

The Military Industry Corporation (MIC)

Sudanese-made ammunition, mortars, rocket launchers and their associated ammunition are increasingly appearing in conflict zones within and beyond Sudan and South Sudan, but the full extent of Sudan's weapons manufacturing capabilities remains unknown. This report briefly reviews what open sources and some limited field research in Khartoum and elsewhere reveals about Sudan's Military Industry Corporation (MIC). Further research is required to verify the true extent of MIC's manufacturing abilities.

Sudan's defence industry dates back to 1959. Under the leadership of President Ibrahim Abboud, the government established the Al Shaggara ammunition plant to produce small arms ammunition. Production was expanded in 1993, when President Omar al Bashir opened the Military Industry Corporation (MIC, n.d.a; Raheel, 2012). Today, Sudan claims to be the third largest weapons manufacturer in Africa, behind Egypt and South Africa (Bors, 2007). Very little information is publically available about the MIC, but according to its website and various product brochures, it has eight main production categories:

1. Ammunition
2. Conventional weapons
3. Armoured vehicles and main battle tanks
4. Gear, outfits, and equipment
5. Electronics
6. Aviation
7. Marine
8. Vehicles

MIC produces a variety of military products in at least seven distinct manufacturing plants. The known plants are: Yarmouk Industrial Complex, Al Shaggara Ammunition Plant, Elshaheed Ibrahim Shams el Deen Complex for Heavy Industries, Al Zarghaa Engineering Complex, Safat Aviation Complex, and Saria Industrial Complex. Each of these is briefly reviewed.

Yarmouk Industrial Complex

The Yarmouk Industrial Complex was constructed in 1994 and began operations in 1996 at the site of an old fertilizer factory in the Soba section of Khartoum. Yarmouk manufactures conventional weapons at five main factories:

1. Rocket factory
2. Heavy artillery factory
3. Heavy and medium artillery munitions factory
4. Light artillery munitions factory
5. Machine guns and light weapons factory

These factories reportedly produce 30 different military items in addition to a variety of civilian products used for railway, electricity, cement, and car production (Raheel, 2012). Yarmouk is run by the National Intelligence and Security Service, and

reportedly has 35 per cent Iranian ownership, with some 300 Iranian technicians and members of the Iranian Revolutionary Guard Corps working there (*Africa Confidential*, 2012).¹ On 23 October 2012, Israel reportedly bombed sections of the complex (*Sudan Tribune*, 2012; Republic of Sudan Embassy in London, 2012). According to Sudanese and Bulgarian officials, the complex was built with additional assistance from Bulgaria (see below) (Collins, 2012).

The Al Shaggara Ammunition Plant

The Al Shaggara Ammunition Plant, established on 17 November 1959, was the first weapons manufacturing plant in Sudan. It first started producing canon and 7.62 x 39 mm ammunition. In 1994, the plant was incorporated into the MIC. At that time, it increased its production to include mortar rounds (60 mm, 82 mm, and 120 mm),² 7.62 x 54R mm ammunition, 19 x 9 mm ammunition, 12.7 x 108 mm ammunition, and aircraft bombs. The plant also produces spare parts for these products under the supervision of a quality control department (Raheel, 2012).

Elshaheed Ibrahim Shams el Deen Complex for Heavy Industries

This complex was established in September 2002 in Giad Industrial City for the production of heavy machinery. It reportedly produces tanks, armoured personnel carriers, and self-propelled guns, in addition to other products and services such as earth-moving equipment, rehabilitation of railways, and river transport. The complex contains various industrial machines, a rehabilitation centre and an assembly area (Raheel, 2012).

Safat Aviation Complex

The Safat Aviation complex, 20 km north of Khartoum in Karari, opened in 2005. The complex includes centres and factories specialized in aircraft maintenance and the installation of aircraft parts. The complex was established with the participation of local and international companies to support the air force with necessary technologies and the maintenance and assembly of aircrafts.

The complex reportedly has 14 hangars with 50 workshops, and 7 specialized centres for aircraft manufacture and maintenance. The complex includes:

- a. Central workshops for the maintenance and manufacturing, and assembly of aircraft.
- b. Transport aircraft maintenance: works on the maintenance of civilian fixed-wing aircraft. The centre is now authorized to conduct periodic maintenance of Antonov aircraft (types 2, 12, 24, 26, 30, 32, 74), light sport Tecnam aircraft, and IL-76 cargo planes. This maintenance is carried out with the support of Ukrainian experts (SAC, n.d.a).³
- c. The Helicopter Maintenance and Development Centre is considered the first centre in Sudan to deal with maintenance of light and advanced helicopters. The centre conducts periodic maintenance of Mi-8, Mi-17, and Mi 8 MTV-1 helicopters. The centre was granted approval by the Russian Civil Aviation Authority 'to carry out overhaul, prolongation, assembly, and maintenance of aircraft components and systems.' Maintenance is carried out with support from Russian advisors based on a partnership with Russia's Novosibirsk Aircraft Repair Plant (NARP) (SAC, n.d.b; VBN Incom Group, n.d.a).⁴ According to

Africa Confidential, Safat also manufactures unmanned aerial vehicles with Iranian assistance (*Africa Confidential*, 2012).

In 2009, the complex produced its first aircraft: a USD 15,000 two-seat propeller plane called the ‘Safat 1’ (Al Jazeera, 2009). According to the state-run Sudanese News Agency (SUNA), Sudan is responsible for about 80 per cent of the production, with China and Russia providing the remaining parts. Engineers who participated in the construction process come from Sudanese universities, mainly Sudan University of Science and Technology and Karari Academy of Technology (SUNA, 2009; *African Manager*, 2012).

The Safat plant is reportedly supported by several foreign companies including a Sharjah-based aviation company, Al Amyal Aviation Services FZE, part of a UAE-registered investment group called VBA Incom, which provides Safat ‘production management, repair, and maintenance engineering’, according to the company; although Al Amyal publicly insists that it is only directly involved with overhauling civilian aircraft at Safat (VBN Incom Group, n.d.a). According to a 2008 letter from Safat, Al Amyal was also appointed as Safat’s general agent ‘in Sudan, Africa and in the Middle East’ for the maintenance and overhaul of ‘any kind of Russian made helicopters’ (SAC, 2008). These services are provided in collaboration with the Russian Federation’s Novosibirsk Aircraft Repair Plant (NARP), which since 2008 has been officially licensed by the Russian Federation’s aircraft maintenance certification authority to maintain a range of military helicopters in Khartoum, including the Mi-17 transport helicopter types operated by SAF (VBN Incom Goup, n.d.b).⁵ There is no suggestion that, by operating in Khartoum, these companies have acted unlawfully.

Al Zarghaa Engineering Complex

The Al Zarghaa Engineering Complex was created in 1999 in the Halfaya area of Khartoum. It specializes in communications, electronics, and research and development. The complex carries out the manufacture, assembly, programming, and testing of electronic devices. It also produces wireless communications devices and electro-optical devices used in defence (Raheel, 2012).

Saria Industrial Complex

Saria was established in 1997, and reportedly includes nine factories producing 60 different products. The complex provides Sudan’s armed forces with military clothing and supplies, simple electronics, and appliances. According to Saria’s website, its shoe factory was established to manufacture military and civilian shoes with support from a Lebanese investor, Mohamed Omar Rifa’i. The factory produces 300,000 military shoes per year (Saria Industrial Complex, n.d.a). According to its director, Mohamed Bushra Ibrahim, Saria produces military clothing for SAF in partnership with Turkey. The complex established the Sor Factory in 2004 to manufacture additional supplies for the armed forces. Sor Factory is reportedly owned by the National Defence Ministry (10 per cent), Saria Industrial Complex (30 per cent), and an unidentified Turkish company (60 per cent) (Al-Toum, 2012; Saria Industrial Complex, n.d.b).⁶

Cooperation and technical assistance

There is scant information available on foreign involvement in the MIC's development. Although details have not been made public, Sudan maintains high-value defence agreements with China and Iran, countries that have reportedly provided training and sent technicians to support Sudan's weapons manufacturing sector (*Africa Confidential*, 2012; CAR, 2012; Small Arms Survey, 2007; *Sudan Tribune*, 2007a; 2007b). Technicians from the MIC—who are usually graduates from Karari Academy in Khartoum, while some are sent to Shiraz, Iran for training—are reportedly paid directly by the Sudanese consulate (Small Arms Survey, 2013).⁷ According to an MIC technician, one of the company's complexes employs 32 Iranian and 37 Sudanese technicians, who operate machinery that was provided by China (Small Arms Survey, 2013).

The MIC uses technical expertise from both China and Iran in the production and manufacture of various weapons and ammunition and also for the maintenance of aircraft and ground vehicles used by the Sudanese army (Sirri, 2013; Ashour, 2013). A technical review of Sudanese manufactured weapons confirms that they derive from Chinese, Iranian, and Soviet designs.

The MIC's 5.56 mm assault rifle, and 7.62 mm and 12.7 mm machine guns, for instance, are direct copies of China's CQ rifle, the Type 80 and Type 85 machine guns, respectively.⁸ The 'Al-Bashir' main battle tank appears to be a copy or a refurbishment of the Chinese Type 85 tank. Sudan's 'Sinnar RPG-7 Commando' launcher bears a resemblance to Iranian launchers of the same calibre (MIC, n.d.e, n.d.f), and its 'Taka' 12-barrel 107 mm rocket launcher is similar to the Iranian version (MIC, n.d.g). Sudan's small calibre ammunition, in particular the 12.7 x 108 mm rounds featured on the MIC's website and displayed at the IDEX convention (see Photo 1), appear identical to cartridges manufactured by China (MIC, n.d.b.).⁹ Further, the Survey has documented Chinese manufactured Factory 41 12.7 x 108 mm ammunition in Sudanese packaging.

It is not clear whether Sudan simply repackages Chinese ammunition, or assembles cartridges that have already been marked by the Chinese. Due to Sudan's close military ties with China and Iran, it is likely that technology for the production of these weapons was supplied from the two countries, yet it is unclear whether any formal licensing agreements exist.



Photo 1: Assorted Sudanese-manufactured ammunition at the IDEX convention, Abu Dhabi, United Arab Emirates © Confidential, February 2013

Over the past couple of decades, Bulgaria has taken significant steps to enhance its transparency and due diligence with regard to arms sales, in line with both EU and international standards. In the 1990s, prior to becoming an EU and NATO member, Bulgaria provided technical support to Sudan during the early stages of Sudan's conventional weapons manufacturing programme. Bulgaria joined the EU embargo against Sudan in 2001 but licensed arms and technology exports to Sudan took place throughout the 1990s.¹⁰ Bulgarian participation in Sudanese military projects has been widely acknowledged in official government statements as well as mainstream and social media.¹¹

The general contractor of a military project in Yarmouk was a consortium of Bulgarian, then state-owned, defence companies, known as KAS General Partnership or KAS Engineering Consortium. KAS company members that may have taken part in the Yarmouk project include: Arkus, Arsenal, Beta, Dunarit, Metalhim Holding, Pima, Trema, Vazov Machine Building Plants, and a private company called Hubano. KAS was the general contractor of the 'engineering project' in Yarmouk, based on 'preliminary information' cited in a 25 October 2004 press release by the then Bulgarian Ministry of Economy (Republic of Bulgaria, 2004). According to a Bulgarian business newspaper, KAS was created with the purpose of building military facilities in Sudan (Aleksandrova, 1996; Ilieva, 1997).

In a letter dated 5 September 2013, the Bulgarian Ministry of Economy and Energy states that in 1996–98 it issued 17 export permits to Sudan, which covered:

equipment and documentation for the production of conventional ammunition (82 mm and 120 mm mortar rounds, 122 mm rounds for howitzers, 40 mm

rounds for anti-tank grenade launchers), including components, materials, metal working machines, technical documentation, and test samples.¹²

The letter goes on to state that KAS Engineering Consortium served as ‘an authorized representative of licensed Bulgarian companies which provided export services for Sudan’. KAS’ licence for export and import of weapons expired in 2000 for unknown reasons. Since the Ministry of Economy and Energy does not maintain records that date from before 1996, it is difficult to ascertain what, if any, assistance it provided to Sudan beforehand.¹³ Evidence suggests, however, that assistance may have started before then (Barzashka, 2013).

Beta, a weapons producer and a member of the KAS consortium, illegally supplied Sudan with 122 mm self-propelled 2S1 ‘Gvozdika’ howitzers in 2001–02.¹⁴ Furthermore, Bulgarian media reports claim that in 1997, when exports to Sudan were legal, Beta signed an annexe to an existing contract with the Sudanese Defence Ministry for the ‘delivery and construction of non-standard equipment, tools, facilities and technical documentation for the production’ of Gvozdika howitzers to be assembled at a military factory in Sudan (Raikov, 2004), most likely Yarmouk.¹⁵ Before the explosion at Yarmouk on 23 October 2012, which was presumed to be a bombing carried out by Israel to prevent arms from reaching Gaza, Sudan’s MIC had advertised for export a 122 mm self-propelled howitzer called the Abu Fatma. The howitzer appears to have the same technical characteristics as the Bulgarian 2S1 Gvozdika produced by Beta.¹⁶ It is not clear why the advertisement of the Abu Fatma was discontinued and whether there was a connection to the 2012 bombing. The MIC still offers the Khalifa¹⁷—a 122 mm D-30 towed howitzer that uses the same ammunition as the Abu Fatma.

In 2013, the MIC stepped up efforts to appeal to international buyers. From 17 to 21 February, it participated in the 2013 IDEX weapons convention, held bi-annually in Abu Dhabi. This event marked the first time Sudan put its weapons on public display, showcasing a variety of infantry and crew-served weapons, including general-purpose and heavy machine guns, RPGs, a copy of the Chinese CQ assault rifle, rocket launchers and ammunition, mortars, and one 4x4 vehicle. It also displayed military communication devices, optical equipment, and laser devices. Simultaneously, the MIC developed product brochures,¹⁸ released a 10 minute promotional video on YouTube (YouTube, 2013), and redesigned its website (MIC, 2013). During the IDEX convention, MIC’s director of external relations, Ali Othman Mahmoud, highlighted that the purpose behind encouraging local production ‘is to meet the needs of the Sudanese Armed Forces and to export surplus weapons to other countries, mainly African states’ (Najib, 2013).

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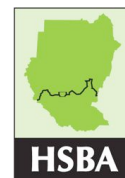
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- ² The Survey has confirmed that at least as of 2010 Sudanese mortar rounds were being produced at the Yarmouk Industrial Complex. It is possible that production moved over to Yarmouk, or that Al Shaggara was absorbed by Yarmouk.
- ³ This information was previously found on the Safat Aviation Complex website; it now appears on its Facebook page: <<https://www.facebook.com/pages/Safat-Aviation-Complex/245538802270881>>.
- ⁴ This information was previously found on the Safat Aviation Complex website; it now appears on its Facebook page: <<https://www.facebook.com/pages/Safat-Aviation-Complex/245538802270881>>.
See also VBN Incom Group, (n.d.a).
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- ⁶ Phone interview with Saria representative, 26 November 2013.
- ⁷ Unconfirmed reports had the workers being paid EUR 50,000 (USD 70,000) per month.
- ⁸ MIC (n.d.d) describes the ‘Terab’, the Sudanese version of the Chinese CQ; MIC (n.d.c)
- ⁹ The construction and color of Chinese manufactured 12.7 x 108 mm ammunition is distinct, and does not resemble similar calibre ammunition produced by other countries.
- ¹⁰ Correspondence from the Republic of Bulgaria to the Small Arms Survey, 5 September 2013.
- ¹¹ Vesti (2013); *Banker* (2005); Kamenarski (2001); *Engineering Review Magazine* (2007); 3F122 (2006).
- ¹² Correspondence from the Republic of Bulgaria to the Small Arms Survey, 5 September 2013.
- ¹³ Correspondence from the Republic of Bulgaria to the Small Arms Survey, 5 September 2013.
- ¹⁴ Bulgaria voluntarily joined the EU embargo against Sudan in 2001 (Barzashka, 2013).
- ¹⁵ The Pleven District Court of Bulgaria convicted the former CEO of Beta for (1) misappropriating assemblies and components from the company they were managing on 23–28 November 2001 and (2) transporting without the knowledge and permission of border agents some USD 510,130 worth of assemblies and components for the 2S1 Gvozdika self-propelled howitzer in 71 cases during the period 26 November–5 December 2001. The decision was overturned and the case was ongoing at this writing (Veliko Turnovo Appeals Court, 2008).
- ¹⁶ An archived version of the MIC website describes the Abu Fatma as a 122 mm self-propelled howitzer with a four-person crew, combat-ready weight of 15.4 tons, and cruising and operating range of 500 km (Internet Archive, n.d.). These specifications match exactly those of the Bulgarian 122 mm self-propelled howitzer advertised on the website of Beta in 2001 (Beta Industry Corporation, 2001). The Soviet version of the 2S1 is slightly heavier at 15.7 tons, according to a 1980 technical description by the Soviet Ministry of Defence, as quoted in the Russian-language version of Wikipedia. See USSR MoD (1980), cited in Wikipedia (2013).
- ¹⁷ See MIC (n.d.h).
- ¹⁸ Several product brochures were available at IDEX and were available for download on the IDEX website.