

OPK Lost: Ukraine's Defence Industrial Base In The 21st Century

The Ukraine defence-industrial complex, usually referred to by the Russian acronym (transliterated) as OPK, was at one time a sprawling and multi-faceted – as well as vital – component of the former Soviet Union's empire of factories, design bureaux and military R&D centres. Ukraine's contribution to building Moscow's massive war machine was considerable and involved several areas of specialisation:

- The only shipyards in all of the USSR that were capable of building an aircraft carrier that could operate short take-off with arrested recovery (STOVAR) fighter aircraft are in the southern Ukrainian city of Nikolayev. The single carrier that was put to

sea in the Soviet era and which is now in the Russian fleet, the *Admiral Kuznetsov*, was built there – as was its sister ship, the *Varyag*. The latter vessel was not completed before Ukraine became independent and was later sold by Kiev to the People's Liberation Army Navy (PLAN) of the People's Republic of China.

- Ukraine's Antonov design bureau was a unique enterprise within the Soviet aerospace sector. Capable of designing the mammoth AN-124 Ruslan four-engine heavy cargo lifter and the six-engine AN-225 Mriya that is still the largest aircraft ever built, the company also built thousands of smaller cargo lifters and utility aircraft still in use around the world.

- The Motor Sich aeroengine enterprise, which is co-located with the Ivchenko/Progress design bureau in Zaporozhye, Ukraine was one of the largest facilities of its kind during the Soviet era and the sole producer of several engines – including those fitted to the leading helicopter platforms of the USSR armed forces.

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- The Malyshev plant in Kharkiv was one of the largest tank production centres in all of the USSR and was famous for being one of the largest production sites to be dismantled and moved east to avoid being captured by the Wehrmacht during the Second World War. The plant that was created by that evacuation and re-assembling of the Malyshev plant, the UralVagonZavod enterprise at Nizhni-Tagil in the Urals, is now Russia's chief main battle tank production and design centre.
- Ukraine was also home to a sizeable network of repair and overhaul plants that could service any major weapons platform or sub-system. The overhaul plants for aircraft have been particularly active in supporting Soviet-era designs that are still in use with former Warsaw Pact member states and other nations that were customers for Moscow's weapons industry. Russian-design aircraft maintained for Poland's military by the Wojskowe Zakłady Lotnicze nr 2 in Bydgoszcz often worked in cooperation with Ukrainian enterprises rather than the Russian OEMs.

Post-Soviet Trauma

In 2020 – as Ukraine approached the 29th anniversary of independence – a prominent public policy journal produced a lengthy assessment of what happened to the defence sector after almost three decades of separation from the one-time Soviet empire. “At the moment of Ukraine's independence there were 3594 functioning enterprises that turned out military and/or dual-use products, with an aggregate workforce of around three million personnel. Of these there were 700 such facilities primarily dedicated to the design and manufacture of military products, which included 205 manufacturing conglomerates, and 139 scientific-production associations that employed some 1.45 million personnel”¹ wrote the study's author, Dmitri Mendeleev. “Today in Ukraine there are only 147 state-owned [defence] enterprises – plus some 250 private firms that were created over the past two decades – that are still operating. The total number of personnel employed [in this sector] now is no more than 100 thousand people. The Malyshev plant once produced 900 tanks a year in 1990 and employed 100,000 persons at all of its combined sites and divisions.”²

The same plant's record production year since independence was for “a contract to Pakistan which had the Malyshev plant ramped up to produce 110 tanks in one year.”³ At its peak production during the Soviet era, the factory employed 60,000 out of the city of Kharkiv's 1.5 million inhabitants. By the beginning of 2015 only 5,000 people remained working at the factory.

This pattern is repeated throughout the entirety of Ukraine's defence sector and the disparities are inconceivable at times. By the 21st century, Antonov, which had produced thousands of aeroplanes used around the world, found itself building aircraft at a rate of single-digits per year. There exists a consistent and growing demand for the type of products Antonov is famous for – in both the defence and commercial sector. But possibilities for the company ever producing some new-generation heavy lift design on the scale of the AN-124 are practically non-existent. Despite

considerable commercial sector demand to have more of these aircraft for the growing air cargo market, the company cannot even find a way to re-start production for the 1980s-technology design of the AN-124.

What Caused The Collapse?

Mendeleviev echoes the complaints of many others and lays the blame for the collapse of Ukraine's one-time massive defence industrial empire on successive governments that have done nothing to support this strategically important sector of the economy. "Ukrainian government officials have not put forth a single kopeck to support the aircraft-building sector but then boast about the great achievement of the delivery of one An-178 aircraft for the Peruvian police! Is it a secret to anyone that all programmes and strategies to support the aircraft industry turned out to be just blank pieces of paper?" he concludes. Most of the industry executives who spoke with FKP agreed that the lack of support from the Ukrainian government was a factor in Antonov and other major firms becoming a shadow of what they once were. But they add that the problems "run even deeper" than just budget shortfalls.

Not only was the Ukrainian state administration not providing any funding, said one enterprise director here in Kiev, "but the armed forces were not purchasing any of our end products either," he lamented. "For us, the armed forces are more like an orphanage or some other charitable organisation than a real customer. They come to us and they say 'well, that looks interesting. If you will give us two or three of these products for free to try out in the field we will evaluate them and if we like them we will order some that we can pay for.' But those follow-on orders never materialise."

In theory, Ukraine's defence sector should be doing much better than it is at present. In 2012, which is not that long ago, Ukraine was ranked as the world's fourth-largest exporter of arms behind the US, Russia and the PRC⁴ – nations that have much larger defence industrial sectors and population bases. However, some of the same critics of the government's lack of investment and unwillingness to place orders with its own industry point out that these impressive sales on the international arms market are misleading. Many of the numbers come from illegal sales of excess stocks left over from the Soviet era. Still others are exports to sanctioned entities.

In the early days of Ukraine's independence under former President Leonid Kuchma, a parliamentary commission investigated numerous allegations of illicit arms trading.⁵ The commission discovered that Ukraine's military stocks were worth US \$89 billion in 1992 and that in the course of the following six years \$32 billion worth of arms, equipment, and military property were stolen and most of it resold.

Thereafter the investigation was abruptly closed down and the 17 volumes of its findings disappeared. The members of the commission were ordered to not discuss the matter or face serious consequences. The head of the commission, an MP and former deputy defence minister, Lieutenant-General Oleksandr Ignatenko, was then brought before a court martial, stripped of his rank and made to understand that his life and that of his family would be in danger if he spoke on the record about the commission.

The end result, said another enterprise director, is that “the profits for export sales of weaponry over the years have not been returned to the industrial enterprises that produced them. Instead the monies ended up in the coffers of [the Ukraine state-run arms export monopoly], Ukroboronprom”. This is an arrangement that has prompted more than one international observer to call for the liquidation of the agency. “It’s time to get rid of UkrOboronProm,” was the blunt assessment of former US Deputy Assistance Secretary of Defense Michael Carpenter, speaking at Ukraine’s December 2017 L’viv Security Forum.⁶

Carpenter and others have long argued that it is the lack of transparency within Ukroboronprom and its chokehold on defence sales that have kept Ukraine’s industry from linking up with foreign partners other than the Chinese. The increasing defence trade with the PRC is becoming a larger issue in both Brussels and Washington, the consequence being that Ukraine continuing to build a closer relationship with Beijing in the defence sphere only acts to the detriment of the nation’s long-term future.⁷

Ukraine and Poland’s Missed Opportunities

In more recent months, the government of President Vladimir Zelenskiy has tried to break the cycle of previous governments and their lack of attention to the defence sector’s woes. In the process Ukraine’s defence sector has recently signed agreements for some 30 projects with a foreign partner – a partner that could win Ukraine a place in the international market.⁸ This partnership is with Turkey, which has seen the numerous areas in which Ukraine still has considerable expertise and a competitive advantage.

Ukraine’s ambassador to Turkey, Andrii Sybiha, explained in January 2021 “the success of the Ukrainian-Turkish cooperation stems from the fact that it focuses on unifying the potential of both countries in joint research, in found joint-ventures as well as establishing joint production infrastructures, rather than just focusing on arms and military equipment trade between the two countries. Focusing on joint development and production of innovative technologies will reinforce this success.”

Sadly, the many aspects of Ukraine’s industry that are attractive to the Turks are many of the same technologies and capacities that Poland’s industry should have found a way to take advantage of

long ago. Poland's long-running NAREW short-range/unit level air defence programme was almost tailor-made for a partnership with Ukrainian industry. The PGZ concept for the programme requires foreign input from a partner nation in all of the areas where Ukraine's defence sector has exceptional capability – particularly in missile design and the development of advanced seeker head guidance systems. Warsaw's problem in building partnerships with Ukraine's defence enterprises is that "the Poles almost never miss an opportunity to miss an opportunity," said the head of one of the leading defence electronics and missile systems technology enterprises in Kiev. "We are natural partners for Poland, but the dysfunctional nature of their procurement system makes that marriage almost impossible," he continued. "We have problems with almost every aspect of working with them – tender timelines that seem to have no end, changes in programme structure at a moment's notice, horrendous headaches getting paid, etc."

"You want to think that since you are interacting with an EU member state that contractual and programme management structures would be efficient entities. In reality dealing with Polish structures presents as many difficulties as trying to put together a programme with Bangladesh" – he concluded.

In the modern day, Ukraine continues to advance in areas of defence technology that are approaching that of NATO member states – and the country is moving consistently towards a closer relationship with western nations. The challenge for western nations is find mechanisms to work with Ukraine – moving the former Soviet republic further away from Russia and weaning its industry from continuing to sell its capabilities to the PRC.

Dangers For The Future

In summation, Ukraine's defence sector suffered the same near-complete collapse in state orders as Russia, and its experience in the 1990s and in the beginning of the next century is in many respects a smaller parallel universe of what Moscow's defence sector went through. Both nations managed to salvage some portion of their industry only by finding export customers – the PRC and India being the two most prevalent examples.

The difference was that while Russia sold major weapons platforms for Beijing and others, Ukraine became the chief supplier of subsystems and weaponry that could be utilised on those weapons platforms – many of which the Chinese eventually copied from the Russians. The Shenyang Aircraft Works in northern Liaoning province were able to illegally copy the Russian Sukhoi Su-27SK, which they designated the J-11B series, without too many difficulties. But reverse-engineering the radars and other components proved to be too much of a challenge.

Therefore, the radars used in these illegally copied aircraft were instead manufactured in Ukraine. Almost all of the J-11B series aircraft were fitted with a NIIP N001-series radar produced at the

Novator plant in the western Ukraine city of Khmelnytsky. In the same vein, most of the air-to-air weaponry used with these J-11B models were made from tooling and manufacturing machinery sold from Ukraine to the PRC's Xi'an Eastern Machinery Factory (西安东方机械厂). These sales to the PRC and to other export customers of Russian weaponry, however, still did not prevent Ukrainian industry from losing a majority of its defence workforce and seeing hundreds of enterprises simply close down and disappear.

For the country to see this experienced and infinitely capable cadre of defence entities disappear was only part of the tragedy. The other was – as a consequence of Ukraine's armed forces not placing any orders with the industrial enterprises that remained – those firms became experienced in developing product lines and innovations that were primarily of use to export customer customers. But they were not designs or modernisation packages that in many instances were relevant to Ukraine's own military requirements.

Even more alarming has been the degree to which Beijing has tried to acquire Ukraine's most valuable defence enterprises and then transplant them and their personnel to the PRC. Their goal has been to address those disciplines where the PRC still remains dependent on imports from Russia – namely aeroengine technology – and they are taking advantage of the fact that the rest of the world has ignored Ukraine industry's capabilities for years.

Both the US and Ukraine have tried to block the sale to the PRC of Ukraine's leading aeroengine enterprise, Motor Sich, on the grounds that this would provide a boost to the PRC's rapidly-expanding military capabilities. "This is the danger if the US, NATO and other nations do not find ways to engage with Ukraine's industry," said a NATO nation intelligence officer who spoke with FKP. "Ukraine's armed forces cannot provide enough work to support their own industrial base. If more nations cannot follow the path of Turkey in partnering with Ukraine then the pockets of technological expertise that remain there will end up in Chinese hands" – he observed.

Conclusions

1. Ukraine's defence sector suffered the same near-complete collapse in state orders as Russia, and its experience in the 1990s and in the beginning of the next century. Both nations managed to salvage some portion of their industry only by finding export customers (eg. the PRC and India). The lack of support from the Ukrainian government was a factor in Antonov and other major firms becoming a shadow of what they once were.
2. Ukraine continues to advance in areas of defence technology that are approaching that of NATO member states – and the country is moving consistently towards a closer relationship with western nations. The challenge for western nations is find mechanisms to work with Ukraine – moving the

former Soviet republic further away from Russia and weaning its industry from continuing to sell its capabilities to the PRC.

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¹ "ОПК, который Украина потеряла," ZN,UA, August 22, 2021, <https://zn.ua/ukraina-1991-2020/opk-kotoryj-ukraina-poterjala.html>.

² Ibid.

³ Ibid.

⁴ "Ukraine world's 4th largest arms exporter in 2012, according to SIPRI," Interfax, March 18, 2013, <https://en.interfax.com.ua/news/general/145130.html>.

⁵ "The international dealers in death," The Guardian, July 9, 2001, <https://www.theguardian.com/world/2001/jul/09/armstrade.iantraynor>

⁶ Lviv Security Forum (@lvivsf) "Michael Carpenter: It's time to get rid of UkrOboronProm" Twitter, December 4, 2017, <https://twitter.com/lvivsf/status/937696001850249217>.

⁷ "What are the risks of deepening Ukraine's cooperation with China for its relations with the EU and the United States?," New Center Europe, August 6, 2020, <http://neweurope.org.ua/en/analytics/yaki-ryzykystvoryuye-poglyblennya-spivpratsi-ukrayiny-z-kytayem-dlya-yiyi-vidnosyn-iz-yes-i-ssha/>.

⁸ "Ukraine's Ambassador to Turkey assesses Ukrainian-Turkish defense industry relations," Defense Here, January 8, 2021, <https://www.defensehere.com/eng/defense-industry/ukraine-s-ambassador-to-turkey-assesses-ukrainian-turkish-defense-industry-relations/98957>.

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