currently, Pakistan has about 100-120 nuclear warheads which can be carried by ballistic land missiles, land and aircraft manoeuvring missiles and fighter-bomber aircrafts.

Pakistan military forces have three types of ballistic land-based missiles: short range (Abdali-1 and Ghaznavi); middle range (Ghauri-I, Ghauri-II, Shaheen-I, Shaheen-II) and intermediate range (Shaheen-III)[31].

The base of the Pakistan deterrence nuclear arsenal consists of: Ghauri-II, Shaheen-II and Shaheen-III which can strike objects on the whole territory of India.

Thanks to versatile Chinese help connected with building and miniaturisation of nuclear missiles, Pakistan was able to construct their own weapons. Since 1992, China has provided Pakistan with several complete launchers with DF-11 missiles (300 km range), which became a prototype of Pakistani Ghaznavi (Hatf-3) which entered into service in 2004. It can carry a 12 kt warhead for a distance of 290-320 km and operates from the mobile car launcher TEL[32]. Pakistan also acquired the Chinese DF-15 (M-9 / CSS-6) missile used for creating its own Shaheen-I (Hatf-4). The programme started in 1995, and the Shaheen-I missile came into service of the Pakistani land forces in 2003. In 2004, the next version of the Shaheen-II (Hatf-6) missile, which was an equivalent of the American Pershing 2 and the Indian Agni-2 missile (middle range), entered into service. It is one of the most

29 *1998: The Year of Testing, http://nuclearweaponarchive.org/index.html.*

30 *Pakistan and weapons of mass destruction*, https://en.wikipedia.org/wiki/Pakistan_and_ weapons _of_mass_destruction.

31 H.M. Kristensen, R.S. Norris, *Pakistan's nuclear forces, 2015*, Bulletin of the Atomic Scientists, http://bos.sagepub.com/content/71/6/59.full.pdf+html.

32 *Hatf 3*, http://defence.pk/wiki/hatf3/.

modern missiles in the Pakistani ballistic missiles arsenal. Thanks to a "re-entry" block, it can change the line of flight and defeat antimissile systems. For this, missile work on the MIRV warhead was started. The Shaheen-II is a two-stage solid fuel missile with a 2000 km range and 300 m accuracy, installed on a six-axis TEL car launcher[33]. According to reports from 2015, the newest Shaheen-III missile (range 4500 km), which is a modernised version of previous missiles, was introduced. It can carry 15-30 kt nuclear warheads and strike objects located in India, China, as well as in the Middle East. The missile can also be used for putting satellites on a circumterrestrial orbit. In March 2015, another successful test of the Shaheen III missile was conducted[34].

At the end of the 80s, Pakistan also started the Ghauri missile programme, which was developed on the basis of the Korean Rodong-1 missile based on the Soviet SS-1 Scud missile. In 2005, the Ghauri-II (Hatf-5A), which was the latest version, was introduced. It could carry a 15-30 kt nuclear warhead and strike targets at a distance of over 2300 km. It was launched by the TEL launcher[35].

Also, since 2013, a ballistic battlefield missile Nasr (Haft-9) has been inservice. It is a one-step solid fuel missile with a 0.5-5 kt nuclear warhead (60.0 km range), about 6.0 m length and 0.3 m diameter. The launcher consists of four containers put on the mobile car platform. This system was developed for the Quick Response Forces and meant to provide deterrence in dynamically changing battle conditions, and may counterbalance more powerful conventional Indian forces[36].

Military forces are also equipped with manoeuvring *cruise* missiles which can be armed with nuclear warheads such as Babur (Hatf-7) and Ra'ad (Hatf-8).

The Babur missile came into service in 2005 and is the first manoeuvring missile in the Pakistani armed forces. The rocket can carry a 10-35 kt nuclear warhead with 880.0 km/h speed for a distance of 700 km. Next, in 2007, a manoeuvring Ra'ad (Hatf-8) missile, launched from fighter-bombers, came into service. The

33 *Shaheen-II/Eagle-I/Hatf-6/Ghaznavi*, http://www.globalsecurity.org/wmd/world/pakistan/shaheen-2.htm.

34 R. Fisher, "*Pakistan's Long Range Ballistic Missiles: A View from Ideas",* International Assessment and Strategy Center, November 1, 2004, accessed July 8, 2014, http://www.strategycenter. net/research pubid.47/pub_detail.asp.

35 *Pakistan's missile technology*, http://www.defencejournal.com/may98/pakmissiletech.htm.

36 *Nasr,* http://www.military-today.com/missiles/nasr.htm.

missile can be armed with a 10-35 kt nuclear warhead and has a range of 350 km. It was built using *stealth* technology and is one of best versions of manoeuvring missiles with high strike effectiveness[37].

Pakistan also has aircraft which can conduct nuclear strikes. At present, the Pakistani air force has French Mirage V and American F-16A/B able to transfer nuclear weapons (manoeuvring missiles, gravitational bombs). A fourth generation light multitask fighter aircraft JF-17 Thunder is also in use, built together by China and Pakistan and adapted to carry manoeuvring Ra'ad missiles.

The main task of the Pakistani nuclear arsenal is to deter India. It is possible that, if India had not started its nuclear programme, the Pakistani bomb would never have existed.

In 1974, after India's first nuclear bomb test, Pakistan felt insecure and offered India to create a nuclear weapons free zone in south Asia. Continuing its policy, in 1987, Pakistan offered India the bilateral agreement on non-conducting nuclear tests, and in 1993 created a missile free south Asia. Generally, these initiatives did not meet with India's final approval.

Pakistani authorities are aware of the fact that, in the event of conflict, India will try to destroy their nuclear potential; therefore Pakistan develops its mobile tactical nuclear platforms in order to locate it on the whole territory and avoid total damage in the initial phase of the conflict. It is necessary to add that due to the neighbourhood (capital city of Pakistan, Islamabad is located 80 km from Indian border), the maximum time of the missile flight is 10 minutes and the variety of its possible usage is limited because of contemporary fire detection systems.

Pakistan did not publish its nuclear doctrine and it is not known in what circumstances it will be used. Generally, Pakistan announced it would not follow the "no-first use" doctrine and reserved the right to use nuclear weapons first, also if attacked by conventional forces, which could threaten its integrity[38].

37 *Babur LACM & Ra'ad ALCM Detailed*, http://trishulgroup.blogspot.com/2008/12/babur-lacm-raad-alcm-detailed.html.

38 *Pakistan's Nuclear Doctrine,* Defence Journal, http://www.defencejournal.com/apr99/pak-nuclear-doctrine.htm.

Pakistan did not accept and did not accede to the Treaty on the Non-proliferation of nuclear weapons (NPT) which it regarded discriminatory and the Treaty on the total ban on nuclear testing (CTBT). In the second case, Pakistan made its decision dependent on India's actions.

Nuclear weapons of the Democratic People's Republic of Korea

For the first time, nuclear weapons were already present on the Korean Peninsula in 1958 when the United States deployed its nuclear weapons (nuclear mines) on the border with the North Korea. In the second half of the 60s, there were almost 950 nuclear warheads and nuclear platforms in South Korea such as: artillery ammunition of a calibre of 155 mm, nuclear bombs, and the Lacrosse launchers, Sergeant and Davy Crockett. After the end of the "cold war" in 1991, all American nuclear weapons were withdrawn from the Korean Peninsula.

The USSR helped North Korea to create its own nuclear programme and, in 1956, both countries signed an agreement on training North Korean scientists, and, in 1959, an agreement regarding the peaceful use of nuclear energy. In 1964, with the help of the USSR, a Nuclear Scientific research Centre in Yongbyon was formed, in which a small Soviet research nuclear reactor was placed.

In 1974, North Korea became a member of the International Atomic Energy Agency-IAEA and ratified an agreement in April 1992. Next, in December 1985, North Korea signed a treaty on the non-proliferation of nuclear weapons (NPT), and on 31st December 1991, both Korean countries signed the declaration of denuclearisation of Korean Peninsula.

But, in the middle of the 90s, many tensions and technical crises appeared and cooperation with IAEA was difficult. Additionally, in 2002, President Bush described North Korea as one of the countries of an "axis of evil". In protestation, North Korea expelled IAEA inspectors monitoring nuclear installations in December and 10th January 2003, North Korea announced its immediate withdrawal from the NPT treaty.

On 10th February 2005, Korea declared it possessed nuclear weapons[39], and, on 9th October 2006, conducted its first atomic bomb test and became the eighth nuclear power. Despite the international criticism and imposed sanctions, North Korea was still conducting its nuclear programme and working on development of nuclear platforms, and conducted another test of the nuclear bomb in 2006, a third in February 2013, and a fourth and fifth in January and September 2016.

The current nuclear arsenal of North Korea is assessed at about 10 warheads which can be carried by ballistic land missiles and fighter-bomber aircrafts. According to specialists, Pyongyang did not miniaturise nuclear warheads enough to put them in middle and long-range ballistic missiles and they are still carried by aircraft and ships.

North Korea uses Soviet Scud missiles bought in the end of the 70s from Egypt, but has already begun construction of its own version-Hwasong-5 and Hwasong-6. The Hwasong-5 missile originates from the Soviet R-17 missile Elbrus (SS-1C Scud-B). In 1988, North Korea started working on increasing missile range, which resulted in building the new Hwasong-6 (Scud-C) missile of 500 km range and 50 m accuracy with a smaller warhead and weight reduced by 300 kg.

In 1988, they started working on increasing the range of the missiles, which resulted in the new Hwasong-6 missile (Scud-C) with a 500 km range and a target accuracy of 50 m, with the smaller warhead and weight reduced by 300 kg. The range of the missile enabled it to strike objects in South Korea and in western Japan. In 1994, the next Hwasong-7 (Scud-D) missile was incorporated into the weaponry, which had 200 km longer range and was 200 kg lighter. The range was increased by reducing warhead's weight in this way[40].

In parallel with the Hwasong missiles development, North Korea carried out work on its own middle-range missile Nodong 1, which could strike targets located in the whole of the Japanese area as well as US objects placed on Okinawa Island. The Hwasong-6 missile scaled by 150% was used for construction of the new missile. The missile could carry a single 1000 kg for a distance of 1300 km wich enables

39 *Korea Północna-Program nuklearny*, http://www.stosunkimiedzynarodowe.info/kraj, Korea_Polnocna, problemy, Program_nuklearny.

40 *Missile Threat, A Project of the G.C.Marshall and Claremont Institutes*, http://missilethreat.com/missiles/scud-b-variant-hwasong/.

a strike on the entirety of Japan's territory. The accuracy is about 190 m and the missile is placed on five-wheel mobile car launchers of TEL type.

Another missile was a two-stage liquid fuel missile, with the first stage modelled on the Nodong-1 missile and the second on the Hwasong-6. However, although this missile was never used as a ballistic missile, it is able to carry a nuclear warhead. Probably, Taepodong-1 was a transitional missile of the next version, Taepodong-2, which is the newest ballistic missile still under construction. The range of the new missile is over 6000 km and allows objects in Alaska and Hawaii to be hit. For the first time, the missile was launched in July 2006. In 2012, the satellite was put into orbit[41].

Korea built the next missile Musudan (Nodong-B), on the basis of the Soviet R-27 missile (SS-N- 6), which was a ballistic missile in SLBM class of 2400 km range and carried by atomic submarines of the Yankee class[42]. It is a one or two-stage liquid fuel ballistic missile with a range over 3000 m, which can strike US navy infrastructure on Guam Island. This missile was demonstrated for the first time in 2010[43].

After analysing available materials, it seems that North Korea does not have a classical nuclear doctrine, and its nuclear strategy is based on deterrence in peacetime and possible asymmetrical nuclear attack in the case of war[44]. The developed nuclear programme is in contradiction with society's living conditions and limited natural resources. Through its provocative policy towards the southern neighbour and with the conducted nuclear tests, the country is constantly destabilising the political and military situation in this region. Kim Dzong Un's government threatens the world with its nuclear weapons and later on negotiates support and economic assistance. Even though North Korea possess just a few nuclear warheads, it is counted as a local nuclear power with limited capacities but able to threaten South Korea and Japan.

41 D.C. Wright, T. Kadyshev, *An Analysis of the North Korean Nodong Missile*, Science & Global Security, 1994, Volume 4.

42 N. Brügge, *The North Korean „Musudan" missile is based on the Soviet R-27 SLBM*, http://www.b14643.de/Spacerockets/Diverse/Musudan/index.htm.

43 *KN-08:Hwasong-13 The semi-mobile Limited Range ICBM*, No-dong-C, 2015 Senior Technical & Space Policy Analyst, Globalsecurity.org, http://www.globalsecurity.org/wmd/world/dprk/kn-08.htm.

44 F.G. Barbuto, *Strategia nuklearna Korei Północnej, 2015*, http://www.geopolityka.org/analizy/federico-g-barbuto-strategia-nuklearna-korei-polnocnej.

Summary

According to signed treaties and pacts, including the bilateral New Start agreement on strategic arms reduction in 2010, Russia and the United States, the two biggest nuclear powers, are reducing their nuclear arsenals. Both powers committed themselves to reduce the number of nuclear warheads to 1550 pieces by 2018. Additionally, both countries promised to keep the number of strategic nuclear platforms at a level of 700 pieces and to limit to 800 pieces the number of all missile launchers and strategic bombers. Despite current tensions and misunderstandings between powers, the arms reduction agreement seems not to be endangered and is consistently fulfilled. However, a systematic modernisation of possessed nuclear arsenals and the increase of the Russian strategic nuclear forces is a little bit disturbing.

In contrast to the mentioned powers, Asian countries are systematically developing their nuclear weapons and platforms. The arms race in South and South-East Asia is very noticeable. In recent times, a distinct growth of information concerning the development of Chinese, Indian, Pakistani and North Korean strategic powers has been observed. These countries are testing and implementing new types of weapons (ballistic missiles and manoeuvring missiles) and gaining new offensive abilities. The appearance of new nuclear platforms set a new dangerous trend in the local deterrence policy which increases the risk of a nuclear war outbreak.

Along with increasing nuclear capabilities, these countries are also revising their wartime doctrines, abandoning the strategy of deterrence, minimal refrain and resignation from using nuclear weapons as the first, only in case of the existence of threat. Also, the physical closeness of India, Pakistan and China is heightening the danger that nuclear weapons may be used. The two first countries never signed a treaty on the Non-proliferation of nuclear weapons (NPT), so are not obliged. Although China signed it, it follows it only partly. The use of medium and short-range ballistic missiles with nuclear warheads guarantees their destination will be reached in about 10 minutes. It limits much time for clarifying the existing situation and for early warning. The time pressure is incredible and may lead to a disastrous mistake.

Nuclear weapons also have key importance for the North Korean regime and stays as a fundamental tool in its foreign policy. North Korea's government treats nuclear weapons as an element for strengthening the regime, the prestige and blackmail. Choosing the policy of blackmail is a reply to the situation after the end of the "cold war", when North Korea lost thesupport of the former USSR, and lost safety guarantees from China. The authorities understood, that they must ensure keeping the power and safety on their own. In this situation, North Korean authorities decided that the development of the nuclear weapons and nuclear platforms would be the best solution. Although North Korean nuclear strategy is not based on a credible arsenal and there is a lack of confirmed information about the quantitative potential, its nontransparent intentions make neighbouring countries, including South Korea and Japan, worry.

Japan is looking at the development of the nuclear arsenal of North Korea with great anxiety. In the post-war period, Japan adopted the principle that nuclear weapons would not be produced, stored or proliferated on its territory. Due to the North Korean threat, Japan is seriously considering abandoning this principle. Its pacifist constitution does not exclude the possibility of possessing the nuclear weapon for self-defence.

Our analyses explicitly show that the main reason for possessing nuclear weapons are safety measures. Nuclear weapons are still an important element of national strategy, and constitute the fundamental element of stopping arms aggression and, due to their destructive power, still remain the political-strategic means of deterrence.

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