



**Centre for  
Information  
Resilience**



**Myanmar  
Witness**

# **Verifying the export of rockets from Serbia to Myanmar**

**An Investigation**

**22 February 2022**

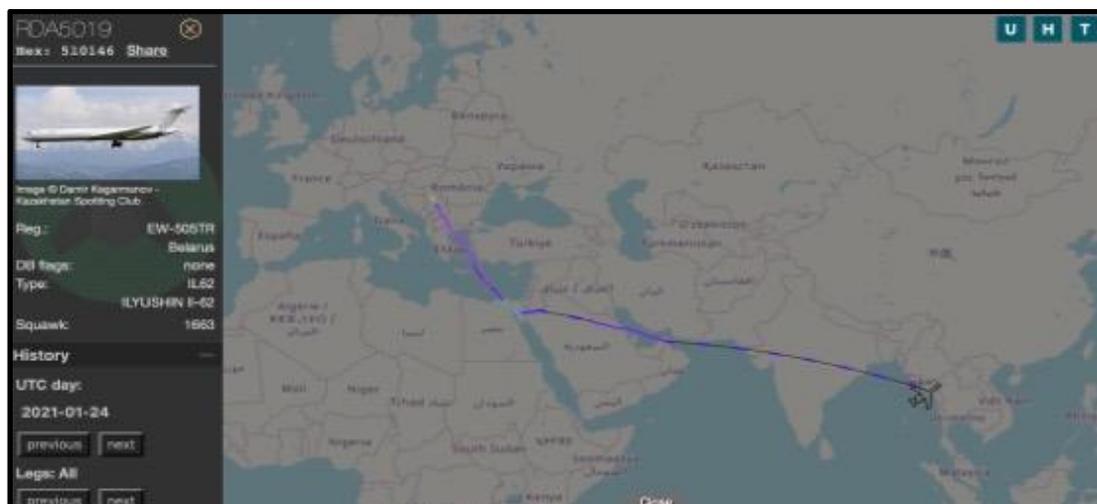
# ARMS REPORT: Verification of information relating to the export of rockets from Serbia to Myanmar following the military coup

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## Executive Summary

Myanmar Witness, the Balkan Investigative Reporting Network (BIRN) and the Center for Investigative Journalism of Serbia (CINS), have identified information which indicates that Serbian-manufactured air-launched rockets were exported from Serbia to Myanmar, using a Belarussian airline, after the military coup of 1 February 2021. Official documentation from the Serbian Ministry of Trade, Tourism and Communication, flight tracking data and analysis of social media footage shows that two batches of unguided aerial rockets are likely to have been flown by Belarussian air company Rada Airlines from Serbia's Nikola Tesla Airport in Belgrade to Myanmar's Yangon Airport on 9 February 2021.

Myanmar Witness has not verified any footage showing this particular type of rocket being used by the Myanmar military since the coup. However, footage has been analysed from several attacks carried out by aircraft belonging to the Myanmar Air Force (MAF) and verified that, in at least one case, a MAF jet used a similar type of air-launched unguided rocket during the conflict in Myanmar. Investigations into the type of weapons used in the conduct of such events are ongoing.



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## Serbian Arms Export Documentation

Via a Freedom of Information Application (FOIA), BIRN and CINS obtained official documentation from the Serbian Ministry of Trade, Tourism and Communication outlining the type of military equipment and components exported from Serbia to Myanmar between 1 January 2017 and 21 September 2021. Included in the documentation was a list of exporters that were issued delivery permits and the items' final users.

On page 2 of the documentation, it is stated that two batches of “Nevodjena avio raketa 80mm” – translating to “unguided rockets 80mm” – were exported by Jugoimport-SDPR JP on 8 February, 2021. One additional batch of the same ordnance had been exported on 23 January. (Figure 1)

  
 Република Србија  
 МИНИСТАРСТВО ПРОМISLE,  
 ТУРИЗМА И ТЕЛЕКОМУНИКАЦИЈА  
 Број: 318-СД-111/2021-09  
 28. јуна 2021. године  
 Београд, 12-26

Центар за информационо истраживање Србије  
 с.Ан. Јана Ђорђевић, оснивач

11000 БЕОГРАД  
 Ресavsка 28/II

Поштомом,  
 У име Зенит система за пренос информација од јавног значаја од 23. јуна 2021. године, објављеним на Веб сајту Србије

1. У вези са запитом за извоз струговина информација (11.1.2020-23.7.2021. године) издати је решење (3 дозволе за извоз наоружања и војне опреме у Републику Мјанмарску Уион). Ова дозвола издати је на основу издати су привредном друштву „ДНС системска система“ доо, Београд (24.12.2020. и 9.11.2021. године) за извоз система артиљеријског електронског гониометра за дан и ноћ, у укупној количини од 29 комада, укупно вредности око 1.683.000 Еуро. Давачем предузету „Југоимпорт СДПР“ Београд, у вези са овом извозом издати су 4 дозволе (20.8.2020., 4.9.2020., 19.10.2020. и 9.11.2020. године). По издати дозволама издати је саобраћај раба пиротронов система за управљање артиљеријским МБСУ-А800 (13 комада) и пиротронов за избијања садница (20 комада), укупно вредности око 530.000 Еуро, одштампавује минобатерија калибра 60мм у количини од 200 комада, укупно вредности око 465.000 Еуро, авионавска ракета 80мм у количини од 2524 комада у вредности од око 4.750.000 Еуро. Комисија „Савезно“ Чачак издати су 3 дозволе (8.6.2021., 20.1.2021. и 19.3.2021. године) за извоз робе из овог привредног предузету (метак 122мм-калибра, метак 105мм-1005 комада, метак 115мм 1005 комада, и метак 105мм 1005 комада, али и укупно за муницију -1200 комада) у укупној вредности од око 2.000.000 Еуро. Привредном друштву „ЈНО експерт систем“ издати је дозвола дана 8.1.2021. године за извоз 5.000 комада муниција за муницију, 10.000 комада

Izvoznik	Datum realizacije	Opis robe	Kolicina robe
DLS SPECIJALNI SISTEMI	2.12.2020	Sistem artiljerijskog elektronskog goniometra za dan i noć	10 KD
JUGOIMPORT-SDPR JP	8.2.2021	Nevodjena avio raketa 80mm	24 KD
JUGOIMPORT-SDPR JP	8.2.2021 23.1.2021	Nevodjena avio raketa 80mm	1620 KD 880 KD
ZENITPROM	16.11.2020	-Litkovi za municiju 30mm -Metak 30x165mm	20000 KD 10000 KD
ZENITPROM	19.7.2020 12.11.2020 9.11.2020 27.1.2021 12.11.2020	-Raketa 57mm -Raketa 57mm -Raketa 57mm -Raketa 80mm -Raketa 80mm	2000 KD 384 KD 2416 KD 768 KD 600 KD

Подаци о реализацији по издатим дозволама у периоду од 1.1.2020. до 23.7.2021. године издати наоружања и војне опреме у Републику Мјанмарску Уион

метак 23x115мм, 100 комада пиротрона и 2160 комада ракета 80мм, у укупној вредности од око 2.650.000 Еуро. Коначно, привредном друштву „Зенитпром“ доо, Београд, издати су 3 дозволе (4.6.2020., 7.4.2021. и 28.9.2020. године) за извоз ракета 57мм у количини од 4.810 комада, ракета 80мм у количини од 1606 комада, 10.024 комада метак 30x165мм и 20.000 комада линкова за муницију, у укупној вредности од око 8.000.000 долара.

2. Расположиви подаци о реализацији из базе података Министарства по горе наведеним дозволама дају се у приложеној табели.

ПОШТОМОМ,  
  
**ОВЛАШЋЕНО ЛИЦЕ**  
 по Решењу број 119-01-51/1/2020-02  
 од 29.10.2020. године  
 Јасмина Роскић

Figure 1: Documentation received in response to BIRN and CINS FOIA request, stating that “Nevodjena avio raketa 80mm” (unguided rockets 80mm) were exported by Jugoimport-SDPR JP on 8 February, 2021.

## Verification of flight path from Serbia to Myanmar

Flight from Belgrade, Serbia to Yangon, Myanmar on 9 February 2021

According to flight tracking services [FlightRadar24](#) and [ADS-B Exchange](#), a Rada Airlines Ilyushin-62M (II-62M) aircraft with the registration EW-505TR left Belgrade's Nikola Tesla Airport a few minutes after 00.00 UTC time on 9 February 2021 (Figure 2).

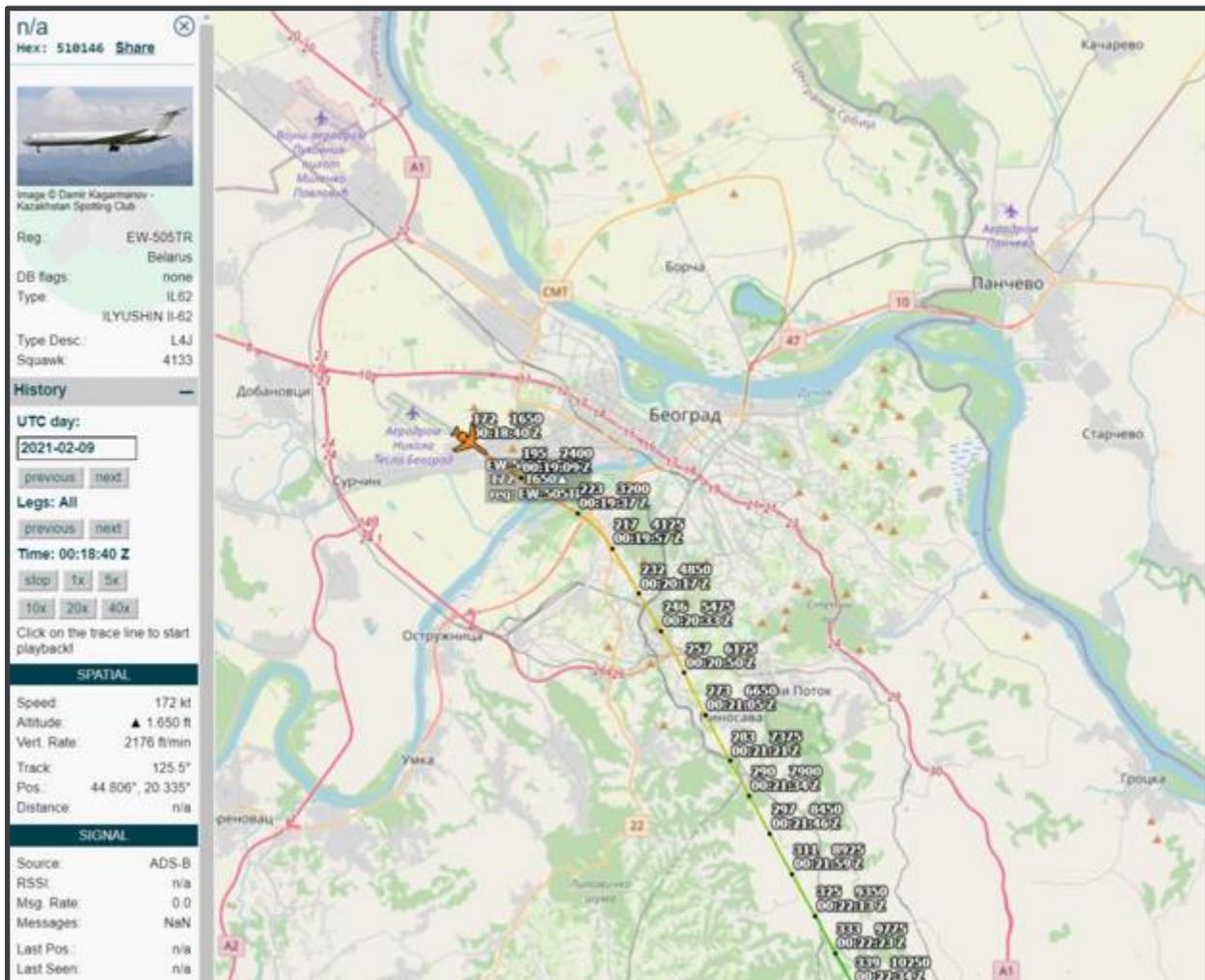


Figure 2: Screenshot from ADS-B Exchange showing the live tracking of EW-505TR leaving Belgrade airport on 9 February 2021.

The flight can also be seen here on FlightRadar24 (Figure 3). Due to the architecture of Flight Radar’s website, historical data relating to flights are anonymised. However, we can see that this is the same flight by matching the take-off time and location, flightpath and landing with live tracking.



*Figure 3: Screenshot from FlightRadar24, showing the same flight taking off from Belgrade on 9 February.*

According to ADS-B Exchange and FlightRadar24, the flight stopped over in Cairo for a few hours, and then continued its trip to Yangon Airport Myanmar, where it landed at just after 12.00 UTC time / 18.30 local time on 9 February 2021 (Figures 4 and 5).



Figure 4: Screenshot from ADS-B Exchange showing the flightpath of EW-505TR.

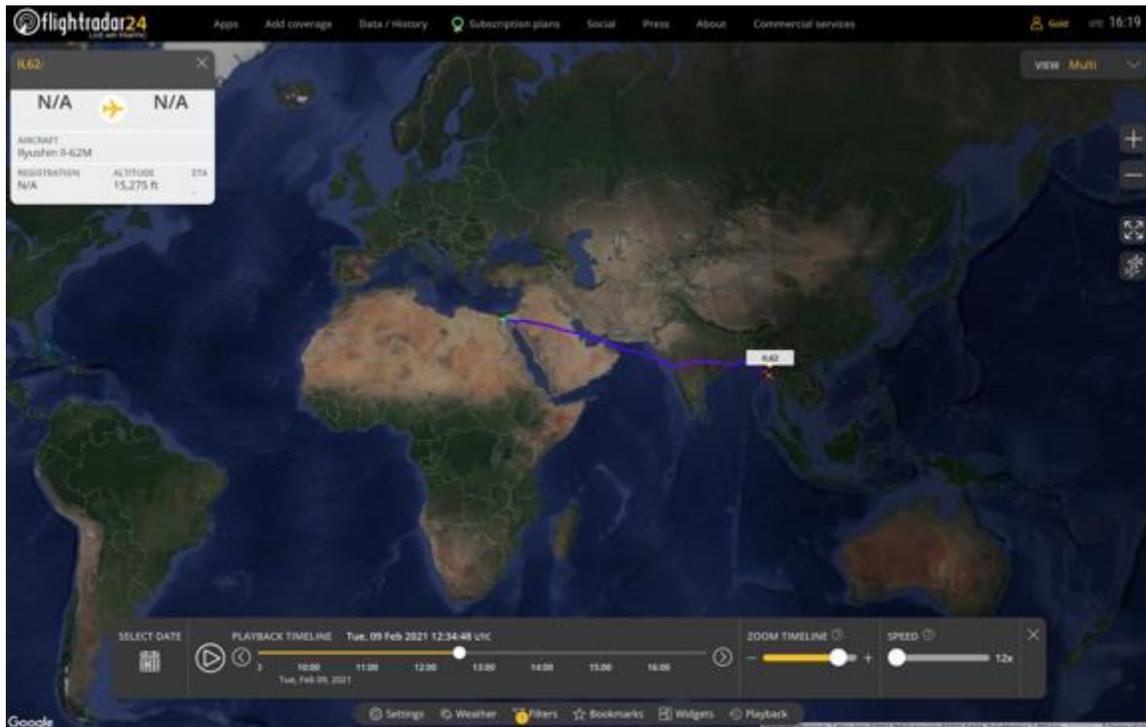


Figure 5: Screenshot from FlightRadar24 showing the flight landing in Yangon.

## Landing at Yangon, Myanmar on 9 February 2021

Images purporting to show an Ilyushin-62M aircraft which arrived at Yangon airport at 19.15 local time on 9 February 2021 were [posted on social media](#) here (Figure 6). Myanmar Witness, BIRN and CINS were able to geolocate the images to [this exact location](#), at Myanmar's Yangon airport (Figure 7), and confirm – using data from [Skybrary](#) – that the features of the aircraft in the pictures matched that of an Ilyushin-62M (Il-62M) aircraft (Figure 8).



*Figure 6: Photo posted of an Ilyushin-62M at Yangon airport (left) and features identified for geolocation in Figure 7 (right).*



Figure 7: Geolocation of the image in Figure 6 showing the aircraft parked at Yangon airport

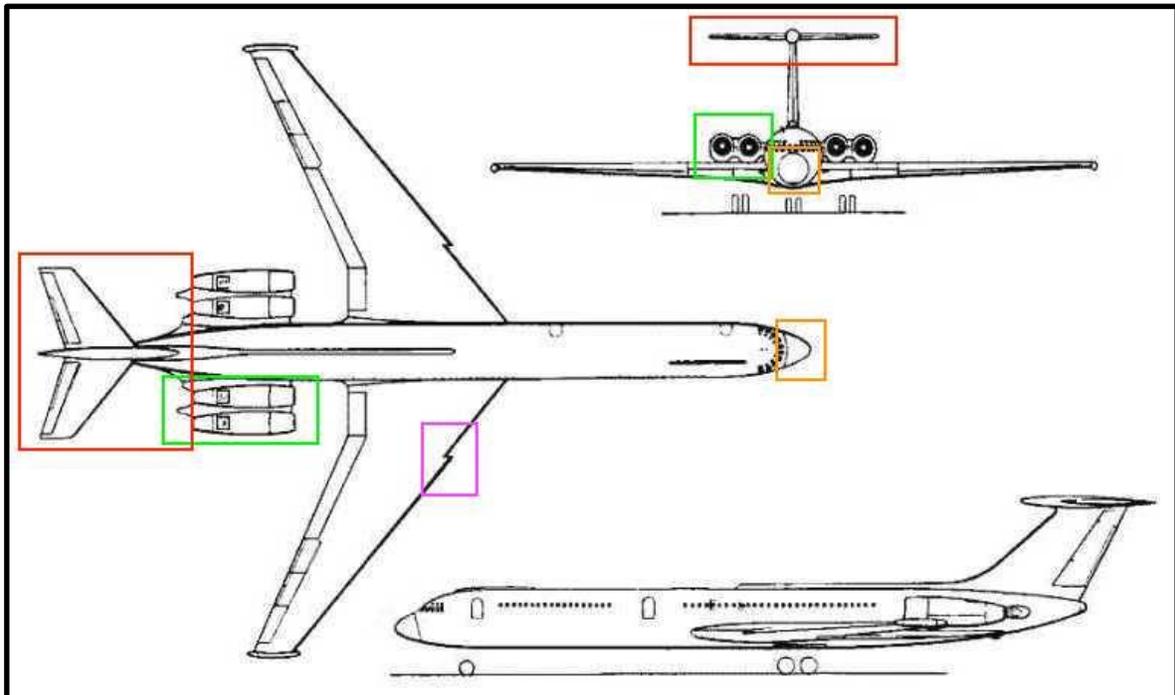


Figure 8: Second photo posted purporting to show the the Ilyushin-62M at Yangon airport, and analysis showing that the features matched that of an Ilyushin-62M (Il-62M) based on reference data from [Skybrary](#)

## Matching internal cargo imagery to Il-62M EW-505TR

Further images, uploaded by a different user on social media the day after the arrival of the Il-62M, claim to show crates being unloaded from an Ilyushin Il-62 plane that landed at Yangon airport at 19.30 on 9 December 2021 (Figure 9).



*Figure 9: Image from social media purporting to show cargo being unloaded from the Il-62M.*

Imagery uploaded to social media shows that II-62M EW-505TR had been recently refurbished, with a new wooden flooring for cargo trips. Photos of the interior of the plane can be found on a private Facebook group created by fans of the II-62M (Figure 10).



*Figure 10: Footage of the inside of the II-62M EW-505TR as seen on a Facebook appreciation group.*

The flooring of the Il-62M, the side panelling, and the numbering theme along the inside of the plane (indicated in the white boxing, Figure 11a) show that the interior of the plane in the image of the cargo being unloaded matches that of the EW-505TR.



*Figure 11a: Analysis matching features in the interior of the Il-62M EW-505TR as posted on Facebook, with features in the interior of the plane (shown in white boxes) from which cargo was reportedly being unloaded in Yangon.*

Zooming in on the image of the interior of the aircraft shows details that allow for a visual match between the image of the cargo being unloaded, and the image of the interior of EW-505TR. Matching light fittings in the plane ceiling with numbering along the walls of the plane indicate that the image of the people unloading crates was taken aboard Rada Airlines EW-505TR (Figure 11b).



*Figure 11b: Matching light fittings (indicated by red line) and numbering (indicated by yellow lines) in the images of the interior of the II-62M EW-505TR as posted on Facebook, with the images of the cargo being unloaded in Yangon, indicates that the cargo was stored in the back area seen in the image, under the light indicated by the red line.*

## Identification of cargo as likely Serbian rocket systems

The documentation obtained by BIRN and CINS from the Serbian Ministry of Trade, Tourism and Communication indicate that a total of 2,524 80mm unguided aerial rockets were exported from Serbia to Myanmar. Papers for three batches were authorised and executed, the first on 23 January 2021, and two more on 8 February 2021. The two batches of February amounted to 1,644 pieces (KD stands for “Komada”, in Serbian), and they are listed as having been executed on 8 February, one day before EW-505TR’s flight to Yangon. All of the exports identified the manufacturer name as Jugoimport-SDPR JP (also known as Yugoimport-SDPR JP) (Figure 12).

JUGOIMPORT-SDPR JP	8.2.2021	Nevodjena avio raketa 80mm	24 KD
JUGOIMPORT-SDPR JP	8.2.2021	Nevodjena avio raketa 80mm	1620 KD
	23.1.2021		880 KD

Figure 12: Excerpt from Serbian Government documentation showing the manufacturer, date of execution, description of goods, and number of pieces.

According to the first page of the same document provided by the Serbian Ministry of Trade, Tourism and Communication, the value of the three lots of rockets is estimated to be €4,750,000 (Figure 13).

укупне вредности око 655.000 Еур; невођена авионска ракета 80мм у количини од 2524 комада у вредности од око 4.750.000 ЕУР. Компанији

Figure 13: Excerpt from Serbian Government documentation listing the value of the rockets.

Jugoimport (also Yugoimport) markets an item fitting the description present under the “Opis robe” (description of goods) column (“Nevodjena avio raketa 80mm”): the [S-8 KOM aviation unguided rocket](#).

According to Jugoimport’s website (Figure 14), “the S-8 KOM unguided aviation rocket with a wholly-charged fragmentation warhead of impact effect is designed for destroying of ground armoured targets (tanks, self-propelled guns, armoured vehicles, armoured personnel carriers), unarmoured ground targets (missiles, launchers, radar stations, aircrafts and helicopters on parking places, etc.), the enemy forces and is used as armament on board the front-line aviation aircrafts”.

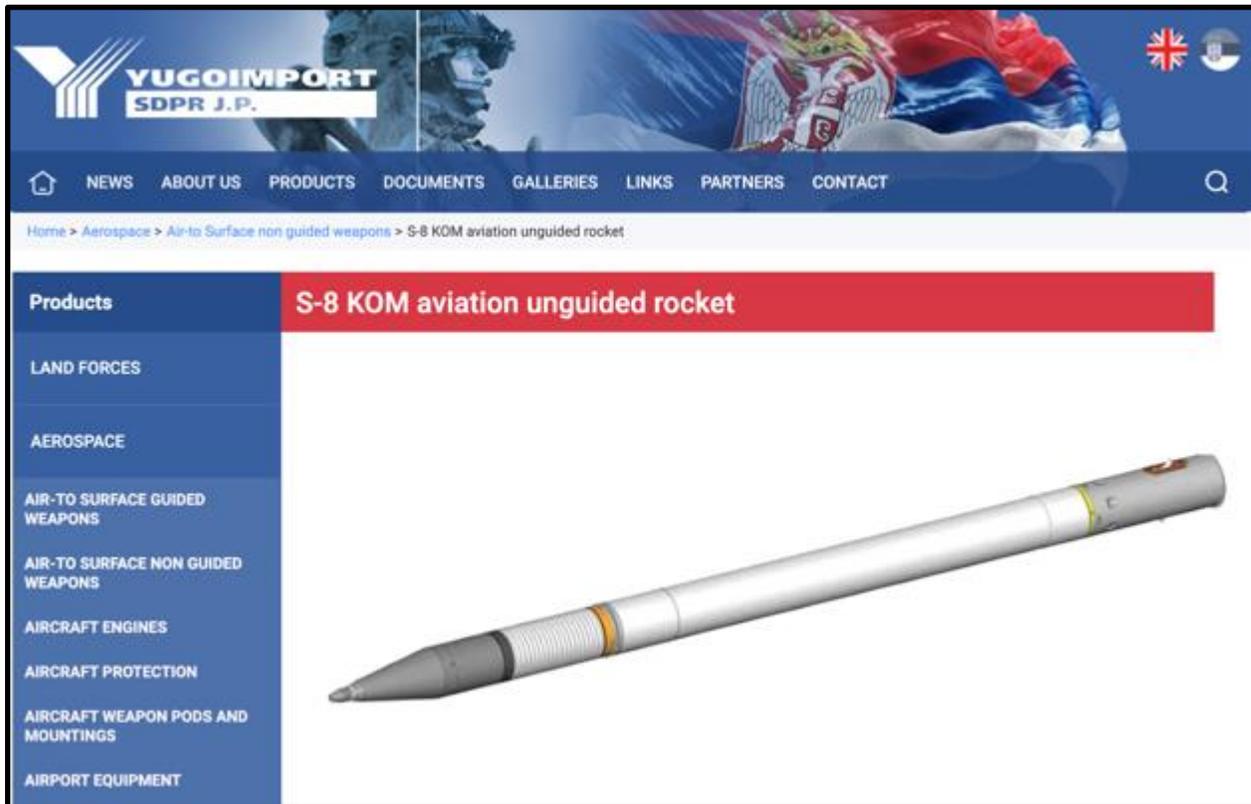


Figure 14: Listing from S-8 KOM aviation unguided rocket on Jugoimport’s website.

## Analysis of delivered cargo crates from EW-505TR

Myanmar Witness has analysed the crates that appear to have been delivered in Yangon by Rada Airlines EW-505TR on 9 February, 2021. Figure 15 shows the crates and the specific details that were used to match them against other crates to help confirm the contents of the delivery.

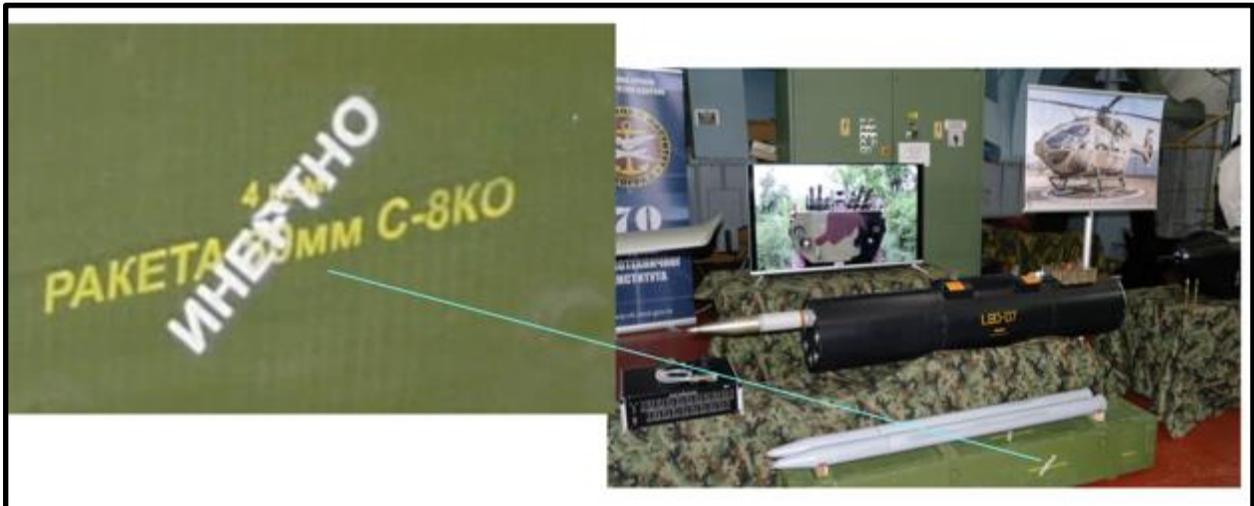
### Analysis of the labelling of the crates

Wording on the crates seen being unloaded from flight EW-505TR appear similar to other crates for Serbian-made 80mm unguided rockets.



*Figure 15: Image showing the delivery of the crates from EW-505TR on 9 February, 2021. The red lines and images are zoomed in on portions of the image to the right which were used to match against other media (seen in Figure 16).*

For reference, an image posted by a journalist specialising in aviation, can be seen here on [Twitter](#) (Figure 16). Comparing Figure 15 and Figure 16 shows a distinct similarity in branding.



*Figure 16: Twitter Image from 2019 showing crates for Serbian unguided aerial rockets displayed. The image on the left is a zoomed in version of the image on the right showing the clear labelling of the crate.*

The S-8 KOM unguided aerial rockets seen in Figure 16, which match the appearance of the items cleared for export in January and February 2021, are known in Serbia as PAKETA 80 MM C-8KOM. Comparing both cases from Figure 15 and 16, there appear to be matches in shape, colour and labelling. For the labelling, the crate seen in Figure 15 from EW-505TR is not completely clear, however the first two rows indicate the text is likely reading:

“4 pieces

“Rocket 80mm S-8KOM”

The crate seen in the image from Figure 16 reads:

“4 kom” (for комада, i.e. pieces)

“PAKETA 80mm C-8KO”

This shows that there is clear similarity in labelling across both crates, relating to the description of contents as well as number of rockets contained within.

## Analysis of the sizing of the crates

The sizing of the crates also correspond. The crate in Figure 15, seen being unloaded from EW-505TR, appears to match the one in Figure 16. The dimensions are also seen on [Jugoimport's website](#) for the S-8 KOM rockets (Figure 17).

**PACKING**

Dimensions (mm) 1,830x350x330  
Volume,m3 0.2114  
4 rockets in a case  
Gross weight, kg 71.3

We used cylindrical geometry with two types of propellant grain, instead of a star geometry and single type of propellant grain, while retaining the same performances.

The rocket propellant, which is used for grain production, is a modern thermoplastic composite propellant with a greater total impulse than the original propellant.

Steel nozzle with ablative material protection has six steel throats same as the original motor.

Figure 17: Packing dimensions of the S-8 KOM rockets as listed on [Jugoimport's website](#).

The product's packing description and the number on the crates indicate that each of the containers holds four rockets. This layout can also be seen in images viewable on the archived page of Khan Asparuh Trade's website, a Bulgarian arms manufacturing company.



Figure 18: Screenshot from [Khan Asparuh Trade](#) showing the packing formation for S-8 KOM rockets

## The use of air-to-surface missiles by Myanmar's Air Force

Myanmar Witness has not verified any footage showing S-8 80mm rockets in use by the Myanmar military after the 1 February coup, but aerial attacks by military aircraft have been regularly reported (see for example [The Guardian](#) and [Reuters](#)' reporting on Loikaw).

Myanmar Witness identified and verified a series of four videos, posted to Facebook on 11 January, 2022 where unguided rockets of the same type, and possibly the same size, were fired in the town of Loikaw, in Kayah State by the Myanmar military.

In the first video, a jet is seen firing at least three salvos of unguided rockets (Figure 19). The rockets leave a trail of fire and smoke consistent with the electric ignition from two under-wing pods and proceed straight forward towards the ground.



*Figure 19: Stills from the first video showing unguided rockets being fired from a jet above Loikaw, Myanmar*

The second video shows a jet firing five more salvos of rockets (Figure 20 below). In this case it is possible to see, by the end of the video, the outline of the city of Loikaw, in Kayah State, approximately at [this location](#) (Figure 21 below).



Figure 20: Images of jets firing rockets from the second video



Figure 21: Geolocation of this video to Loikaw City

A third video filmed yet another pass, where the same type of jet fired at least three salvos (Figure 22) of rockets towards Loikaw.



Figure 22: Images of jets firing rockets from the third video

The fourth video posted shows the same type of jet launching one last salvo of rockets and then firing three shots from its underbelly gun pod. These last shots come from the central part of the bottom of the jet – instead of its wings – and do not leave a directional trail of smoke nor fire, but appear as explosions caused by the firing of a bullet. The fact that this jet finally resorts to using its gun during its final pass suggests a possible conclusion, in that the previous passes were done by the same jet which may have extinguished its rocket pods.



Figure 23: Images of jets firing rockets and shooting from underbelly gun od in the fourth video

The jet filmed in these videos appears to be a People's Republic of China-manufactured K-8 trainer jet, which can also be used as a light ground attack aircraft. According to [FlightGlobal's](#)

[2022 World Air Forces Directory](#), the air force of Myanmar operates 12 of such aircraft out of 50 which were originally ordered.



Figure 24: Matching of the images of the jet in the videos to images of the K-8 trainer jet sourced from [a Wikimedia Commons picture of a K-8 of the Bangladesh Air Force](#) and [a 2015 sighting by the Free Burma Rangers](#).

According to local military blog [Myanmar Defence Weapons](#) Facebook post, the K-8, particularly with the Myanmar Air Force, is regularly equipped with two under-wing pods for unguided rockets and one underbelly gun pod in its anti-surface attack configuration, as seen below.



*Figure 25: Image of the K-8 anti-surface attack configuration, as seen in Myanmar Defence Weapons.*

A formation of K-8 jets was last seen making multiple passes during the parade [to celebrate the anniversary of the Union of Myanmar last Saturday, 12 February, 2022, in Naypyidaw](#). (Figure 26)



Figure 26: Screenshot from footage of the 2022 Union Day parade showing K-8 jets.

## Final points

On 18 January 2022, Burmese news website [The Irrawaddy](#) reported that a Serbian delegation had arrived in Myanmar to discuss the supply of arms to the Burmese military. In a letter to Serbian daily Danas published on [27 January, 2022](#), the Serbian Ministry of Defence denied that any of its representatives had visited Myanmar in January 2022. In the letter, the Ministry of Defence (English translation) stated that: “The delegation of the Ministry of Defense and the Serbian Army was not in Myanmar and the representatives of the Ministry and the Army did not negotiate the sale of weapons to that country. We note that the permits for the export of weapons to Myanmar have not been issued since the outbreak of the last crisis in that country”.

In his 22 February 2022 report to the UN Human Right Council, [Tom Andrews](#), UN Special Rapporteur on the situation of Human Rights in Myanmar noted that, “even more concerning for the Special Rapporteur is the probable transfer of 80mm rockets on 9 February 2021. Indeed, numerous reports highlight how the military has used rockets to attack civilian locations prior to the coup and in at least Kayah, Kayin, and Chin States since the coup.

Thus, Serbia’s transfers of these arms likely breach Serbia’s Geneva Convention obligations and may also violate Serbia’s responsibility under customary international law given the virtual certainty that rockets of the sort Serbia has authorized would be used against civilians and the prominent role that rockets have played in Myanmar’s attacks on civilians”.