RNZAC ASSOCIATION

NEWSLETTER #231 May 2024

Meetings **Happy Hour: Thursday 6 May 2024 at 1700 hrs at the Papanui RSA.**

Whose is it?

QAMR

5 May: Exercise TAUWHARENIKAU (TWN) 2024

Waikato Mounted Rifles (WMR) Troop and 3 Troop NZ Scottish Squadron, participated in Ex TWN 24 over the weekend. Ex TWN is the largest Reserve Force (ResF) concentration to occur within the last 10 years, with participants from the three ResF Infantry Battalions and an Australian Defence Force (ADF) contingent. It was an opportunity for ResF personnel to train with NZLAV, with WMR conducting tasks utilising LOV and MHOV vehicles. The unit hopes that the exposure and training for all personnel was rewarding and beneficial towards the overall goals of the exercise.

20 May: Soldiers from WEC SQN sending it down range conducting Live Field Firing in support of the NZLAV Range Conducting Officers Course

May Promotions:

9 May RHQ Promotion: Congratulations to SSGT Andrew who was promoted today by the CO. We wish him all the best as he continues in his role with the introduction into service of Bushmaster.

24 May SCOTS SQN Promotions; Congratulations to LCPL Collier and LCPL Goulton who were both promoted today by the SCOTS SQN OC. Both will be attending the Junior Non Commissioned Officers Course starting Monday next week.

Last Post

It is with sadness that I write of the death of Glen Ward McAuley 14 March 1972 – 24 April 2024. Glen started his Army Territorial Force time with the Artillery in the early 1990s. He was soon convinced to join NZ Scots 1 Troop and enjoyed driving Landrovers, as a GPMG gunner and eventually crew commanding. ANZAC Day was a special time for Glen and his turn-out was always immaculate. Later in the day it could get messy though. He loved a drink, a smoke and wearing the kilt. At the disbandment of 1 Scots, Glen went on to join 2 Cants in its Intelligence cell. He served on a peacekeeping mission to the Solomon Islands 2008-2009. Glen is survived by his partner Deb, two sons and a daughter. Our condolences go to his family.

Admin & Log

RNZAC History Project Charitable Trust

A huge congratulations to the RNZAC History Project Charitable Trust for publishing "*Those Who Have the Courage – The History of the RNZAC*". A spectacular volume that has been heaped with praise from multiple reviewers. A big thank you to all Black Hatters who supported the Trust, whether by donations or by the supply of information. At least one RNZAC Association member we know has read the volume already!!

Several Association members travelled to Palmerston North for the official Launch, which was an excellent affair and a great chance to catch up with Black Hatters old and new.

RNZAC Association Subscriptions for 2023/24 - ($30.00)

Thank you to those members, (30 of us), who have already heeded the call and deposited their subscription to our account. The subscription of $30.00 can be paid by internet banking direct to the RNZAC Association:

Account number: **03 0566 0209452 001**. (Please include your surname and initials in the details field.)

The subscription helps the Association to maintain the RNZAC Association Website and to support important projects like the RNZAC History Project. Your continued support of the RNZAC Association is much appreciated. A reminder e-mail will be sent by the Treasurer in July. If you are unsure if you have paid yet, please contact the Treasurer, Mike Sheppard, at miksan@xtra.co.nz

Mid-Winter Dinner: The mid-winter dinner for members and partners will be held on Sunday 23 June at 1200hrs. See you there.

RSVP to David Harrison by **16 June**. Phone 369 6861. Email Jandavid@snap.net.nz

Venue: The Garden Court Brasserie at the Chateau on the Park,

Time: 1200 for dinner.

Dress: Smart casual. Please no jeans.

Meal arrangement: Please pay for your meal at the restaurant counter after dinner.

Set menu cost of $44.00 per person

Choice of: 5 mains and 2 desserts served with tea/coffee.

Drinks can be purchased from the bar.

Answer: Islamic Republic of Iran Karrar (Striker)

Main Battle Tank – 800 To Be Built

The *Karrar* (English: Striker) is Iran's latest Main Battle Tank (MBT). It is one of the first produced entirely by Iran and was first unveiled in 2016 and officially entered active service in 2020. It is produced on the basis of the Soviet T-72 and its external shape is inspired by the most modern Russian T-90 export version, the T-90MS 'Tagil'. In spite of this, Iran denies any Russian involvement in the vehicle's development.

The Karrar is a cheap modernization for Iran's obsolete T-72 fleet meant to keep them competitive with small modifications to the production line.

Context – The T-72 and Iran

During the Iran-Iraq War (1980 to 1988) Iran was able to capture, according to some estimates, up to a hundred Iraqi T-72 Ural tanks. These were superior to the Soviet, Chinese, and North Korean MBTs in service with Iran.

In the years following the war, Iran bought 200 second-hand T-72M and T-72M1 tanks from Belarus which, after the collapse of the Soviet Union, could no longer afford to keep them in service.

In the mid-1990s, licensed production of the T-72S began in Iran at the Bani Hashim Defence Industrial Complex. Iran currently has an estimated number of around 565 T-72s in service.

Selling armaments to some factions in the Syrian Civil War and also being involved in the war against the Islamic State in Iraq, Iran could see that the early production models of the T-72 which were in service were no longer able to counter present-day threats. Thus, Iran decided to purchase more modern tanks.

In December 2015, the commander of Iran's ground forces, Brigadier General Ahmad Reza Pourdastan, announced that Iran was interested in purchasing T-90s from Russia. This was meant to equip Iran in a manner adapted to a more modern warfare environment, in anticipation of the end of UN sanctions.

Two months later, Pourdastan himself backtracked, stating that Iran was no longer interested in buying Russian tanks because it was able to produce an MBT of equal capabilities. The Iranian Army began development of a new vehicle based on the T-72 but with more advanced systems.

The Karrar Prototype

The Karrar, designed by the Organization of Defence Industries of the Islamic Republic of Iran, was first unveiled in August 2016. On March 12th, 2017, it was announced by Iranian Defence Minister, Brigadier General Hossein Dehghan, that an assembly line for the Karrar would soon be built at the Bani Hashim Defence Industrial Complex. There, production of 800 new tanks would begin in 2018.

The prototype was presented to the public in Teheran and had a distinctive two-tone black and light gray camouflage and a sheet-metal armour sleeve to protect the gun barrel.

Apart from these features, the Karrar prototype differed from the regular Karrar in the arrangement of Explosive Reactive Armor (ERA) bricks on the turret, the arrangement of the smoke launchers, and the different remote controlled station on the turret.

Design of the Tank

Turret

The Karrar has a hexagonal welded turret, with the tank commander on the right side, with a cupola, and the gunner on the left side, with a hatch.

The commander's cupola has eight periscopes for a 360° view and an independent stabilized periscope connected to the anti-aircraft gun. The periscopes have a day/night infrared camera, giving the commander the possibility to survey the battlefield in any lighting and weather conditions.

The gunner has a frontal optic with day and night cameras on the left side of the turret and a smaller auxiliary optic in front of his hatch. The gunner's sight has two small doors that can be closed to protect it from bullets, dust, and splinters.

The gunner's hatch has a small round door that can be opened, as on the Russian T-90s, for more ventilation in desert operations or to mount a snorkel kit. This suggests that the Karrar also has the ability to mount a snorkel kit to cross some bodies of water. The gunner's sight also has a searchlight on the right side that can be used during night operations.

The commander's periscope and the gunner's sight are connected to the tank's Fire Control System (FCS), which, together with other subsystems, such as a turret-mounted anemometer and a laser rangefinder (mounted on top of the gun), calculates the firing calculation needed to hit a target with maximum accuracy, whether stationary or moving, during day or night.

A Russian source claims that some elements of the FCS were developed based on Western technology mounted on tanks inherited after the Iranian Revolution, such as the Chieftain Mark 3P and 5P (P for Persian) and M60A1 Patton. For obvious reasons of secrecy and due to the impossibility of gathering objective information about the Karrar, this statement cannot be confirmed.

The silhouette of the turret is very reminiscent of the Russian T-90MS even if, as already mentioned, Iran has always denied the involvement of the Russian Federation in the development of the Karrar.

On the right side of the turret, the commander has the Battle Management System, composed of a display with a GPS map with the position of the tank, of allied troops, and enemy positions. This is used to monitor the battlefield. The communication system is based on an unknown model of radio produced in Iran.

The MBT is equipped with twelve smoke launchers of unknown model and calibre with six on each side. The grenade launchers are connected to a Laser Warning Receiver that spots laser beams that are pointed at the vehicle through four turret-mounted detectors offering 360° monitoring. If a laser-guided ATGM or the laser rangefinder of a tank aims their laser beams at the Karrar, the Laser Warning Receiver will automatically fire a salvo of smoke grenades to conceal the vehicle.

The front and the sides of the turret are equipped with reactive armour, while the back is protected by slat-armour to provide protection against RPGs.

On the back of the Karrar's turret, there is a bustle divided into several compartments. Most likely, one is used for ammunition stowage to refill the automatic loader. This bustle is equipped with blow-out panels. In case the ammunition compartment is hit, instead of triggering a chain reaction that would destroy the tank, these panels vent the power of the explosion upwards, outside the tank, saving the crew.

Hull

The hull is divided into three compartments: the engine compartment at the back, the automatic loader carousel and turret basket in the middle, and the driver's compartment at the front.

Above the driver there is a hatch, and in front a periscope. Two cameras are connected to a display, probably with day/night capabilities. One is at the front and one at the rear for a clear view of the situation around the tank. Two LED headlights are used for night driving.

Vehicle and performance data, such as speed, fuel consumption, range, engine rpm, etc. are projected on a display for monitoring. The display also projects a GPS map of where the Karrar is operating, allowing the driver to choose the best way to reach a destination.

Externally, the hull of the Karrar is very reminiscent of an updated T-72 or a T-90, with which it shares most of the mechanical components. As the Bani Hashim Defence Industrial Complex was already producing the T-72S under license, the Iranians have only modified the assembly line for the turret, keeping the production line of the hulls with few changes.

Armour

The armour is composed, according to official Iranian information, of composite materials. This information is confirmed by photographic sources that appeared on social media, depicting the turret of the Karrar under construction. The space left free for composite materials between two layers of ballistic steel in the frontal arc is well visible in these.
In addition to the composite armour, Explosive Reactive Armor bricks are mounted on the front and sides of the hull and turret.

These ERA bricks are not the same ones mounted on previous models of Iranian MBTs, which were copies of the Soviet ERA Kontakt-5. They are claimed to be a new version of Explosive Reactive Armor which is more modern, lighter and more effective. Some analysts identify these as a copy of the Russian 3rd Generation Relikt ERA.

According to Iranian General Massoud Zavarei, who is in charge of the Army Ground Force Organization that works on military research and self-sufficiency of the Iranian military industry, this armour is entirely produced in Iran and has been developed without the help of other nations.

Not much can be said certainly about the effective thickness of the armour. If the materials of the composite armour and of the Explosive Reactive Armor are somewhat comparable to those of the Russian T-90 equipped with a welded turret, the Karrar would have a protection of up to 1,150-1,350 mm on the front of the turret and up to 800-830 mm on the front of the hull against High-Explosive Anti-Tank (HEAT) projectiles. This theoretical thickness also changes according to the type of projectile, reaching a maximum of 950 mm on the turret and 750 mm on the hull against Armour Piercing Discarding Sabot Fin Stabilized (APDSFS) projectiles.

The rear sides of the turret, behind the rows of ERA bricks, have spaced and slat-armour, while the sides of the hull are protected by skirts equipped with Explosive Reactive Armour and polymer tiles that protect the wheels. The rear of the hull also has slat-armour, like the turret. The rear of the vehicle is not protected by any kind of additional armour, but has supports for spare tracks, towing cables and external fuel drums. The roof of the turret is covered with Explosive Reactive Armour bricks to protect the vehicle from high trajectory missiles, such as Javelins.

Engine and Suspension

Like the hull, the suspension seems to be unchanged from that of the T-72, with 6 road wheels per side connected to torsion bars, a rear sprocket, and a front idler wheel.

The tracks are an interesting object of discussion. On the prototype, the tracks were of the double pin rubber padded type, like those mounted on western MBTs, such as the M1 Abrams or Leopard 2. It seems that, on the production models, the tracks are single-pin tracks with rubber-bushed pins, like on the previous T-72 Soviet tanks.

The use of 'Western style' tracks is not out of the ordinary. The Russian Federation, the People's Republic of China, and the Democratic People's Republic of Korea, the three largest non-western MBT producing nations in recent years, have also started to use double pin rubber padded type tracks on their T-14 Armata, Type 99, and M-2020 tanks respectively.

It is possible that the decision to use the old tracks is due to an attempt to reduce costs, along with the removal of the metal cover from the cannon. It may also have been implemented because the production line of the new tracks has not kept up with production and, in order to speed up the entry into service, it was preferred to keep the old tracks for now.

Not much information has been released about the engine, with Iranian sources claiming that it is a diesel engine delivering 1,200 hp. During a visit to the factory where the Karrars are produced by Iranian Amy officials, a datasheet placed on a Karrar stated that the tank's engine delivers 1,000 hp. This has created some doubts for analysts. 1,000 hp is not completely adequate for a vehicle like the Karrar, which weighs 51 tonnes. For comparison, the Russian T-90MS 'Tagil', which weighs 48 tonnes, has a V-92S2F2 engine that delivers a maximum of 1,130 hp.

According to some analysts, if the engine delivers 1,200 hp, it could be one supplied by Russia or produced under license. This hypothesis is supported by the fact that the engine used on the T-72S, already produced in Iran, has an 840 hp output. There are currently no reports of the production of a diesel engine with such characteristics and power in Iran.

Recently, it is claimed that a 1,300 hp diesel engine has entered production in Iran. Such an engine could, in the future, be used on the Karrar, increasing the available power and therefore the maximum speed of the tank.

According to Iranian sources, the Karrar's top speed on the road "is over 70 km/h", with a range of about 550 km with the internal tanks. As on the T-72, the fuel tanks hold 1,200 l of fuel, but the installation of two external 200 l drum tanks is possible, which would increase the range by about 20%.

Main Armament

The main armament of the Karrar is a 125 mm smoothbore cannon derived from the Soviet 2A46M L.48. This weighs about 2.5 tonnes and is capable of firing any type of projectile developed for the Soviet 125 mm cannon.

The prototype of the Karrar was equipped with a sheet-metal armour sleeve that does not seem to have a real utility other than purely aesthetic. It has been eliminated on the serial production vehicles.

The maximum elevation of the cannon is +14°, while the depression is -6°. The gun has a fume extractor as on the Russian version. It is not known if the gun can be replaced, as the Russian gun, in less than an hour.

Unfortunately, there is no information about the automatic loader. It can be assumed that it is a derivative of the one used by the T-72. The difference between the Karrar and the T-72 is that, for the Iranian tank, the ammunition that cannot be stowed inside the carousel is stowed in the rear turret bustle and not in the crew compartment, thus eliminating a threat for the well-being of the crew.

Secondary Armament

The secondary armament consists of two machine guns, a MGD 12.7, the Iranian copy of the Soviet DShKM 12.7 x 108 mm heavy machine gun, in an anti-aircraft position in a remote-controlled turret, mounted together with the commander's independent periscope. It can also be used at night thanks to the night and thermal cameras. In the production model, the machine gun is completely covered by a sheet-metal armor sleeve.
The second machine gun is a coaxially mounted Russian 7.62 x 54 mm R PKT, the standard machine gun of all the Soviet and Russian MBTs. Some sources have speculated that the coaxial machine gun was removed, given the sheet-metal armor sleeve mounted around the gun. However, on production models, the presence of the machine gun hole is clearly visible.

Ammunition

The Karrar's gun is capable of firing all Soviet 125 mm ammunition developed over the past decades and manufactured under license in Iran. High-Explosive Fragmentation Fin-Stabilized (HE-Frag-FS) munitions have a maximum range of 9,200 meters, while APDSFS shells are effective up to about 2,000 meters.

There is no information on what ammunition Iran produces under license. However, it can be assumed that, like other nations using the 125 mm gun, Iran employs, in addition to HE-Frag-FS, many types of APDSFS, many types of HEAT-FS (and Shrapnel-FS ammunition.

Iran has stated that the Karrar can fire, like the T-72 and T-90, a copy of the 9M119 'Svir'. This Anti-Tank Guided Weapon (ATGW) is fired by the tank from the gun as a normal munition and is then guided on the target using the laser beam of the laser rangefinder.

The Iranian missile, called 'Tondar' (Thunder), has, according to data released by Iran, a maximum range of 4,000 meters and a penetration of 700 mm steel, which translates into less power than the 9M119. The Russian missile has a range of 5,000 meters and a penetration of 900 mm. It is not clear if the Tondar has a dual HEAT warhead like the Soviet missile.

Service

After having completed the assembly line and started production, the first Karrar units have been delivered to units by the beginning of 2020, a little bit later than initially stated by the Iranian Ministry of Defence. This was probably due to the Covid-19 pandemic that has also slowed down the Iranian military industry.

There is no data yet on the armoured units to which the Karrar has been delivered. It is plausible that it will be delivered to units operating the T-72 to complement them and, when production ends, replace them as front-line tanks.

In order not to waste the T-72s already in service, the Iranian Army has developed a new upgrade of the T-72 which is considered a cheap version of the Karrar. Its name is T-72M Rakhsh.

On 22nd December 2021 during the *'Payambar-e Azam 17'* (Eng: The Great Prophet 17), one of the biggest military exercises held in southern Iran, a new version of the Karrar MBT was spotted, equipped with a camouflage netting used as multi-spectral camouflage that probably makes the vehicle invisible against thermal infrared radar detection.

Conclusions

After witnessing the obsolescence of the early versions of the T-72 in the Middle East conflicts, the Republic of Iran has decided to upgrade its T-72 fleet in an inexpensive way. The Karrar keeps the T-72 hull almost unchanged, but is equipped with a new turret, Fire Control System and armour. It is a simple way to keep the T-72 operatives for a long period of time.

Karrar Main Battle Tank - Tank Encyclopedia (tanks-encyclopedia.com)

Humour

A duck knows best

A duck goes up to a barman and says "I'll have some bread."
The barman replies "We have no bread."

The duck says " I need bread."
The barman says "We'll we don't have any."

The duck said "please go out the back and check. I need bread."
The barman said "We have no bread. Don't ask me again or I will nail your beak to the bar."

The duck asked "Do you have any nails? "
The barman's answers "NO."

The duck asked, "Sure you don't have any bread?"

Pets welcome

A man wrote a letter to a small hotel in an outback town which he planned to visit on his vacation.

He wrote: "I would very much like to bring my dog with me. He is well- groomed and very well-behaved. Would you be willing to permit me to keep him in my room with me at night?"

An immediate reply came from the hotel owner, who wrote: "I've been operating this hotel for many years. In all that time, I've never had a dog steal towel, bedclothes, silverware or steal pictures off the walls or use them as a colouring book.

I’ve never had to evict a dog in the middle of the night for being drunk and disorderly. And I’ve never had a dog run out on a hotel bill. Yes, indeed, your dog is welcome at my hotel. And, if your dog will vouch for you, you’re welcome to stay here, too.”

The Polite Parrot

A young man named John received a parrot named 'Chief' as a gift. The parrot had a bad attitude and an even worse vocabulary. Every word out of the bird's mouth was rude, obnoxious and laced with profanity. John tried and tried to change the bird's attitude by consistently saying only polite words, playing soft music and anything else he could think of to 'clean up' the bird's vocabulary.

Finally, John was fed up and he yelled at the parrot. The parrot yelled back. John shook the parrot and the parrot got angrier and even ruder. John, in desperation, threw up his hand, grabbed the bird and put him in the freezer.

For a few minutes the parrot squawked and kicked and screamed. Then suddenly there was total silence. Not a peep was heard for over a minute. Fearing he hurt the parrot, John quickly opened the door to the freezer.

The parrot calmly stepped out onto John's outstretched arms and said, 'I believe I may have offended you with my rude language and actions. I'm sincerely remorseful for my inappropriate transgressions, and I fully intend to do everything I can to correct my rude and unforgivable behaviour.'

John was stunned at the change in the bird's attitude. As he was about to ask the parrot what had made such a dramatic change in his behaviour, the bird continued, 'May I ask what the turkey did?'

Reminders

RNZAC Association Web site: www.rnzac.co.nz
Contributions to this newsletter are gratefully accepted.
Email: smithmd@xtra.co.nz Phone 0220130778.

Mike Smith, Editor