

# Briefing Paper

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## COVERT CARRIERS

### Evolving Methods and Techniques of North Korean Sanctions Evasion

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**Front cover photo**

Panamanian police stand guard in front of a shipping container seized from the North Korea-flagged Chong Chon Gang. Cónon, Panama, July 2013.

Source: Carlos Jasso/Reuters



Ministry of Foreign Affairs of the Netherlands

## Overview

For more than a decade the Democratic People's Republic of Korea (DPRK), in defiance of UN sanctions, has systematically smuggled arms using its diplomatic resources and the services of unwitting global banks and logistics companies. This Briefing Paper, as the first such effort, consolidates salient data from 11 Security Council reports published by the UN Panel of Experts monitoring the sanctions on North Korea since 2010. The result is a unique overview of the evolving methods and techniques that the DPRK uses to evade sanctions by employing its diplomatic resources and exploiting key loopholes relating to transport, logistics and proliferation finance. To stem these prohibited transfers, the Briefing Paper highlights how new information-sharing mechanisms would strengthen the ability of UN member states, private industry, and the UN Panel of Experts to detect ongoing DPRK violations and disrupt existing sanctions evasion networks.

## Policy observations

- Using all the available identifiers listed in relevant UN Panel of Experts reports, global logistics companies and banks should conduct proliferation audits that screen their databases and other historical records for North Korean sanctions-evasion transactions and activities.
- All affected UN member states should commission risk assessments that map North Korean embassy, trade mission, and consulate business relationships and banking channels in their jurisdictions, including those of identified notaries, spouses, and other associates of North Koreans involved in sanctions-evasion activities.
- All UN member states should continuously carry out thorough, in-depth screening and monitoring of the activities of roving DPRK diplomatic and service passport holders—particularly those using false identities and passports—who enter, transit, or otherwise conduct business in their territories.
- All relevant information that is uncovered during these processes should be communicated to the UN Panel of Experts. The appropriate levels of confidentiality and immunity should be in place at all stages of these processes.

## Introduction

North Korean<sup>1</sup> conventional arms transfers were first prohibited globally through the adoption of UN Security Council (UNSC) Resolution 1718 (UNSC, 2006), after the country's first nuclear weapon test. This prohibition was extended in Resolution 1874 (UNSC, 2009) after the second such test to include exports of small arms and light weapons and other arms-related material and services.<sup>2</sup> Despite the adoption of seven further major UNSC resolutions in 2013, 2016, and 2017,<sup>3</sup> the DPRK has continued to smuggle weapons, frequently using global logistics companies and channelling nearly all funds through the international financial system via unwitting local, regional, and global banks.

This Briefing Paper reviews DPRK smuggling patterns and mechanisms involving both sea and air transportation, including the critical—yet hitherto unreported—expansion of the country's ballistic missile technology trading partnerships to small arms smuggling. The paper highlights deceptive practices that continue to negate sometimes minimal banking and logistics sector sanctions-compliance efforts and describes how North Korean diplomats who are banned from travelling use false passports and exploit INTERPOL loopholes to continue their smuggling activities. In its final sections the Briefing Paper examines the types of arms and military services that North Korea brokers and exports. Throughout the paper—and particularly in its conclusion—the study focuses on private sector proliferation audits and information-sharing and risk assessment measures that UN member states could deploy to curb the DPRK's arms-smuggling activities and its transfer of other prohibited commodities that generate foreign revenue for the country's nuclear weapons and ballistic missile programmes.

## Smuggling patterns and mechanisms

The arms and related materiel that North Korea smuggles vary significantly in their technological sophistication, age, condition, and origin. They range from decades-old variants of Soviet- and Chinese-designed small arms sourced in the DPRK to high-end military communications equipment, radar components, ballistic missile technology, and other arms-related material manufactured by companies headquartered in locations as diverse as mainland China, Hong Kong, Malaysia, the Russian Federation, Singapore, the United Kingdom, and the United States. While the DPRK has reportedly

supplied or attempted to supply more than 30 states, territories, and armed groups with prohibited arms-related material and services in the past decade, the consolidated trend analysis presented in this Briefing Paper shows that many of the country's most important conventional arms customers are those with whom it has enjoyed a clandestine ballistic missile technology trading relationship for as long as 40 years. North Korea's strategic and secretive ballistic missile trading relationships with countries such as Egypt, Iran, Libya, Myanmar, Syria, and Yemen, which in most cases pre-date UN sanctions, have continued despite the international prohibition and have expanded to the field of conventional arms, including small arms and light weapons.

The largest interdicted shipment of North Korean light weapons was found on board a North Korean-controlled vessel named the *Jie Shun*. Egyptian authorities boarded the ship after receiving an alert from another country shortly after the vessel entered Egyptian territorial waters in August 2016. Beneath 2,300 tonnes of iron ore the Egyptian officials found 79 wooden crates containing 24,384 disassembled DPRK-made PG-7-pattern F7 rocket-propelled grenades (RPGs), together with components for an additional 4,616 RPGs (UNSC, 2017b, pp. 28–29). This was—and remains—the largest seizure of ammunition in the history of sanctions against the Democratic People's Republic of Korea' (UNSC, 2017b, p. 4). The UN Panel of Experts inspected the vessel and its cargo and noted that the crates holding the RPGs were prominently marked 'Al-Sakr Cairo' and bore the address of Al-Sakr Factory for Developed Industries,<sup>4</sup> which was also listed as the consignee of the shipment in documen-

tation found on the vessel (UNSC, 2018, p. 38).<sup>5</sup> The Panel of Experts stated that Al-Sakr 'and its parent company have reportedly had a long-standing relationship with the Democratic People's Republic of Korea, including in the field of ballistic missiles' (UNSC, 2018, p. 38).<sup>6</sup> This relationship originated in Egypt's ballistic missile technology transfers to and from the DPRK that began in 1975 (Bermudez, 1999, p. 6). In other words, the *Jie Shun* shipment was not a single isolated incident, but part of a decades-long clandestine trading relationship between North Korea and Egyptian state-controlled arms companies involving a wide spectrum of larger rocketry and smaller light weapons.

Similarly, Iran has enjoyed more than three decades of ballistic missile cooperation with North Korea dating back to at least 1987 (Wezeman, 2004, pp. 545–49; Wezeman et al., 2007, pp. 400–02), which expanded after the adoption of UN sanctions in 2006 to include prohibited conventional arms. North Korea has dispatched multiple illegal consignments of small arms and light weapons, including man-portable air defence systems (MANPADS), to Iran, some of which have been intercepted, as well as larger conventional arms such as submarine torpedoes.<sup>7</sup> The same pattern of continuing clandestine trade subsequently prohibited under the UN embargo is to be found in Syria, to where the DPRK has shipped ballistic missiles since at least 1991 (Middlebury Institute, 2018). After the adoption of the arms embargo North Korea has exported and attempted to broker to Syria a wide array of conventional arms, military equipment, and chemical warfare (CW) protection equipment. This includes surface-to-air missiles (SAMs), encrypted military radios, CW protection suits, gas masks, chemical

agent test kits (UNSC, 2012, pp. 27–29; 2018, pp. 48–52; 2019, pp. 41, 43), and light weapons that range from 30 mm grenade launchers to six-barrel 7.62 mm machine guns (UNSC, 2018, p. 52).

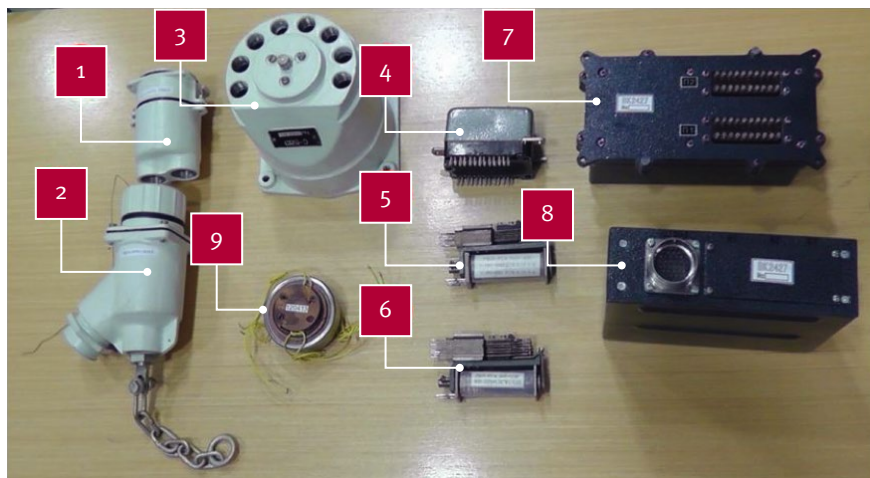
Yemen, Myanmar, and Libya have also received arms and equipment from North Korea. In 2016 the DPRK sought to extend ballistic missile cooperation with Yemen dating from the 1990s to the field of small arms and light weapons, with a protocol on military cooperation and an offer of assault rifles, machine guns, RPGs, anti-tank missiles, and MANPADS (UNSC, 2019, p. 44). North Korea is also reported to have supplied both ballistic missile technology and conventional arms to Myanmar's Directorate for Defence Industries (UNSC, 2018, p. 43). In 2015 and 2017 North Korea attempted to capitalize on ballistic missile cooperation with Libya, which was curtailed in 2004, with offers of arms and ammunition and other military cooperation projects (UNSC, 2019, p. 35).

## The role of diplomacy

The element common to all of these attempted, interdicted, and confirmed deliveries of prohibited goods is the key role played by North Korean embassies and their accredited and roving diplomatic staff. In the case of Egypt and Myanmar, the North Korean ambassadors to Cairo and Yangon were expelled for acting on behalf of the Korea Mining Development Trading Corporation (KOMID), the DPRK's primary arms dealer and main exporter of goods and equipment relating to ballistic missiles and conventional weapons.<sup>8</sup> In Iran and Syria the UN designated six North Korean diplomats accredited at North Korea's Tehran and Damascus embassies as acting on behalf of KOMID and its affiliated Tanchon Commercial Bank.<sup>9</sup> The UN Panel of Experts has identified additional North Korean diplomats in Cairo (UNSC, 2019, p. 33) and Damascus (UNSC, 2019, pp. 42–43) as having been involved in prohibited arms transfers. Small arms procurement negotiations with Houthi representatives from Yemen were conducted at the North Korean Embassy in Damascus. North Korea has also made several attempts, including through its ambassador to Tripoli (UNSC, 2019, p. 35), to renew military cooperation with Libya.

As indicated above and elsewhere in this paper, Pyongyang's most important customers have been served by DPRK diplomats and embassies in-country, while the KOMID chairman and the president of Green Pine Associated Corporation (Green Pine)—together with other diplomatic passport holders—are known to have visited a number of North Korea's partner states

Image 1



Interdicted Scud components shipped by Maersk subsidiary NTS (UNSC, 2017b, p. 37) destined for Egypt in 2013 (items 1–3, connectors; 4–6, relays; 7–8, voltage circuit breakers; 9, barometric switch).

Source: UNSC (2016a, p. 31)

**Box 1** Implementation gap: DPRK diplomats and INTERPOL Special Notices

In August 2017 the UNSC asked INTERPOL to issue Special Notices (UNSC, 2017c, para. 23) to alert law enforcement authorities in the latter's 191 member states to the illegal activities of more than 70 designated North Korean nationals—nearly all of whom use DPRK diplomatic and service passports. INTERPOL, however, has not complied with this request. This means that its member states cannot share or update biometric or other passport information on UN-designated North Korean arms smugglers through the primary multilateral law enforcement information-sharing platform currently used to alert INTERPOL members to the identities of sanctioned individuals.<sup>10</sup> This lack of effective sharing of biometric data among the world's law enforcement agencies is exacerbating the problem of identifying and monitoring designated North Korean diplomats engaged in arms smuggling who have been documented as travelling using different diplomatic passports and, in some cases, using false identities or aliases (UNSC, 2018, p. 49; 2019, pp. 161–64). In the absence of INTERPOL Special Notices, practical risk assessment and risk analysis dictate that the organization's member states should subject all North Korean diplomatic and service passport holders to greater scrutiny and monitoring when these passport holders enter, transit, or otherwise conduct business in territories under INTERPOL member states' jurisdiction.

(UNSC, 2017b, pp. 68–70). In fact, this use of diplomatic resources is a distinguishing feature of North Korean arms embargo violations. Curbing the DPRK's conventional arms and ballistic missile trade, as well as the country's smuggling of a host of other sanctioned commodities, will therefore require increased attention to its embassies and accredited diplomats, and the roving envoys of KOMID, Green Pine, and these organizations' newer aliases who travel on North Korean diplomatic and service passports.<sup>11</sup>

**The manipulation and falsification of shipping and banking data**

The consolidated trend analysis shows that the DPRK routinely manipulates shipping and banking data to thwart the efforts of national governments and private industry to detect sanctioned DPRK arms-trading and related activities.

One such practice is to mask DPRK or designated entity involvement in arms transfers through the use of foreign front companies and foreign nationals who do not appear in either UN or national sanctions lists<sup>12</sup> (or in other, so-called 'denied party' screening lists<sup>13</sup> used by the banks and logistics companies that facilitate such transfers). North Korea uses this practice for the majority of arms-related material that is transported, not by vessels it controls, but through global supply chains. The country has made extensive use of global express and courier companies for smuggling operations, as well as for the shipment of ballistic missile-related items from other countries to North Korea.

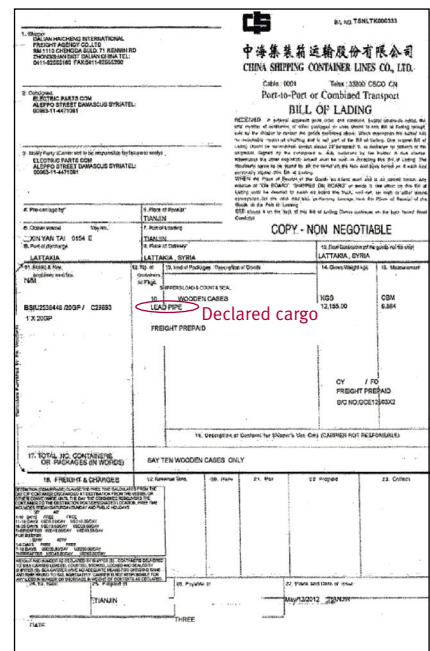
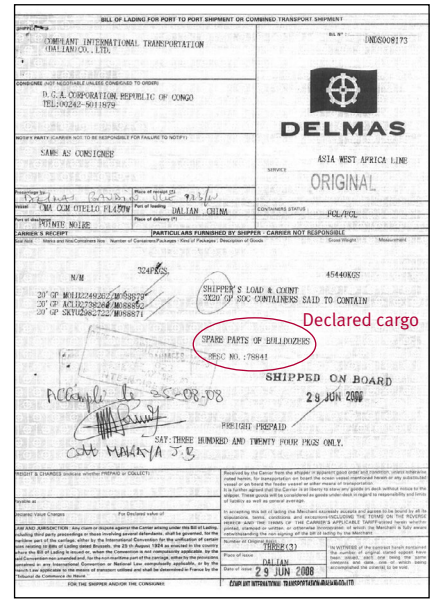
The rapid creation of front companies and new aliases for these companies has

allowed designated North Korean entities, often acting through foreign nationals, to successfully defeat banking and industry compliance procedures, and to routinely transport prohibited goods via the world's largest container shipping lines, commercial airlines, and global logistics companies.

Other more rudimentary shipping documentation manipulation designed to prevent the detection of prohibited shipments includes the use of false or incomplete commodity descriptions. This tactic is most effective when used in conjunction with consignments transported in sealed maritime shipping containers, less than 2 per cent of which are typically physically inspected to verify their contents. In this way North Korean proliferation and arms-smuggling networks have adopted the smuggling tactics first pioneered by transnational drug-trafficking organizations to ship the majority of their reported arms-related material through mainstream maritime container shipping lines and airlines (UNSC, 2012; Griffiths and Jenks, 2012).

Images 2 and 3 show two shipping documents with falsified commodity descriptions. The top document is a bill of

Images 2 and 3



Shipping documents with falsified commodity descriptions. Source: UNSC (2013c, pp. 77, 100)

**Box 2** Vessel data concealment: extending an arms-smuggling technique

North Korean-controlled vessels suspected or known to have engaged in arms smuggling have attempted to conceal their illegal activities by turning off or otherwise manipulating their automatic identification system (AIS), which would normally broadcast their identity, location, destination, and other data worldwide. This practice, which is a violation of international maritime organization (IMO) regulations, has increased massively since 2017, when the UN banned the export of North Korean coal and the country's import of unreported petroleum products. As a result, a technique first pioneered by arms-smuggling vessels to avoid detection has been adopted by dozens of North Korean bulk carriers and tankers carrying prohibited coal and petroleum products to and from North Korea (UNSC, 2019, pp. 7–24). The UN Panel of Experts has recommended more effective AIS screening of bulk carriers and tankers so that flag states and the shipping and finance companies that are responsible for the vessels or their cargoes may be alerted through AIS monitoring to potential sanctions violations involving these vessels (UNSC, 2019, p. 30).

lading for a shipment of arms and related material to the Republic of the Congo. South African authorities found the shipment on the *Westerhever* in October 2009 (UNSC, 2012, p. 30). The shipped items are described as ‘parts for bulldozers’. The bottom document is a bill of lading for a shipment of UN-prohibited graphite cylinders used in the nose cones of Scud ballistic missiles. The shipment was destined for a known front company of Syria’s Scientific Studies Research Centre (SSRC), which the United States and European Union (EU) had designated as being responsible for Syria’s chemical weapons and ballistic missiles programmes (UNSC, 2013c, pp. 24, 77). The document falsely describes the cargo as ‘lead pipe’.

DPRK smuggling networks frequently make use of inaccurate or vague commodity descriptions when using global maritime container shipping vessels and commercial airlines. In these contexts shipping documentation may be subject to export controls, dangerous goods, or other checks by government officials, as well as cursory document inspections by the carriers themselves.

The consolidated trend analysis of captured shipping documentation shows that DPRK smugglers and their foreign counterparts exporting prohibited items to more closely monitored destinations, such as Syria, further strengthen these deceptive practices by providing entirely false or misleading information about the parties to the transfer. These include the shippers, consigners, and end users, as well as the owners or managers of other entities involved in the operation. When smuggling illicit goods to Syria, which is itself subject to EU and US arms embargoes, North Korea has taken obfuscation a step further as part of an ongoing programme to supply the Syrian government with ballistic missile technology, conventional weapons, and dual-use goods by using front companies operating on behalf of Syria’s SSRC. Project Alpha at King’s College London reported that after a number of successful interdictions resulting from the identification of the SSRC front companies in maritime shipping documentation, suppliers from several countries—including the DPRK—established a parallel system whereby the documentation needed to take delivery of the cargo was sent separately through companies such as DHL, either to the DPRK embassy in Damascus or to another address in Syria (Brewer, 2017, p. 67). Using these documents, North Korean diplomats working on behalf of KOMID and Syrian SSRC staff travelled to the port of Latakia to claim the container shipments (UNSC, 2018, pp. 48–53).

Trafficking networks contracted by the DPRK to fly arms to other closely monitored destinations, such as Iran, create front companies—and fictitious personnel for these companies—in advance of the planned transfers in order to deflect legal responsibility should the arms be intercepted. For example, the ‘director’ of one of the many shell companies involved in a 2009 shipment that was interdicted in Bangkok proved to be a complete fiction. UN investigators later determined that the ‘male Spanish citizen’ listed in the documentation did not live at the indicated address, and that his passport number actually belonged to a woman (UNSC, 2013c, pp. 85–86).<sup>14</sup> Similarly, in documents from the shipment involving the *Jie Shun*, the address listed for the shipper is actually that of a hotel in Dalian, China (UNSC, 2017b, p. 29).

Despite the availability of certain risk indicators, the DPRK and its agents have managed to channel funds associated with arms-related material and services without too much difficulty, often involving correspondent banks in New York, United States, and Frankfurt, Germany, for dollar and euro transfers, respectively (UNSC, 2019, p. 57; UNSC, 2010a, p. 66).<sup>15</sup> Even in cases where a bank has blocked the transfer of illegal funds, North Korean diplomats have found an alternative bank.<sup>16</sup> In such instances the large sums of money involved—in excess of EUR 1.5 million (USD 1.7 million)—may trigger a suspicious activity report (SAR) on the part of banks; but, generally, North Korean smuggling networks appear to transfer far smaller amounts via the international banking system, limiting more obvious exposure.<sup>17</sup>

### Box 3 Stemming the flow: proliferation audits and information sharing

At the request of the UN Panel of Experts, a major maritime container shipping company searched its shipment records for consignment descriptions relating to a particular DPRK arms-smuggling operation in Africa. The results of the container shipping company’s search of its records on a particular company and commodity description provided the Panel of Experts with evidence of additional earlier weapons shipments and the means to identify previously unknown North Korean companies, networks, and customers engaged in arms smuggling.

The timely sharing of information on North Korean shipments, such as cargo descriptions and company addresses, would allow authorities in transit and transshipment countries, as well as compliance staff at global logistics companies and financial institutions, to better identify high-risk shipments and detect deliveries of prohibited North Korean cargo via their vessels, aircraft, and ports. Future efforts to counter both arms smuggling and the illegal export of other North Korean commodities, such as coal and iron ore, will also require the regular updating of information on:

- new aliases;
- front companies;
- their addresses and contact numbers;
- the names of individuals operating on behalf of sanctioned DPRK entities; and
- North Korean diplomatic passport holders and diplomatic premises involved in smuggling.

UN Panel of Experts reports have proved to be a useful resource for a smaller number of proactive banks seeking to effectively comply with UN sanctions. However, a recent survey of bank compliance officers showed that only 25 per cent of respondents at international banks consulted the UN Panel reports, while only 3 per cent of respondents at national banks did so (Dall and Walker, 2020, p. 4). These reports are only published once or—at most—twice a year, however, and have sometimes been blocked or delayed by members of the Security Council that are unhappy with their content. Given the scope and scale of North Korean sanctions evasion activities, coupled with the lack of focus on such reports across swathes of the financial sector, the establishment of new collaborative information-sharing mechanisms appears to be urgent.

As a first step, container shipping lines, global logistics companies, and banks should conduct forensic audits of their databases using the identifiers contained in all UN Panel of Experts reports on North Korean sanctions violations to screen for past DPRK-related use of their services, maritime vessels, and aircraft. These forensic proliferation audits would also yield information on other newer DPRK front companies and other entities acting on their behalf that have not yet appeared in published UN reports. In short, these forensic audits would alert these companies to a range of suspect transactions and entities, allowing for more effective sanctions compliance and for the broader sharing of relevant information via UN member states with the UN Panel of Experts.

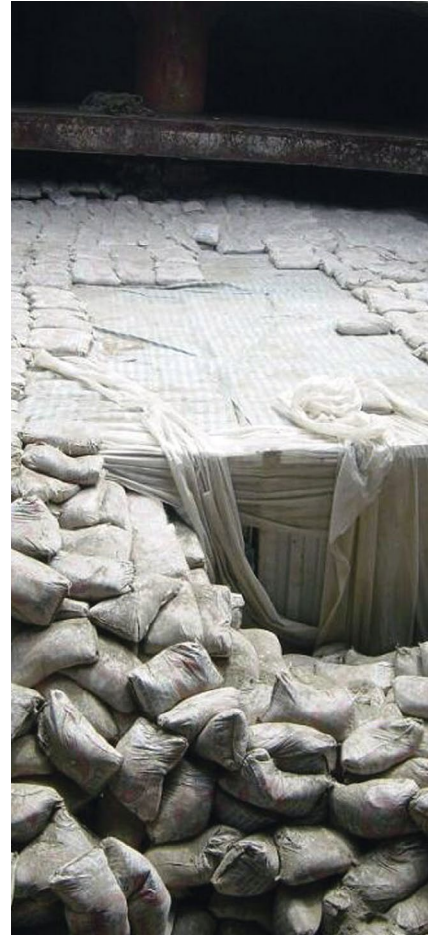
## Arms concealment on board North Korean vessels

The DPRK also transports arms, ammunition, and other illicit items on board vessels under its control, typically hidden under large quantities of other commodities. This technique is restricted to the DPRK's fleet of bulk maritime carriers.<sup>18</sup> Tonnes of iron ore, sugar, or cement are loaded onto the vessel with the arms concealed underneath. This concealment method generally prevents foreign coast guard or naval vessels from conducting an effective search of the vessels' holds at sea, because only ports have the requisite heavy cranes, excavators, and storage space necessary to remove the bulk cargo and expose the hidden arms. When combined with direct voyages from North Korea to the intended recipient, this tactic typically safeguards the cargo against discovery (Griffiths and Siirtola, 2013), because the vessels may only be inspected in international waters with the consent of the flag state, which North Korea does not grant (Griffiths and Jenks, 2012, p. 34).

It is therefore no coincidence that the largest arms interdictions of North Korean-controlled bulk carriers occurred as both vessels approached two of the world's most famous maritime 'choke points'—the Suez and Panama canals—where they entered countries' territorial waters and rendered their cargo holds liable to inspection by the port state under the UN sanctions regime and the UN Convention on the Law of the Sea. One example of this was the *Jie Shun* seizure in Egyptian waters, described above. The other is that of the *Chong Chon Gang*, a DPRK-owned bulk carrier that Panamanian authorities interdicted in July 2013. The 240 tonnes of arms and equipment on board the ship were hidden beneath 200,000 bags of sugar (UNSC, 2014, pp. 26, 71). The two other known examples of this concealment technique pre-date sanctions and involve the North Korean bulk carriers *So San* (see Images 4–6) and *Ku Wol San* (see Images 17–19), which were searched under different circumstances.

Some of these concealment methods are time-tested tactics that governmental and non-governmental entities use in every region of the world. What differentiates the tactics used by North Korean maritime arms-smuggling operations from all other arms-trafficking networks is their scope and scale. No other arms-trafficking network has access to a fleet of bulk carriers as large as the DPRK fleet. The North Korean Maritime Administration also falsifies documents and vessel identities on behalf of entities that the UN lists for

Images 4–6



North Korean Scud ballistic missiles destined for Yemen concealed under tonnes of cement on board the vessel *So San* when it was inspected in 2002.

Source: Spanish Ministry of Defence via UNSC (2014, p. 44)

their sanctions violations, and falsifies the maritime mobile service identities (MMSIs) and call signs of the vessels owned by sanctioned entities.<sup>19</sup> UN Panel of Experts investigations have also highlighted how North Korean diplomats in Asia, Africa, the Middle East, and South and Central America have represented DPRK shipping companies engaged in arms smuggling (UNSC, 2015, pp. 52–64). The use of North Korean-controlled and -crewed ships is particularly important when clandestine shipments are too large or bulky to fit into individual shipping containers, since it is often impossible to hide such shipments from the officers and crew of the ship on which they are being transported. In fact, North Korean crews have resisted inspections in the past, with India's inspection of the *Ku Wol San* in 1999 (see Images 17–19) and Panama's seizure of the *Chong Chon Gang* in 2013 being two prominent examples of this.

## The use of flags of convenience

The use of flags of convenience other than the DPRK flag<sup>20</sup> on board North Korean-controlled and -crewed vessels is another long-standing obfuscation technique that the DPRK has employed. It is sometimes part of a multifaceted effort to conceal or obscure the identity or governmental affiliation of maritime vessels engaged in embargo violations, and to evade UN sanctions imposed on specific vessels linked to smuggling. While one typically thinks of maritime vessels when discussing flags of convenience, the phenomenon also extends to aircraft (UNSC, 2013c, p. 50).

Maritime vessels and aircraft operating under flags of convenience are in fact more likely to be knowingly involved in arms smuggling (Griffiths and Bromley, 2009; Griffiths and Jenks, 2012, p. 12). Not all flags of convenience jurisdictions are equally lax—or lax in the same ways—and the list of states regarded as providing flags of convenience changes as governments strengthen or relax their rules and regulations on shipping that bears their countries' flags. Yet many flags of convenience jurisdictions, including the DPRK, do not enforce proper safety standards on board their vessels and as such are more regularly targeted for inspection by port state control authorities. In the case of North Korea such inspections have been used in innovative ways to conduct thorough investigations of North Korean-flagged vessels (Griffiths and Jenks, 2012, p. 33). Other flags of convenience with poor safety standards that North Korean-

controlled vessels have used for arms smuggling include those of Belize, Cambodia, and Sierra Leone. The UN Panel of Experts has identified more than ten other flags of convenience that vessels engaged in the smuggling of coal and petroleum products to and from North Korea have used.

## Smuggling by air

The DPRK smuggles arms-related material by air as well as by sea. UN investigators have documented shipments on chartered cargo flights, regular cargo flights, and regularly scheduled passenger flights. The largest publicly identified DPRK arms shipment transported by aircraft is a 35-tonne consignment found on an Ilyushin 76 cargo aircraft in December 2009 (UNSC, 2013c, p. 32). The rockets, RPGs, and MANPADS found on board the aircraft were en route to Iran when Thai authorities discovered them. Reports placed the value of the shipment at more than USD 16 million. Other suspect charter flights have involved North Korea's national carrier, Air Koryo, whose fleet of Ilyushin 76 aircraft fall under the control of the DPRK military and have been subject to UN Panel of Experts investigations for sanctions violations (UNSC, 2014, pp. 50–51; 2017b, pp. 53–54). The Panel of Experts also investigated attempted Air Koryo Ilyushin 76 flights to Syria (UNSC, 2013c, pp. 47–48, 121) and attempted non-scheduled Ilyushin 62 flights to Syria and Iran that were to transport North Korean ballistic missile technicians and equipment.<sup>21</sup> Since the adoption of UN sanctions, Middle Eastern and Central Asian member states have tended to deny overflight permission for such transfers, and the 2009 Bangkok seizure indicates how closely cargo charter flights from the DPRK are often monitored. As a result, Air Koryo Ilyushin 76 flights are restricted to neighbouring China and the Russian Federation.

Since the 2009 Bangkok interdiction all documented cases of arms-related smuggling by air have involved commercial airliners operated by some of the world's most prestigious air carriers.<sup>22</sup> North Korean ballistic missile and conventional arms technicians and trainers have also flown to African and Middle Eastern destinations such as Angola, Egypt, Iran, Mozambique, Namibia, Sudan, Syria, Tanzania, and Uganda by transiting Chinese and Russian Federation airports and Middle Eastern and African hubs that include Dubai and Addis Ababa. Arms-related material is often transhipped on board two or more aircraft operated

by different carriers. Where interdiction has occurred it is generally at the second or third transshipment point. The DPRK also uses passenger flights to smuggle arms-related material. One notable example is a 2009 consignment of engines for armoured vehicles and main battle tanks shipped from Beijing to Brazzaville in the Republic of the Congo by Ethiopian Airlines. The shipment, which weighed five tonnes, originated in North Korea and was transhipped through China. It is noteworthy because of the weight of the items and the fact that it was transported on a regularly scheduled passenger flight operated by a major regional carrier (UNSC, 2013c, pp. 39, 108).

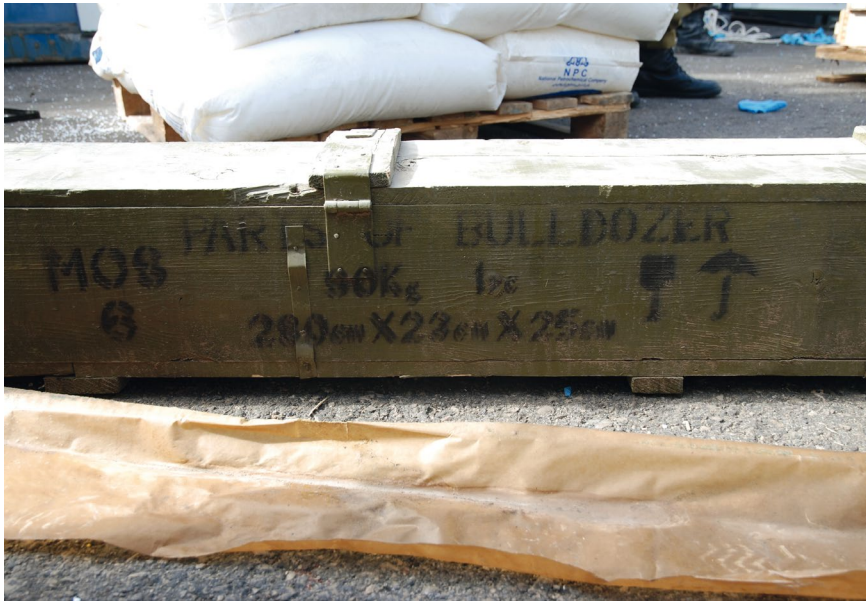
North Korean diplomatic passport holders and foreign nationals have routinely carried smaller quantities of more innocuous-looking arms-related material on board passenger aircraft, as well as bulk cash amounts associated with arms payments. In 2000 authorities at Zurich airport discovered North Korean parts for Scud missiles in the bag of a Taiwanese businessman travelling to Libya. The man was eventually released, but was arrested again in 2005 for the same offence, this time in Taiwan (Warrick, 2003; Getty Images, 2005). These cases and others highlight the need for vigilance on the part of border control and customs officials when they encounter DPRK diplomatic and service passport holders at airports.

## Re-marking and mislabelling

Most manufacturers of arms and ammunition place markings on their products that convey key information about the type, model, manufacturing date and location, lot or serial number, and composition of the items. Traffickers re-mark (or repaint) arms and ammunition to hide their provenance and to conceal potentially undesirable characteristics, such as advanced age. The most prominent example of the DPRK's use of this technique is the repainting of disassembled RPG rounds found on the *Jie Shun* in 2016 (UNSC, 2017b, p. 30). The North Korean-made F7 RPG round has a distinctive colour and marking scheme: the warhead is dark grey or green and has a bright red band around the middle, and the model designation and year of manufacture are clearly marked on the base of the warhead. It is easily recognizable, even from a distance. The RPG warheads found on the *Jie Shun* differ from this in several ways. They lack the signature red bands found on other F7s and have a different marking scheme. Additionally, the model designation on



## Images 7–9



Mislabelled crates for 122 mm rockets found on the MV *Francop*.

Source: Israel MFA (2009)

the warheads found on the *Jie Shun* consists of a generic reference to the pattern of round ('PG-7V'), whereas most previously documented F7 warheads are marked with a specific model designation ('F-7').<sup>23</sup>

Shortly after the *Jie Shun* was intercepted UN investigators were granted access to the ship's cargo. A careful inspection of the seized RPG rounds revealed that they had been re-marked. 'The markings indicated that they were manufactured in February 2016', observed investigators, 'but the Panel's on-site analysis revealed that they were not of recent production but rather had been stockpiled for some time' (UNSC, 2017b, p. 29). The investigators also noted that the plastic storage tubes for the RPGs lacked markings, which they described as 'an additional layer of obfuscation' (UNSC, 2017b, p. 29). Similar alterations were made to weapons and materiel in other seized shipments. The trailers for the SAM system found on board the *Chong Chon Gang*, which were originally painted green, had been repainted blue to conceal the 'military origin and nature' of the items, according to UN investigators. The Panel of Experts also documented the removal of Cuban military insignia from MiG-21 aircraft found in the same shipment (UNSC, 2014, pp. 71–72, 74).

The DPRK also re-marks or attempts to conceal the markings on storage crates for arms and ammunition, a tactic that predates the adoption of UN sanctions. Among the examples is the mislabelling of weapons crates found on the *Francop*, which contained a shipment of arms from Iran to Syria. The Panel of Experts believed that some of these weapons 'may have originated from the Democratic People's Republic of Korea' (UNSC, 2014, p. 38). In photos of the crates posted online the words 'PARTS OF BULLDOZER' are stencilled across the side (see Images 7–9). The crates actually contained 122 mm rockets (Israel MFA, 2009). The Panel of Experts stated that relabelling of this kind was 'a standard deceptive practice used by the Democratic People's Republic of Korea' (UNSC, 2014, p. 38). Falsely labelled crates containing North Korean weaponry have also been photographed in Libya, the Republic of the Congo, and the Democratic Republic of the Congo (DRC).<sup>24</sup>

## Retransfers and supplying non-state actors

While many of the arms smuggled at the direction of DPRK diplomatic and service passport holders are either newly produced or sourced from North Korea's

Image 10



The North Korean-flagged cargo ship Chong Chon Gang sits docked at a container terminal after it was seized by the Panamanian authorities. Colon City, Panama, July 2013. Source: Arnulfo Franco/KEYSTONE-ATS/AP Photo



legacy stocks, some are clandestinely re-exported by importing states, sometimes decades after the original transfer. One such shipment was found on the MV *Franconia*, an Antigua-flagged merchant ship travelling to Syria in 2009 and interdicted by Israeli authorities operating in the Mediterranean Sea (Israel MFA, 2009) (see Images 11–14).

The Israeli government identified Iran as the source of the seized shipment, which included thousands of Iranian-made artillery rockets, mortar rounds, and hand grenades. But the authorities also found items of North Korean origin. These included rockets fuses and crates similar to those found on board the *Ilyushin 76* interdicted in Bangkok and bound for Iran that same year, as well as rocket fuses identical to those found in another 2009 North Korean arms shipment to Iran that was seized on board the shipping vessel *ANL Australia* (UNSC, 2010a, p. 25). These transfers occurred at a time when KOMID representatives were working out of the North Korean Embassy in Tehran as accredited diplomats prior to their removal in 2016. Iran remains one of North Korea's 'two most lucrative markets', with both the main suppliers of conventional arms and ballistic missile technologies—KOMID and Green Pine—maintaining offices in Tehran operating under aliases (UNSC, 2019, p. 34).

North Korean weapons were also found in another Iranian arms shipment that was interdicted in the Arabian Sea in 2016. The shipment, which consisted of approximately 1,500 AK-pattern rifles, 21 DshK machine guns, and 200 RPG-7-pattern launchers, was found on a dhow that was reportedly headed for Yemen (Navy.mil, 2016). While many of the weapons were Iranian made, some were produced in other countries, including North Korea. According to US officials interviewed by the Survey, the weapons of North Korean origin were used AK-pattern assault rifles dating back to the 1970s and 1980s.<sup>25</sup> It is likely that they had been in Iranian inventories for years or decades prior to the shipment.<sup>26</sup>

In addition to transfers to government entities, numerous armed groups and other non-governmental end users in Africa and the Middle East, including UN-designated terrorist organizations such as IS, also appear to have acquired North Korean-made arms or ammunition (CAR, n.d.). Cases confirmed by the UN Panel of Experts include 122 mm and 107 mm rockets and fuses captured in 2013 from M23, an armed group operating in eastern DRC. Online investigation organizations such as Oryx have suggested that

## Images 11–14



Fuses, rockets, and crates found on board the MV *Francop* similar or identical to other North Korean munitions interdicted en route to Iran in 2009.

Source: Israel MFA (2009)

large quantities of anti-tank guided weapons (ATGWs) and MANPADS allegedly acquired by non-governmental end users in Syria are of North Korean origin.<sup>27</sup>

## Illegal arms, related materiel, and services supplied by the DPRK

North Korea supplies a wide variety of illegal arms and related material, ranging from relatively basic small arms designs to more advanced missile systems. The following sections review the major categories of weapons and services that the DPRK has sent abroad in recent years. This overview is not exhaustive; a full accounting of the illicitly exported items that UN investigators and others have documented is beyond the scope of this paper. The documented transfers are only a subset of all embargo violations, the ultimate scale of which is unknown.<sup>28</sup>

## Small arms and light weapons

Despite the UN sanctions, the DPRK offers a wide array of small arms, light weapons, and their ammunition for export, including more technologically advanced items such as MANPADS. Table 1 contains prominent examples that the UN Panel of Experts has investigated of DPRK attempts to export small arms. The scope and scale of North Korean small arms and light weapons available for export are also revealed in correspondence between private international arms dealers and roving North Korean arms traffickers travelling on diplomatic passports. These negotiations, conducted via email, highlight the wide range and large quantities of stockpiled North Korean weaponry available for sale on international markets through KOMID, its subsidiaries, and aliases, with prospective deals valued at as much as USD 100 million (UNSC, 2013c, pp. 38–39, 106; 2016a, pp. 73–74, 276–90).

## Other conventional weapons

The international trade in North Korean weapons and military equipment extends well beyond small arms and light weapons. UN investigators have reported on suspected and confirmed transfers of a broad range of conventional weapons systems ranging from 122 mm rockets to military communications equipment. Table 2 contains several examples of recent attempted and successful transfers of conventional weapons exported or brokered by the DPRK.

While some of these transfers include complete systems, many consist solely of parts, usually for use in the repair, refurbishment, and upgrading of weapons and military equipment already in the inventories of client states. As UN investigators have documented, these weapons include tanks, armoured personnel carriers, artillery and mortar systems, military aircraft, missile systems, and submarines, many of which

are Soviet-designed systems originally fielded in the 1960s and 1970s. Some projects are completed in the client state with spare parts and other materials imported from companies headquartered in countries as diverse as China and the United States.<sup>29</sup> Other projects are completed in the DPRK.

Shipments associated with refurbishment projects are occasionally interdicted, resulting in not only the loss of valuable materiel by the client state, but also the potential imposition on it of diplomatic and economic sanctions. The high cost of doing business with the North Koreans is illustrated by the US response to the *Jie*

*Shun* incident. In 2017 US officials told the *Washington Post* that the arms shipment found on the *Jie Shun*, together with other unspecified 'clandestine deals' between the Egyptian and the North Korean governments, led to the 'freez[ing] or delay' of close to USD 300 million in military aid for Egypt (Warrick, 2017).<sup>30</sup>

**Table 1** Representative sample of reported attempted and confirmed North Korean exports of small arms, light weapons, and ammunition, 2008–16

Year	Items	Transport mode	Interdiction point (when applicable)	Intended or actual recipient
2008	70–100 MANPADS, RPGs, light machine guns	Aircraft	N/A	Azerbaijan
2009	RPG-7-pattern launchers, RPG-7-pattern rounds, 240 mm rockets, rocket fuses, MANPADS	Aircraft	Bangkok	Iran
2009	11,000 RPG projectiles, 120,000 RPG fuses, 9,776 122 mm fuses, detonators	Maritime shipping containers	United Arab Emirates (UAE)	Iran
2013	MANPADS	Unspecified	N/A	Mozambique
2014–15	Automatic pistols, assault rifles, anti-tank mines, anti-personnel mines	Unspecified	N/A	DRC
2015	USD 100 million worth of assault rifles, sniper rifles, machine guns, mortars, associated ammunition, and arms-related materiel	Maritime vessel	N/A	UAE
2016	24,384 disassembled PG-7-pattern RPGs and components for an additional 4,616 RPGs	Maritime vessel ( <i>Jie Shun</i> )	Egyptian territorial waters	Egypt

Sources: UNSC (2013c, pp. 33, 74; 2014, p. 39; 2016a, pp. 276–90; 2017a, p. 14; 2017b, pp. 29, 41)

**Table 2** Representative sample of reported and confirmed DPRK-linked transfers of conventional weapons and provision of repair services, 2008–16

Year of initial transfer	Items	Transport mode	Interdiction point	Destination country
2008	Five tonnes of military equipment, including engines of main battle tanks and armoured vehicles	Commercial airliner	N/A	Republic of the Congo*
2009	Tank tracks, periscopes, Geiger counters, tank crew helmets, camouflage painted plates, external oil and fuel tanks, and other materiel	Maritime shipping container vessel ( <i>Westerhever</i> )	South Africa	Republic of the Congo*
2009	Approximately 35 tonnes of conventional arms and munitions, including 240 mm rockets and rocket fuses	Cargo aircraft	Thailand	Iran
2011	Navigation and other electronic items for military patrol boats	Commercial airliner	N/A	Angola
2011	Spare parts for Yugo-class submarines	Commercial airliner	Taipei airport	Vietnam
2013	Six trailers for SAM systems, two disassembled MiG-21 aircraft, 15 aircraft engines, components for SAM systems, and other materiel	Bulk carrier vessel ( <i>Chong Chon Gang</i> )	Atlantic side of the Panama Canal	North Korea (originating from Cuba)
2013	Components for P-18 early warning radar systems, components for T-55 tanks, and Pechora (S-125) SAM systems	Commercial airliner; maritime shipping container vessel	N/A	Mozambique
2013	100 122 mm precision-guided rocket control sections and 80 air attack satellite guided missiles	Commercial airliner; maritime shipping container vessel	N/A	Sudan
2013	Repair of Pechora (S-125) SAM systems and P-12 air defence radar	Unknown	N/A	Tanzania
Various	Components for SAM systems, broadband communications equipment, ultra-long-distance detection radar, and other materiel	Aircraft; maritime shipping container vessel	N/A	Syria

\* According to the UN Panel of Experts, the two shipments to the Republic of the Congo were part of a 'broad operation conducted by a Democratic People's Republic of Korea company and aimed at the reconditioning of more than 100 pieces of artillery materiel and armoured vehicles in the Republic of the Congo' (UNSC, 2011, p. 31).

Sources: UNSC (2013c, pp. 33, 39; 2014, 2015, pp. 34, 36; 2016a, p. 42; 2017a, p. 41; 2017b, pp. 14–15)

These and other examples of sanctions imposed on importers of DPRK weapons and users of DPRK repair/refurbishment services lead one to question why states enter into contracts with North Korean entities. As UN investigators have explained, governments often have a hard time finding defence service providers who are both willing and able to repair and refurbish ageing Soviet-designed weapons systems. Many companies lack either the requisite expertise or the financial incentive to do this work, which is considered to be unprofitable. And of the few entities that do offer these services, few can do so at a price that is competitive with their North Korean counterparts.<sup>31</sup> This combination of increasingly rare expertise and fire-sale pricing partly explains how the DPRK is able to compete with the legitimate defence industry in other countries despite the risks associated with violating UN arms embargoes (UNSC, 2014, pp. 25–26).

The most prominent seizure of weapons shipped to the DPRK involves the *Chong Chon Gang*, a DPRK-flagged cargo vessel that Panamanian authorities interdicted in July 2013. The ship was carrying 240 tonnes of arms and equipment, including two disassembled Cuban MiG-21 aircraft; at least four SAM launchers (SA-2 and SA-3); components for SAM systems; small arms and light weapons, such as RPG launchers; night vision goggles; and artillery shells (Griffiths and Siirtola, 2013). At the time it was the largest DPRK arms shipment to be interdicted since the adoption of UNSC Resolution 1718 in 2006 (UNSC, 2014, p. 27).

Not all of the arms that North Korea smuggles are old Soviet systems. In recent years the DPRK has established front companies in other countries that are engaged in the manufacture of high-end military equipment. In 2016 authorities from an unspecified country interdicted a shipment of military communications equipment from one of these front companies, a Malaysia-based business named Global Communications Co. Ltd (Glocom). The equipment was en route to Eritrea and consisted of military communications systems and related items, including clone cables, crypto-speaker microphones, GPS antennas, high-frequency software-defined radios, and high-frequency whip antennas. The contents were innocuously packed in 45 cardboard boxes and sealed with company tape (see Images 15–16).

A UN Panel of Experts investigation revealed key details about Glocom, its products, and the multinational network of entities supporting its operations. According to UN investigators, Glocom is a front company for Pan Systems

Images 15–16



Packaging and military radios.  
Source: UNSC (2017b, pp. 33, 149)

Pyongyang, which is operated by the Reconnaissance General Bureau—the DPRK’s ‘premier intelligence agency’ (UNSC, 2017b, p. 35). The DPRK routinely uses front companies to transfer arms, but Glocom was different in several important ways. Firstly, Glocom had a significant international reputation gained through years of participation in regional arms fairs and an active presence in multiple countries. It had an air of legitimacy, foreign offices, and an advertised internet presence that many DPRK-established front companies lack. Secondly, Glocom was assembling and selling expensive military electronics from inexpensive components sourced from civilian companies, which is a significant departure from the DPRK’s traditional role of selling domestically produced derivatives of Eastern Bloc arms and refurbishing Soviet-era weapons systems (UNSC, 2017a, pp. 35–37). To the extent that the DPRK is able to replicate this model, it represents a potentially significant new revenue source for the economically besieged regime—and a new challenge for sanctions regulators.

While the range of North Korean prohibited military equipment has expanded in recent years, available information shows that the facilitation and management of nearly all conventional arms trans-

fers has involved either roving KOMID and Green Pine representatives—or their aliases travelling on diplomatic passports—or North Korean embassies, trade missions, and their accredited in-country representatives. In the Republic of the Congo a DPRK counsellor at the embassy negotiated the refurbishment contract while the arms-related parts and other materiel were provided by an entity whose director was a senior DPRK colonel travelling under a diplomatic passport. The colonel was responsible for the 40 DPRK technicians working in the country (UNSC, 2013c, pp. 40, 112–14).

Accredited North Korean diplomats managed Green Pine’s operations in Angola, securing the entry of more than 30 North Korean technicians, ordering spare parts from foreign brokers, and negotiating with the Angolan government (UNSC, 2016a, pp. 42, 72–73). In the case of the *Chong Chon Gang*, a company co-located with the North Korean Embassy in Singapore, together with the North Korean Embassy in Havana, delivered instructions and assisted with the arms shipment (UNSC, 2014, pp. 31–32). In Mozambique two North Korean diplomatic passport holders reported as falsely claiming accreditation in South Africa (UNSC, 2019, p. 39) supervised the repair of tanks

and other military equipment. Similarly, the DPRK trade mission in Mozambique was used to provide diplomatic cover for the North Korean military trading company Haegeumgang Trading Corporation (also known as Haegumgang), which was responsible for the refurbishment project worth a reported USD 6 million (UNSC, 2018, pp. 41–42, 135–39).

## Military training, military construction services, and arms production capacity

While seized shipments of North Korean aircraft and missiles get most of the media attention, the DPRK is also an active supplier of military training, military construction services, and weapons production equipment. In recent years it has provided martial arts and other military and police training to Angola, Uganda, and Vietnam; equipment and know-how for producing missiles, rockets, and other munitions to Iran, Eritrea, Namibia, Syria, and possibly Sudan; and military construction services to Namibia (see Table 3).

North Korea’s overseas arms production capacity-building programmes have their origins in its ballistic missile

**Table 3** Representative sample of reported and confirmed DPRK-linked transfers of military training, military construction, and arms production equipment, 1999–2017

Items	Transport mode	Interdiction point (if applicable)	Destination country
Parts, equipment, and technical data for producing ballistic missiles	Bulk carrier ( <i>Ku Wol San</i> )	India	Libya
Brass discs and copper rods used to manufacture artillery munitions and aluminium alloy tubes for making rockets	Maritime shipping container vessel ( <i>MV San Francisco Bridge</i> )	Unclear	Syria
Machine tools for refurbishing weapons systems	Maritime shipping container vessel	N/A	Eritrea
Various types of pressure tanks and machinery that could be used for military explosives and the production of propellants	Maritime shipping container vessel	N/A	Namibia
Military training involving live ammunition exercises with K50 revolvers and AK-pattern rifles	Air	N/A	Vietnam
Various training, including martial arts training for police officers; marine rescue training; and security and technical training courses for the Ugandan Police Special Force and Police Construction Unit	Air	N/A	Uganda
Construction of a munitions factory at Leopard Valley	Maritime shipping container vessel	N/A	Namibia
Training, including martial arts and parade ground training	Air	N/A	Angola
Technology transfers for Fagot anti-tank systems and MANPADS for ‘military manufacturing in Sudan’	Unknown	N/A	Sudan
80 tonnes of rocket booster valves, electronics, and measuring equipment suitable for use in the ground testing of liquid propellant ballistic missiles and space launch vehicles	Air; maritime shipping container vessel	N/A	Iran
KOMID–SSRC construction of a large laboratory or chemical factory; supply of special resistance valves and thermometers	Maritime shipping container vessel	N/A	Syria

Sources: UNSC (2012, p. 29; 2014, pp. 34, 37; 2015, p. 100–1; 2016a, pp. 40, 43; 2017a, pp. 22, 43; 2017b, pp. 43, 45; 2018, pp. 48, 52–53; 2019, p. 40); Warrick (2003); US Department of the Treasury (2016)

assistance projects. These projects, which date back to the 1980s, were and remain the DPRK's main source of foreign revenue from arms-related transfers. India's 1999 seizure of a Scud ballistic missile production line on board the North Korean vessel *Ku Wol San* provides unique insights into the transportation and sourcing patterns of North Korean overseas weapons production projects, which continue to this day (see Box 4).

Since the imposition of sanctions on the DPRK, authorities in various countries have detected both attempted and successful transfers of North Korean technology and equipment for the production of, among other items, ballistic missiles, ATGWs, artillery rounds, MANPADS, rockets, military explosives and propellants, and chemical warfare agent protection and detection kits. During the same period North Korean proliferation networks have

dispatched foreign-manufactured items, directly or via brokers, from countries other than North Korea. Despite the use of foreign intermediaries, these technology transfers have been documented as involving North Korean diplomats. In Iran, North Korean KOMID officials accredited as diplomats in Tehran worked with the Shahid Hemmat Industrial Group on ballistic missile technology transfers and coordinated the travel of the latter's

**Box 4 The *Ku Wol San* case**

In June 1999 Indian authorities boarded the North Korean bulk carrier *Ku Wol San*. Under a cargo of sugar they found 148 boxes weighing 178 tonnes labelled variously as 'Machinery' and 'Water filtering equipment' that contained Scud components, machine tools, missile diagrams, and other documentation later prohibited for transfer under UNSC Resolution 1718 (UNSC, 2006). While the shipment pre-dated UN sanctions, during the sanctions era the North Koreans continue to deploy the tactics used in the *Ku Wol San* case. In addition

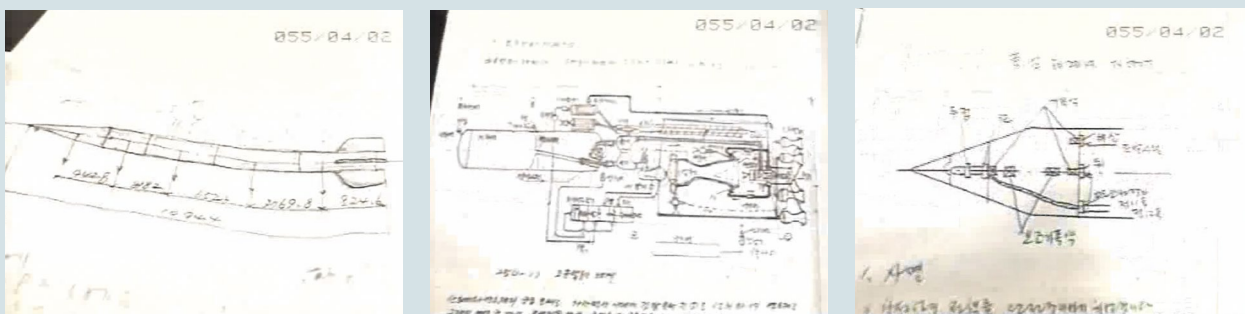
to concealing the true nature of the cargo, the *Ku Wol San* shipping documentation named North Korean and Libyan front companies as the consignor ('Korean Chong-Chong Trading Corporation') and the consignee ('Malta Economic Joint Corporation'). The boxes were a goldmine for officials investigating North Korean ballistic missile know-how, production techniques, and overseas technical cooperation projects, because they contained technical drawings, manuals, circuit boards, machine tools, guidance systems, and various other components manufactured in China, Japan, successor states of the Soviet Union, and others.

**Images 17–19**



Indian authorities inspect the *Ku Wol San*: (left to right) vessel, hold, falsely marked boxes. Source: Hugh Griffiths

**Images 20–22**



Scud missile diagrams seized on board the *Ku Wol San*. Source: Hugh Griffiths

**Images 23–25**



Components and circuit boards found on board the *Ku Wol San*. Source: Hugh Griffiths



representatives to Pyongyang (US Department of the Treasury, 2016).

North Korean diplomats accredited to Angola and Uganda managed and facilitated military training projects in these countries, and also acted as roving salesmen, offering a military patrol boat construction project to Sri Lanka and a full array of military services to South Sudan (UNSC, 2017b, pp. 40, 46). Even in states where there is no North Korean embassy, DPRK diplomatic cover has been utilized. In Namibia two North Korean diplomats later identified as KOMID representatives in Southern Africa claimed South African diplomatic accreditation to open bank accounts and engage in prohibited military cooperation in Namibia (UNSC, 2016a, pp. 40–41, 61). In Sudan and elsewhere, North Korea's Syrian emissary, Hussein al-Ali, held prior consultations with North Korean diplomats accredited to the DPRK's Damascus Embassy. North Korean diplomats and their spouses have directly or indirectly operated bank accounts and couriered bulk cash associated with training and refurbishment contracts (UNSC, 2019, p. 43). They have organized invitations, visas, and air travel for both trainers and technicians. They have project-managed individual contracts involving dozens of DPRK nationals flown into the host countries, signed contracts with their foreign counterparts in the respective Ministries of Defence or armed forces, and ordered spare parts via foreign intermediaries based in third countries. Generally, no matter the items or services provided, North Korean diplomatic passport holders have been documented as integral to all such projects.

## Conclusion

The DPRK has reportedly supplied or attempted to supply more than 30 states, territories, and armed groups with prohibited arms-related material and services since the introduction of sanctions. In several cases this trade represents a continuation of secretive ballistic missile trading relationships that pre-date UN sanctions. In these countries and others North Korean arms smuggling stands out for its use—and abuse—of diplomatic resources. Underpinning many of the attempted, interdicted, and confirmed deliveries of prohibited goods reported in this study is the critical role of North Korean embassies, consulates, trade missions, and their accredited and roving diplomatic staff.

Diplomatic premises and representatives, together with protected diplomatic luggage, are involved throughout the arms

transfer chain, from initial outreach to potential clients to the final delivery of arms and other materiel and the processing of payments. The DPRK uses its embassies as operational centres for negotiating arms deals, to conceal the activities of brokers, and as logistical hubs for coordinating spare part shipments. The diplomatic role in sanctions evasion in fact extends beyond the arms embargo to include the smuggling of other income-generating commodities such as coal (UNSC, 2019, pp. 24–25), gold (UNSC, 2017b, p. 79), bulk cash (UNSC, 2019, p. 20), nuclear-related items (UNSC, 2017b, p. 15; 2019, p. 32), and protected wildlife products (Rademeyer, 2017, p. 11).

Since 2013 the UNSC has pointed to these activities in its resolutions<sup>32</sup> and called on UN member states to 'exercise enhanced vigilance over DPRK diplomatic personnel so as to prevent such individuals from contributing to the DPRK's nuclear or ballistic missile programs, or other activities prohibited by resolutions' (UNSC, 2013b, p. 5). This was followed by more specific, binding measures and requests in resolutions 2270 (UNSC, 2016b)<sup>33</sup> and 2321 (UNSC, 2016c).<sup>34</sup> Efforts to implement these measures have been hindered by INTERPOL's failure to place more than 70 DPRK nationals—nearly all of whom travel on diplomatic and service passports—on INTERPOL Special Notices that include biometric data and other updates. This leaves these individuals and others working on behalf of entities complicit in sanctions violations more freedom to travel and conduct sanctioned business activities, particularly in those cases when, since their designation, they have been issued with new diplomatic passports based on false identities or new aliases.

In complying with UN sanctions, states therefore need to subject to heightened scrutiny DPRK nationals travelling on diplomatic and service passports who enter, transit, or conduct business in their countries. In particular, states hosting DPRK embassies, consulates, and trade missions need to verify the actual identity and stated activities of accredited and resident North Korean diplomats and trade representatives—especially diplomats performing the role of military attaché, as required by UNSC resolutions 2270 (UNSC, 2016b, paras. 6–8, 9) and 2321 (UNSC, 2016c, paras. 11, 15), which prohibit all forms of military cooperation that might give technological or material benefit to the DPRK armed forces.

Based on these facts, many states without a DPRK embassy or accredited diplomatic presence within their jurisdiction might consider their exposure to

potential North Korean arms embargo violations to be low. Yet this study has also highlighted the broad range of sanctions evasion methods used by North Korea that include military cooperation projects in countries without a North Korean embassy, in addition to the abuse of diplomatic privileges.

The consolidated trend analysis presented in this Briefing Paper shows that the DPRK routinely uses global logistics companies and container shipping lines to transport ballistic missile- and arms-related material, associated documentation, and other UN sanctioned goods by both sea and air. The DPRK also employs the services of global, regional, and local banks to facilitate the financial transactions that fund these and other prohibited transfers. Other vehicles for UN-prohibited transfers include flags of convenience and maritime vessels under North Korean control, in particular the country's fleet of bulk maritime carriers. As described earlier in the paper, smuggling methods favoured by the DPRK include the manipulation and falsification of shipping and banking data; the concealment of arms, ammunition, and other illicit material on board North Korean vessels, typically under large quantities of other commodities; and the re-marking and mislabelling of transferred items.

Among the measures global logistics companies, container shipping lines, and banks should take to strengthen their compliance with UN sanctions on North Korea are enhanced proliferation audits that use the detailed identifiers provided in 11 UN Panel of Experts reports<sup>35</sup> to identify recent and historical transfers and transactions associated with North Korean smuggling networks. Sharing the results of such audits with national authorities and, through them, the UN Panel of Experts would allow countries and companies to keep up with North Korean evasion tactics—for example, by identifying new aliases and bank accounts used by DPRK entities and individuals previously designated by the UN for asset freezes and travel bans. Such audits, combined with enhanced sanctions screening, risk assessments, and compliance standards, represent the best ways of curbing North Korea's continuing success in trafficking arms-related materiel and other prohibited commodities. ●

## Abbreviations and acronyms

**AOI** Arab Organization for Industrialization  
**AIS** Automatic identification system  
**ATGW** Anti-tank guided weapon

**CW** Chemical warfare  
**DRC** Democratic Republic of the Congo  
**DPRK** Democratic People's Republic of Korea  
**EU** European Union  
**EUR** Euro(s)  
**Glocom** Global Communications Co. Ltd  
**Green Pine** Green Pine Associated Corporation  
**INTERPOL** International Criminal Police Organization  
**IS** Islamic State  
**GPS** Global positioning system  
**KOMID** Korea Mining Development Trading Corporation  
**MANPADS** Man-portable air defence system(s)  
**MMSI** Maritime mobile service identity  
**RPG** Rocket-propelled grenade  
**SAM** Surface-to-air missile  
**SSRC** Scientific Studies and Research Centre  
**UAE** United Arab Emirates  
**UN** United Nations  
**UNSC** United Nations Security Council  
**USD** United States dollar(s)

## Notes

- 1 This paper uses the terms 'North Korea' and 'DPRK' interchangeably.
- 2 This Briefing Paper adheres to the scope of the extended arms embargo outlined in paragraph 9 of Resolution 1874 (UNSC, 2009), which includes 'all arms and related material, as well as financial transactions, technical training, advice, services or assistance relating to the provision, manufacture, maintenance, or use of such arms or materiel'.
- 3 Resolutions 2087 (UNSC, 2013a), 2094 (UNSC, 2013b), 2270 (UNSC, 2016b), 2321 (UNSC, 2016c), 2371 (UNSC, 2017c), 2375 (UNSC, 2017d), 2397 (UNSC, 2017e).
- 4 The Al-Sakr Factory for Developed Industries is a Cairo-based defence manufacturer that has produced a wide array of light weapons, including RPG launchers, PG-7-pattern RPGs, man-portable air defence systems, and larger conventional rockets and ballistic missiles. It is a subsidiary of the Arab Organization for Industrialization (AOI, n.d.).
- 5 The Egyptian government denied any involvement in the transfer. Commenting on the seized weapons, a government spokesman proclaimed, 'Egypt will continue to abide by all Security Council resolutions and will always be in conformity with these resolutions as they restrain military purchases from North Korea' (Carey, 2017).
- 6 Al-Sakr had a 30 year old relationship with the DPRK to extend the range of Scud B ballistic missiles (see NTI, 2011). In March 1999 the US State Department imposed two-year sanctions on three of the AOI's subsidiaries for transferring dual-use US technology, including missile components, to North Korea. After the publication of the UN Panel of Experts 2018 report (UNSC, 2018), on 30 April 2018 the US State Department sanctioned Al-Sakr due to its prohibited military cooperation with North Korea (Macdonald, 2018).
- 7 See UNSC (n.d.c).
- 8 The UNSC imposed an asset freeze and travel ban on KOMID in April 2009. On 30 November 2016 under Resolution 2321 (2016) the UNSC designated the North Korean ambassadors to Egypt (Pak Chun Il) and Myanmar (Kim Sok Chol) for supporting KOMID and facilitating its activities (UNSC, 2016c, Annex 1, pp. 11–12).
- 9 These were Jang Bom Su, Ryu Jin, Jong Myong Guk, Kang Ryong, Kim Jong Chol, and Jang Yong Son (UNSC, n.d.a).
- 10 INTERPOL Special Notices are issued for other UN sanctions regimes, including individuals designated as working on behalf of the non-state armed group Islamic State (IS) and al-Qaeda; see INTERPOL (n.d.).
- 11 Beginning in the 1990s, Pakistan engaged in nuclear and ballistic missile cooperation with North Korea, as well as conventional arms trade, through the AQ Khan proliferation network (Squassoni, 2006). UN Panel of Experts' reporting from 2009 to 2019 mentions no DPRK arms-related transfers to or from Pakistan; however, the United States found Pakistan's nuclear, ballistic missile, and conventional arms research facility, Khan Research Laboratories, together with KOMID (under its alias Changgwang Sinyong Corporation) to have conducted ballistic missile technology transfers in 2003. Furthermore, two North Korean KOMID representatives accredited at the DPRK Embassy in Tehran were documented as having travelled to Pakistan and transited Islamabad and Karachi airports on at least 28 occasions between December 2012 and October 2015. Pakistan was unable to account for their activities (UNSC, 2016a, pp. 62, 63, 275).
- 12 Most of the companies and individuals named in UN Panel of Experts reports from 2009 to 2013 were registered in or citizens of UN member states other than the DPRK, while most of the entities and individuals designated by the UN or subject to national sanctions designations were located in or nationals of the DPRK (Griffiths and Dermody, 2014).
- 13 Global logistics companies and banks use denied party lists and screening centres as part of efforts to avoid transporting or financing goods on behalf of individuals and organizations sanctioned or otherwise banned who are deemed to pose a threat to the national security of one or more UN member states.
- 14 See also UNSC (2014, p. 107).
- 15 Written correspondence with former international investigator, November 2019.
- 16 See, for example, the case involving the UN-prohibited repair of tanks and other equipment in the Republic of the Congo in which the North Koreans originally attempted to transfer more than EUR 1,357,000 (USD 1,550,000) (UNSC, 2013c, p. 40, Annex XVII, s. F).
- 17 For example, North Korean entities that the UN later designated for arms smuggling, such as Ocean Maritime Management Ltd, issued instructions for their vessels' names to be omitted from financial transactions, including through US correspondent banks (UNSC, 2015, p. 70).
- 18 See, for example, Griffiths and Siirtola (2013). Bulk carriers constitute the majority of interdicted vessels, the seizures from which are probably a small portion of total illicit transfers.
- 19 MMSIs are unique nine-digit identifiers for ships and coastal radio stations using maritime communications systems. The format and use of MMSIs are codified in international regulations on radio communications, but the identifiers themselves are assigned by national authorities. The North Korean Maritime Administration has abused this role by assigning new MMSI numbers and call signs to blacklisted vessels, including ships owned by Ocean Maritime Management, a North Korean firm added to the UN's sanctions list in 2014 because of its role in multiple violations of the arms embargo. In 2016, in Annex 3 of Resolution 2270 (UNSC, 2016b), the UN added 31 of the firm's vessels to its list of designated ships, which are prohibited from entering foreign ports except in emergencies. In response to these sanctions the DPRK—through its Maritime Administration—changed the identity of at least eight of these ships. In the case of the *Hui Chon*, the Maritime Administration (1) renamed the ship; (2) assigned it a new MMSI number; (3) revised the agency's database entry for the ship and replaced the corresponding documentation with a set of false documents; and (4) omitted the ship's IMO number from its automatic identification system for several months (UNSC, 2017a, p. 20).
- 20 The term 'flag of convenience' refers to the civil ensign (flag, symbol, or standard) of foreign states with open registries (that is, no nationality or residency requirements) and lower taxation or minimal regulation of shipping and transport companies. Historically the DPRK flag has been considered a flag of convenience, yet since foreign use was prohibited under paragraph 20 of Resolution 2270 (UNSC, 2016b), the number of foreign-owned ships using it has dramatically decreased.
- 21 See US Secretary of State (2008a; 2008b); USE in Kazakhstan (2008).
- 22 Written correspondence with former international investigator, November 2019.
- 23 See UNSC (2017b, p. 30).
- 24 In the case of the *Jie Shun* (see above) the smugglers had used large canvas patches to cover markings on RPG crates rather than repaint them (UNSC, 2017b, p. 29).
- 25 Author interview with a US Department of Defense official, Washington, DC, 30 November 2018.
- 26 In their 2015 report UN investigators raised the possibility that some of the weapons that Yemeni authorities found on board the *Jeehan 1* were also of North Korean origin, but it is unclear if the provenance of these items was ever definitively identified; see UNSC (2015, p. 40).
- 27 See Mitzer and Oliemans (2014; 2016).
- 28 The proliferation of North Korean conventional weapons is also addressed in Bechtol (2018).
- 29 For example, while refurbishing naval patrol craft in Angola in 2011, Green Pine obtained Angolan end-user certificates that a DPRK broker used to purchase gyroscopes and autopilots from a subsidiary of Raytheon,

- a manufacturer of US cruise missiles. These were shipped to Angola from the manufacturer via South African Airways, and North Korean technicians installed them.
- 30 Internal Egyptian documents obtained by the *Washington Post* reveal the steps taken (or contemplated) by the Egyptian government to prevent the DPRK from publicly exposing the Egyptian military's role in the transfer; see Warrick (2019).
- 31 *Washington Post* journalist Joby Warrick described North Korea as 'a kind of global eBay for vintage and refurbished Cold War-era weapons, often at prices far lower than the prevailing rates'; see Warrick (2017).
- 32 Since the passing of Resolution 2094 (UNSC, 2013b) the UNSC has expressed or reiterated its 'concern that the DPRK is abusing the privileges and immunities accorded under the Vienna Conventions on Diplomatic and Consular Relations' (UNSC, 2016b).
- 33 See paragraph 13 relating to the expulsion of DPRK diplomats if the member state determines that they are working on behalf of designated entities.
- 34 Paragraph 13 of Resolution 2321 (UNSC, 2016c) calls on all member states to reduce the number of staff at DPRK diplomatic missions and consular posts. Paragraph 16 'decides that all States shall take steps to limit the number of bank accounts to one per DPRK diplomatic mission and consular post, and one per accredited DPRK diplomat and consular officer, at banks in their territory'. Paragraph 18 'decides that all Member States shall prohibit the DPRK from using real property that it owns or leases in their territory for any purpose other than diplomatic or consular activities'.
- 35 UNSC (2010a; 2011; 2012; 2013c; 2014; 2015; 2016a; 2017a; 2017b; 2018; 2019).
- and Lawrence Dermody. 2014. 'Loopholes in UN Sanctions against North Korea.' 38 North. SAIS John Hopkins University. 6 May.
- and Michael Jenks. 2012. *Maritime Transport and Destabilizing Commodity Flows*. Stockholm International Peace Research Institute Policy Paper. January.
- and Roope Siirtola. 2013. 'Full Disclosure: Contents of North Korean Smuggling Ship Revealed.' 38 North. Henry L. Stimson Center. 27 August.
- INTERPOL (International Criminal Police Organization). n.d. 'INTERPOL—United Nations Security Council Special Notices.'
- Israel MFA (Ministry of Foreign Affairs). 2009. 'Iranian Arms Seized on MV Francop.' Flickr. 3 November.
- Jenzen-Jones, N.R. 2012. 'Update: RPG-7 Projectiles in Syria.' Rogue Adventurer. 14 October.
- Khan, Feroz. 2012. *Eating Grass: The Making of the Pakistani Bomb*. Stanford: Stanford University Press.
- Macdonald, Hamish. 2018. 'U.S. Sanctions Egyptian Entity, Others for North Korea Dealings.' NK News. 11 May.
- Middlebury Institute (Middlebury Institute of International Studies at Monterey). 2018. 'Chronology of North Korea's Missile Trade and Developments: 1990–1991.'
- Mitzer, Stijn, and Joost Oliemans. 2014. 'North Korean Bulsae-2 Anti-tank Guided Missiles in the Middle East.' Oryx.
- . 2016. 'North Korean HT-16PGJ MANPADS in Syria.' Oryx.
- Navy.mil. 2016. 'Third Illicit Arms Shipment in Recent Weeks Seized in Arabian Sea.' Story No. NNS160404-01. 4 April.
- NTI (Nuclear Threat Initiative). 2011. 'Sakr Factory for Developed Industries.'
- Rademeyer, Julian. 2017. *Diplomats and Deceit: North Korea's Criminal Activities in Africa*. Global Initiative against Transnational Organized Crime. September.
- Squassoni, Sharon. 2006. *Weapons of Mass Destruction: Trade between North Korea and Pakistan*. Congressional Research Service. 28 November.
- UNSC (United Nations Security Council). 2006. Resolution 1718 (2006). S/RES/1718 of 14 October.
- . 2009. Resolution 1874 (2009). S/RES/1874 of 12 June.
- . 2010a. *Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. S/2012/422. 12 May.
- . 2010b. Resolution 571 (2010). S/RES/571 of 5 November.
- . 2011. *Final Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. 16 May.
- . 2012. *Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. S/2012/422 of 11 June.
- . 2013a. Resolution 2087 (2013). S/RES/2087 (2013) of 22 January.
- . 2013b. Resolution 2094 (2013). S/RES/2094 (2013) of 7 May.
- . 2013c. *Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. S/2013/337 of 7 June.
- . 2014. *Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. S/2014/147 of 7 February.
- . 2015. *Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. S/2015/131 of 7 February.
- . 2016a. *Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. S/2016/157 of 22 February.
- . 2016b. Resolution 2270 (2016). S/RES/2270 (2016) of 2 March.
- . 2016c. Resolution 2321 (2016). S/RES/2321 (2016) of 30 November.
- . 2017a. *Midterm Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. S/2017/742 of 5 September.
- . 2017b. *Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. S/2017/150 of 17 February.
- . 2017c. Resolution 2371 (2017). S/RES/2371 (2017) of 5 August.
- . 2017d. Resolution 2375 (2017). S/RES/2375 (2017) of 11 September.
- . 2017e. Resolution 2397 (2017). S/RES/2397 (2017) of 22 December.
- . 2018. *Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. S/2018/171 of 1 March.
- . 2019. *Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*. S/2019/171 of 5 March.
- . n.d.a. '1718 Sanctions Committee (DPRK) Sanctions List.' Accessed 22 January 2020.
- . n.d.b. 'Ocean Maritime Management Company, Limited (OMM).' Accessed 22 January 2020.
- . n.d.c. 'Green Pine Associated Corporation.' Accessed 22 January 2020.
- US (United States) Department of the Treasury. 2016. 'Treasury Sanctions Those Involved in Ballistic Missile Procurement for Iran.' Press Center. 17 January.
- USE (United States Embassy) in Kazakhstan. 2008. 'Kazakhstan Shares Information on Possible Proliferation Concern.' Cable to United States Secretary of State. Reference ID o8ASTANA1286\_a. 18 July.
- US (United States) Secretary of State. 2008a. '(S) Updated Schedule of Flight of Possible Missile-related Cargo of Proliferation Concern.' Cable to Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan. Reference ID o8STATE43804\_a. 24 April.
- . 2008b. '(S) Cancellation of DPRK–Iran Flight: Thanking Central Asian States for Their Cooperation.' Cable to Afghanistan, Central Intelligence Agency, China, Joint Chiefs of Staff, Kazakhstan, Kyrgyzstan, National Security Council, Tajikistan, Turkmenistan, Uzbekistan. Reference ID o8STATE91989\_a. 27 August.
- Warrick, Joby. 2003. 'On North Korean Freighter, a Hidden Missile Factory.' *Washington Post*. 14 August.
- . 2017. 'A North Korean Ship Was Seized off Egypt with a Huge Cache of Weapons Destined for a Surprising Buyer.' *Washington Post*. 1 October.
- . 2019. 'Egyptian Government Documents: Officials in Cairo Tried to Cover up Arms Deal with North Korea.' *Washington Post*. 26 October.
- Wezeman, Siemon. 2004. 'Appendix 12D. Suppliers of Ballistic Missile Technology.' In Stockholm International Peace Research Institute (SIPRI). *SIPRI Yearbook 2004: Armaments, Disarmament and International Security*. Stockholm: SIPRI, pp. 545–49.
- et al. 2007. 'International Arms Transfers.' In Stockholm International Peace Research Institute (SIPRI). *SIPRI Yearbook 2007: Armaments, Disarmament and International Security*. Stockholm: SIPRI, pp. 387–417.

## Bibliography

AOI (Arab Organization for Industrialization). n.d. 'SAKR Factory.'

Bechtol, Bruce. 2018. *North Korean Military Proliferation in the Middle East and Africa: Enabling Violence and Instability*. Lexington: University Press of Kentucky.

Bermudez, Joseph S. 1999. *A History of Ballistic Missile Development in the DPRK*. Occasional Paper No. 2. Center for Non-proliferation Studies, Monterey Institute of International Studies.

Brewer, Jonathan. 2017. *Study of Typologies of Financing of WMD Proliferation*. Final Report. Project Alpha, King's College London.

CAR (Conflict Armament Research). n.d. *iTrace*. Accessed October 2019.

Carey, Joseph. 2017. 'North Korea Ship Seized with Huge Weapons Cargo en Route to Egypt amid WW3 Fears.' *The Express* (London). 3 October.

Dall, Emil, and Justine Walker. 2020. *RUSI–ACAMS Proliferation Finance Study*. London and Miami: Royal United Services Institute and Association of Certified Anti-Money Laundering Specialists.

Getty Images. 2005. 'TAIWAN OUT Hsieh Chin-yi, a Businessman.' 24 February.

Griffiths, Hugh, and Mark Bromley. 2009. *Air Transport and Destabilizing Commodity Flows*. Stockholm International Peace Research Institute Policy Paper. May.

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