

Routes, Destinations, and Involvement of the 2nd and 147th Automobile Battalions in the June and July 2014 Buk Convoys

A bellngcat Investigation



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Section 1: License Plates of 2014 Buk Convoy Vehicles

Last year, when the Bellingcat investigation team was searching for images and videos of the 23-25 June and 19-21 July 2014 Buk convoys, we took screenshots of each vehicle, most of them where a license plate was visible. All license plates were saved in a document for later comparison with new photographs or videos of the convoys. In doing so, we discovered that three trailers seen in the June convoy were also present in the July convoy. Of particular importance are the license plates of the truck and trailer in the June convoy that hauled the Buk missile launcher that later appeared in Ukraine (Buk “3x2,” where “x” refers to a missing digit), as they could provide information about the unit and driver that transported the Buk to the border.

Only a few of the original screenshots and images are shown in this section, because later in this report the same vehicles will be shown as found in photographs and videos of several VK profiles. The top-left image is a screenshot from a video¹ (uploaded 25 June 2014) of the truck and trailer hauling the Buk 3x2 in the June 2014 convoy as it drives through Stary Oskol.² The top-right image is of the same truck and trailer, this time with the license plate of the truck visible. It was posted on 24 June 2014 in a VK community about Alexeyevka.^{3 4} (VK⁵ is a social networking website similar to Facebook that is popular among Russian speakers.) Although not very clear, we can make out that the license plate of the trailer is XP 4679 50 and the license plate of the truck 4267 AH 50 (bottom-left and bottom-right, respectively, on the following page):



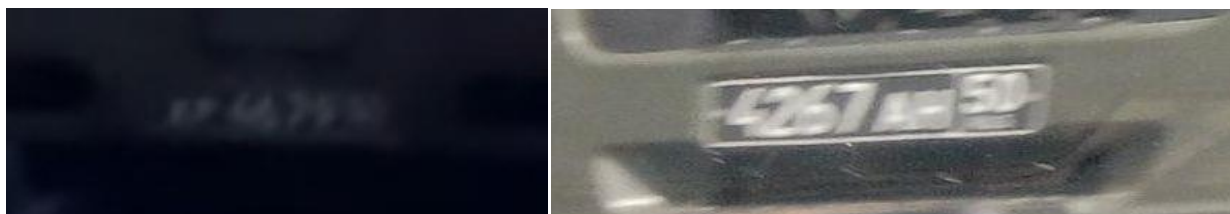
¹ <http://ok.ru/video/13856344715>

² <http://www.bellingcat.com/news/2014/11/07/geolocated-June-buk-convoy-videos-in-russia>

³ http://vk.com/wall-62387983_26806

⁴ <http://www.bellingcat.com/news/uk-and-europe/2015/01/17/new-images-of-the-mh17-buk-missile-launcher-in-ukraine-and-russia>

⁵ <http://vk.com/>



Left: the trailer hauling Buk 3x2 has license plate XP 4679 50

Right: the truck has license plate 4267 AH 50

Our team has identified most of the license plates of the other June and July 2014 Buk convoy vehicles as well. The license plates of vehicles related to this report are shown below. A video uploaded 24 June 2014 ⁶ and geolocated near Raskhovets⁷ shows two Kamaz trucks from the June convoy hauling Bucs. The screenshots below show that their license plates are 8469 HH 50 and 3388 AY 50:



Left: truck with license plate 8469 HH 50

Right: truck with license plate 3388 AY 50, as seen in a video of the June convoy uploaded 24 June 2014

⁶ <http://www.youtube.com/watch?v=aLtzyEHolmg>

⁷ <http://www.bellingcat.com/resources/case-studies/2014/09/29/geolocating-the-mh17-buk-convoy-in-russia>

In a video of the July 2014 Buk convoy,⁸ uploaded on 20 July 2014 and filmed and geolocated in Fedoseevka,⁹ the license plates of the trailers are visible, three of them being: XP 4671 50, XP 4682 50, and XP 4722 50:



Left: trailer with license plate XP 4671 50

Middle: trailer with license plate XP 4682 50

Right: trailer with license plate XP 4722 50, all seen in a video of the July convoy uploaded 20 July 2014

⁸ http://vk.com/video24370305_169486086

⁹ <http://www.bellingcat.com/news/uk-and-europe/2014/11/07/geolocated-july-buk-convoy-videos-in-russia>

Section 2: The 2nd Automobile Battalion of Unit 11385

Because Bellingcat's research into military equipment involved in the Russia-Ukraine conflict extends past the investigation into the Buk that likely shot down MH17, we created the vehicle tracking project. Browsing the internet in search of military convoys and recognizable military vehicles for inclusion into our vehicle tracking database, we happened upon an image of the trailer with license plate XP 4679 50 – the same trailer that was transporting the Buk 3x2 missile launcher in June 2014 and then seen again on 17 July 2014 in Ukraine. We have elected to not name the source of the photograph so as to protect the identity of the photographer and not disturb the official police investigation. We have also censored the image so that the last name of the person who posted the image is not visible; he will instead be called Vladimir P. The upload date of 26 July 2014 (in Russian, below the photograph) is a month after the 23-25 June 2014 Buk convoy and just nine days after the downing of MH17. It is possible that the person standing next to the trailer is the driver of the truck that hauls this trailer.



A photograph of trailer XP 4679 50 uploaded on 26 July 2014

In order to verify that the truck and trailer seen in the photograph are in the same area where the June and July Buk convoys were filmed, it was first necessary to geolocate the picture. The sign to the right of the trailer shows a name of a city starting with “Бог” (Bog). A few of the videos that the Bellingcat investigation team uploaded to the vehicle tracking project show military vehicles driving on the M4 highway next to a town called “Богучар,”^{10 11 12} filmed from a bridge crossing over this highway.¹³

¹⁰ http://www.youtube.com/watch?v=1sBf_hApxls

Just south of the bridge from where the military vehicles had been filmed in June 2014, a road that goes under the highway can be seen on Google Maps.¹⁴ Although Street View stops just a few meters from the spot where the photograph above was taken, the same view is clearly visible:¹⁵



Google Street View image of a road leading under the M4 highway in Boguchar.

¹¹ <http://www.youtube.com/watch?v=QdmbhgITQZ8>

¹² <http://www.youtube.com/watch?v=pP8IErcRGkE>

¹³ <http://www.google.nl/maps/@49.9475391,40.505071,357m/data=!3m1!1e3>

¹⁴ <http://www.google.nl/maps/@49.9252738,40.5198928,720m/data=!3m1!1e3>

¹⁵ <http://www.google.nl/maps/@49.925398,40.516244,3a,60y,89.35h,88.52t/data=!3m4!1e1!3m2!1s49v-n8pXCi5jva8mrRg1CA!2e0>

Rotating the Street View shows that the road sign that says “Boguchar” is just a few meters away from the point where Street View ends. Only the back of the sign can be seen in the image, but a sign that marks the town limits of Boguchar is visible on the opposite side of the road:



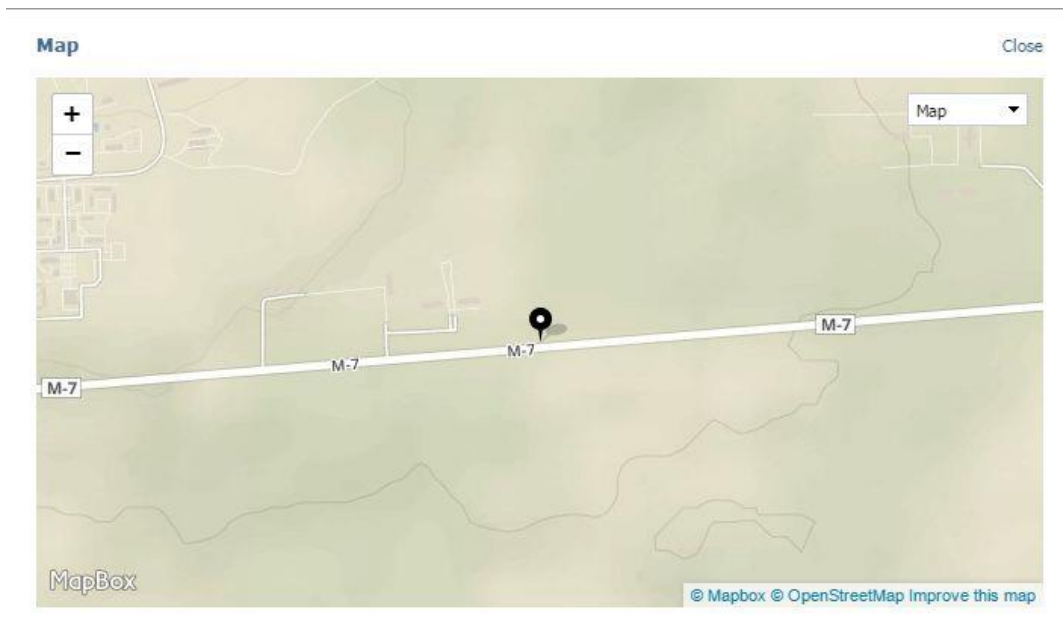
Google Street View in the other direction shows road signs, one of them displaying “Boguchar”

The VK profile of Vladimir P, who posted the picture in his photo album, was not immediately found by the Bellingcat investigation team; when the profile was found, the image of trailer XP 4679 50 had been removed and no other images of trucks or trailers were found in the album. Most of Vladimir P’s other images are geotagged in “Volodarskiy rayon,” like, for example, the following image:



A picture geotagged in Volodarskiy rayon

Clicking on the location Volodarskiy rayon brings up a map with the location:



The location of the previous picture as shown on Mapbox.

Zooming out, the map shows that this location is near a town called “**Новосмолинский**” (Novosmolinskiy), and zooming into the area using Google Maps shows a military base with a number of trucks and trailers.¹⁶ A Panoramio picture on the following page shows what the area looks like from the ground.¹⁷

¹⁶ <http://www.google.nl/maps/@56.2827962,43.0515934,1190m/data=!3m1!1e3>

¹⁷ <http://www.panoramio.com/photo/70923992>



Top: Google Earth satellite image of the military base

Bottom: Panoramio picture of the area

Searching Wikimapia reveals that the base is home to Unit 11385:¹⁸



Military base of Unit 11385 on Wikimapia

A search for communities on VK¹⁹ reveals a closed group called “В/ч 11385 Автомобильная Рота,” roughly translated as “automobile company” (company in military sense) – so a military transport unit. The search results yield many other units starting with 11385 such as 11385-5 and 11385-6, but only a few communities seem to be related to the 11385 unit near Novosmolinskiy. One VK community has pictures posted of camps near Millerovo,²⁰ and another has pictures posted of the same type of trailers with military equipment as seen in the June and July 2014 Buk convoys.²¹ The photographs show trucks hauling trailers with tanks, some of them clearly destroyed or at least heavily damaged in battle and others appearing unscathed. We found a trailer with the license plate XP 4674 50,²² which was not seen in the June or July 2014 Buk convoys, but is very similar to license plates seen in those convoys.

¹⁸ <http://wikimapia.org/#lang=en&lat=56.282968&lon=43.050753&z=17&m=b>

¹⁹ <http://vk.com/search?c%5Bq%5D=11385&c%5Bsection%5D=communities>

²⁰ http://vk.com/album-77749968_203283636

²¹ http://vk.com/wall-73883232_40

²² http://vk.com/wall-73883232_40?z=photo-73883232_337144981%2Fwall-73883232_40

It is obvious from these images and others (including vehicles that that Unit 11385 has been involved in transporting military vehicles to and from the border of Ukraine, but a clear link to the June and July 2014 Buk convoys is not apparent.

"Unit 11385, also known as the 69th Separate Logistics Brigade,²³ is divided into subunits such as 11385-2, which was responsible for at least one of last year's so-called humanitarian aid convoys."²⁴ Searching through the photographs of Vladimir P's contacts, we found a picture in front of Unit 11385 with the sign, "2 автомобильный батальон войсковой части 11385" (2nd Automobile Battalion of Military Unit 11385):



2nd Automobile Battalion of Military Unit 11385

²³ <http://warfare.be/db/lang/rus/catid/239/linkid/2239/base/1862/title/69-obrMTO>

²⁴ <http://informnapalm.org/3427-voennosluzhashhye-69-j-brygady-mto-vozyat-gumanytarku-na-donbass-pod-prykrytyem-mchs>

Googling “в/ч 11385” shows that, in addition to the unit located in Novosmolinskiy (officially located in Mulino), a unit called 11385-2 is located in Kalininets between Naro-Fominsk and Moscow.²⁵ A group on Odnoklassniki²⁶ (another Russian-language social networking website) confirms that Unit 11385-2 is located in Kalininets.²⁷ Via the VK contacts of Vladimir P our team found someone who describes himself as being in “11385-3, 2 **Автомобильный батальон, 69 ОБрМТО,**” (Subunit 3 of the 2nd Automobile Battalion of the 69th Separate Logistics Brigade). A geotagged picture in his photo album links to an area northwest of Belgorod. Looking in the area of Kalininets and the area northwest of Belgorod with Google Earth indeed reveals military bases with trucks and trailers:^{28 29}



Satellite image of Unit 11385-2 in Kalininets, where trailers and trucks are visible

²⁵ http://www.prizyvnik.info/threads/139824-v_ch_11385-2_narofominskiy_rayon_p_kalininets_moskovskoy_oblasti

²⁶ <http://ok.ru/>

²⁷ <http://ok.ru/group/51755555750043>

²⁸ <http://www.google.nl/maps/@55.5417107,36.9404548,2432m/data=!3m1!1e3>

²⁹ <http://www.google.nl/maps/@50.6509981,36.5226893,680m/data=!3m1!1e3>



Satellite image of Unit 11385-3 northwest of Belgorod, where many trucks are visible (notice the significant amount of trucks on the left side of the image)

Historical satellite images reveal that the area left of the army base northwest of Belgorod used to be empty, and that military vehicles are seen being positioned here beginning only in April 2014. The historical imagery also shows that the trucks and trailers from the base in Kalininets have moved a lot between 2013 and July 2014 (in April 2014 the base is almost empty), and the number of vehicles at the base in Novosmolinskiy (Mulino) also varied a great deal between August 2013 and August 2014 (there are a lot less vehicles in 2014).



Left: Unit 11385-3 in March 2014 (empty on the left side of the image)



Right: Unit 11385-3 in April 2014 (full of vehicles on the left side of the image)



Left: Unit 11385-2 in Kalininets in May 2013



Right: Same unit in July 2014



Left: Unit 11385 in Novosmolinskiy (Mulino) in August 2013



Right: Same unit in August 2014

An editor on Wikimapia labels the area of the base northwest of Belgorod that sees a huge influx in military vehicles as a “Russian Fascist-Putinist Camp,”³⁰ but another explanation could be possible:



Wikimapia’s labeling of the area witnessing an influx in the number of vehicles

Additional remarkable pictures were found in the photo albums of Vladimir P’s VK contacts, leading us to find more drivers serving in or working for unit 11385:



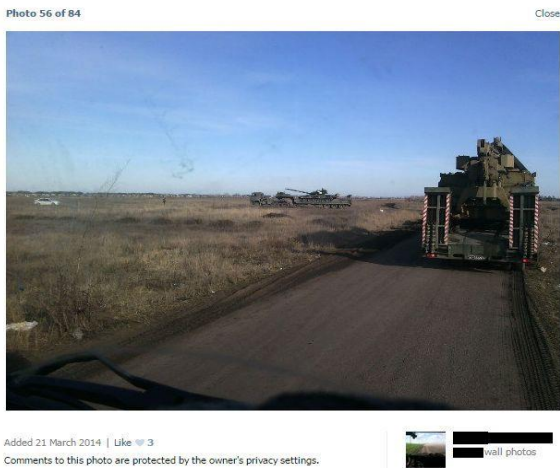
Left: trailers as the base of Unit 11385 in Mulino

Right: white trucks of a “humanitarian” convoy (compare the area with the area seen in the Panoramio picture of Unit 11385 earlier in this section)

³⁰ <http://wikimapia.org/#lang=en&lat=50.650875&lon=36.517096&z=18&m=b>



Left: a tank fell off a trailer and landed upside down
 Right: a convoy on its way to Millerovo gets stuck



Left: trailers carrying tanks along the border
 Right: Kamaz trucks similar to those in the June and July 2014 Buk convoys at the base of Unit 11385 in Mulino

Section 3: Transport of Military Equipment to the Border

An article published on a Ukrainian website,³¹ and a movie posted on Odnoklassniki³² reveal even more information about military equipment being transported to the border of Ukraine, including on some of the trucks and trailers that were part of the June and July 2014 Buk convoys. The article, however, does not mention the 2nd Automobile Battalion, but the “147-й АБМО (автомобильный батальон материального обеспечения)” instead, (the 147th Material Support Automobile Battalion).

But a search for more information about this particular transport of military equipment led the Bellingcat investigation team to another VK community of the 2nd Automobile Battalion. We have chosen not to provide a link to this community, again so as to protect the privacy of the drivers and not disturb any official police investigations. It is obvious that the drivers of the 2nd Automobile Battalion are aware of the Ukrainian publications, because a link to the movie mentioned above is included on the page and drivers commented on it:

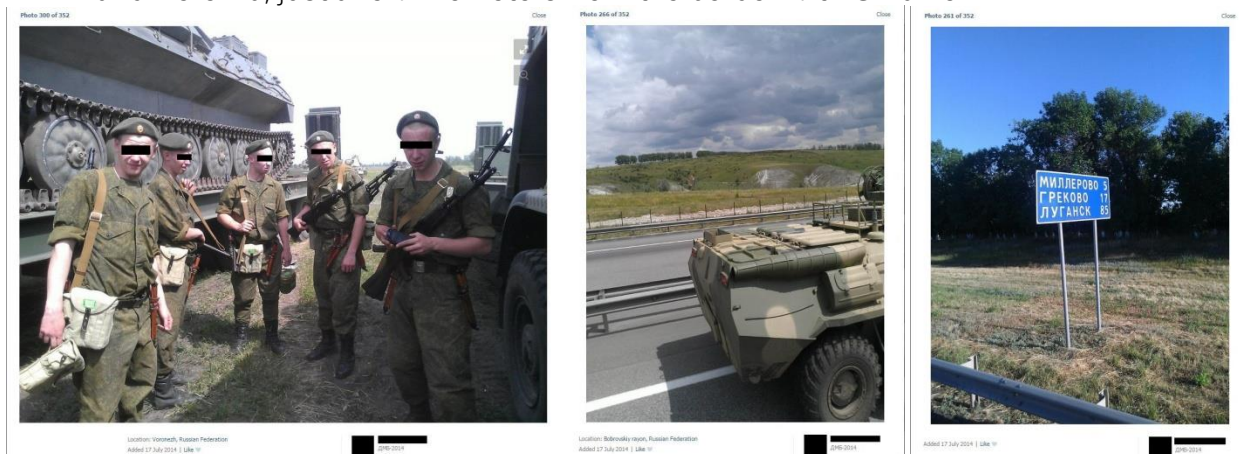


A wall post on a Unit 11385-2 community mentioning the video about a transport of military vehicles to the border of Ukraine, including reactions of the drivers indicating they were the individuals mentioned in the video

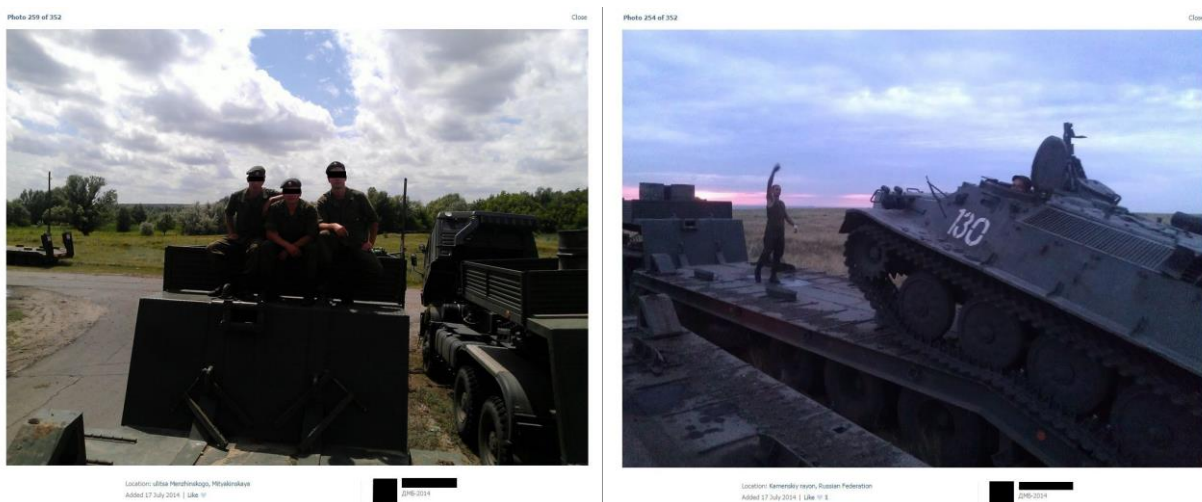
³¹ <https://en.informnapalm.org/truckers-rublevka-147th-automotive-logistic-support-battalion/>;
<https://informnapalm.org/2491-dalnobojshhyky-s-rublevky-147-j-abmo>

³² <http://ok.ru/video/18542758608>

Examination of this VK community provided an abundance of information and pictures of military vehicles being transported to the border of Ukraine. One series of geotagged pictures uploaded on 17 July 2014 documents the transport of military vehicles on the M2 highway, beginning approximately 100 kilometers south of Moscow. The convoy proceeds through Plavsk and Kursk to Voronezh and then onto Millerovo via M4 and Mityakinskaya via smaller roads. The convoy's journey ostensibly ended in a field in Kamenskiy rayon near Anikin and Berezka, just a few kilometers from the border with Ukraine.



Military equipment being transported from Voronezh (left) on the M4 highway (middle) to Millerovo (right)

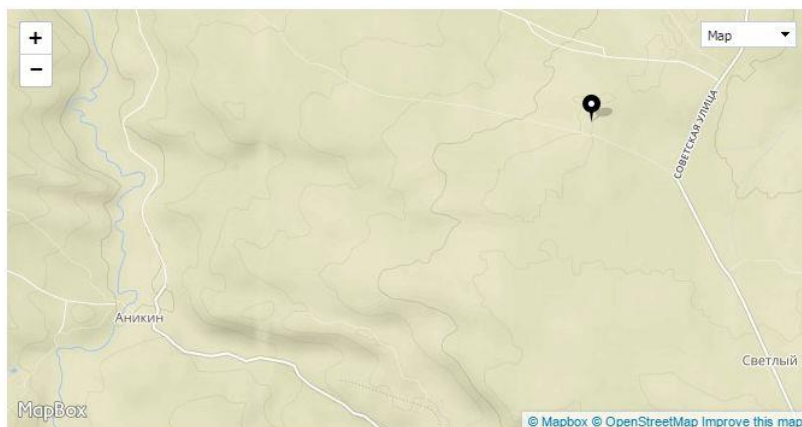


Left: trailers in Mityakinskaya

Right: a tank off-loaded in Kamenskiy rayon near Anikin

Comparing the location of this final stopping point in Kamenskiy rayon with recent satellite imagery of August 2014 on Google Earth shows something quite remarkable: a camp with many military vehicles. The Bellingcat investigation team discovered this camp before using an on-line tool called Yomapic.³³ (Yomapic, at the time of writing, does not function the way it used to, as the ability to search based a specific date range no longer works.)

³³ <http://www.yomapic.com>



Geotagged location of the photograph above where a tank is unloaded off a trailer in Kamenskyi rayon near Anikin and Berezka



The same area in April 2013 (left) and in August 2014 (right) as seen on Google Earth satellite imagery; note the area to the left of the dark-colored fields



Zooming in on the August 2014 satellite image reveals a large number of vehicles

Another member of the 11385 community posted images that also indicate the transport of military vehicles to the border area of Ukraine:



Added 25 October 2014 | Like 10

Unlabeled



Added 25 October 2014 | Like 10

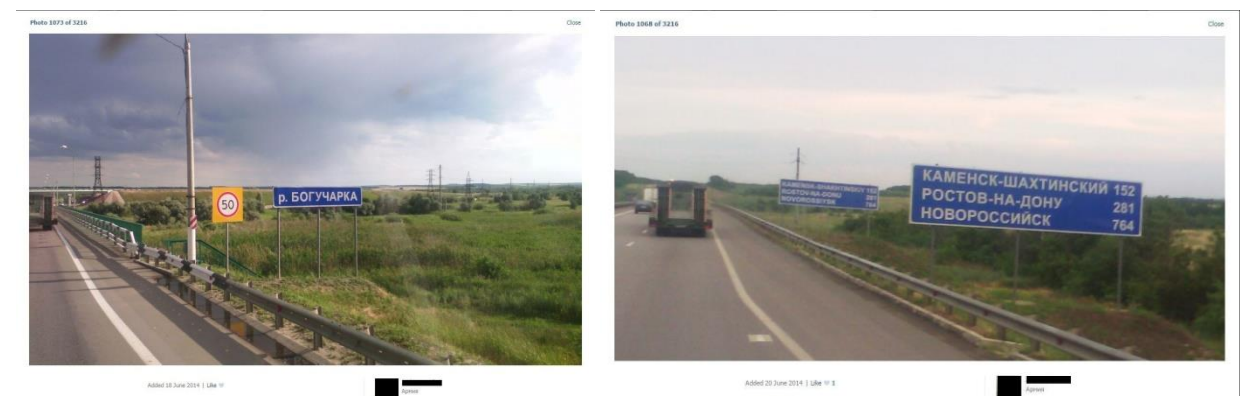
Unlabeled

Left: trucks in a military camp

Right: explosions seen off in the distance



Yet another member of the community posted images in his own photo album on 20 June 2014 of road signs, showing the route of a transport of military vehicles:



³⁴

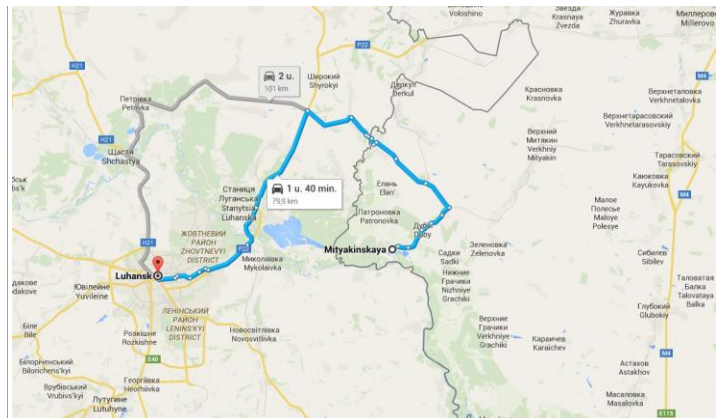
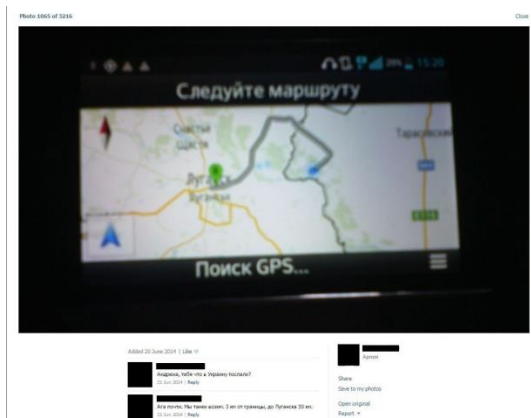
<http://www.google.com/maps/place/Bogucharka,+Voronezhskaya+oblast'+Russia,+396755/@49.9005357,40.2413181,15z/data=!4m2!3m1!1s0x41220cc52ef051d3:0xa2b7ca10afe5b8b9>



Convoy headed in the direction of Millerovo (left) and near Millerovo (right)

This same user also posted a photograph of a GPS system showing a route from Russia to Luhansk, Ukraine. A woman asks in a comment under the image, “Did they send you to Ukraine?” and he answers, “Yes almost. We are transporting tanks. 3 kilometers from the border, to Luhansk 30 kilometers.”

When the route seen on the GPS is compared with Google Maps, it appears that the route begins in Mityakinskaya, Russia (which, indeed, is just a few kilometers from the border) and ends in Luhansk. This, of course, does not necessarily prove that the driver went to Ukraine himself, but it is a strong clue that Luhansk was the final destination of the military equipment.



Calculation of the route from Mityakinskaya, Russia to Luhansk, Ukraine displayed on a photograph of a GPS system by the driver (left) and displayed on Google Maps (right)

The suggested route on the GPS, however, is not the route the convoy seems to take to deliver vehicles to the border (and perhaps to Luhansk), as another picture in his album, uploaded five days later, shows. The road sign indicates it is 23 kilometers to Donetsk, Russia and four kilometers to “Promzona,” which refers to an industrial zone to the west of Kamensk-Shakhtinsky. The specific road sign can be found on a road going through Kamensk-Shakhtinsky.³⁵



Photograph of a road sign showing 23 kilometers to Donetsk and four kilometers to Promzona

Another member of the same 11385-2 community also posted pictures on his profile that indicate that he was involved in the transport of vehicles to the border of Ukraine, and his profile’s description of military service shows his military activities as being in Kalininets, Novosmolinskiy, Kursk, Millerovo, and Kamensk-Shakhtinsky.

35

http://www.google.com/maps/@48.298576,40.244233,3a,37.5y,339.56h,83.33t/data=!3m4!1e1!3m2!1s9VvSxE3Ef4VTbG5dqTES_g!2e0

A map of his geotagged pictures helpfully depicts at a single glance where his military service took place:

Military Service

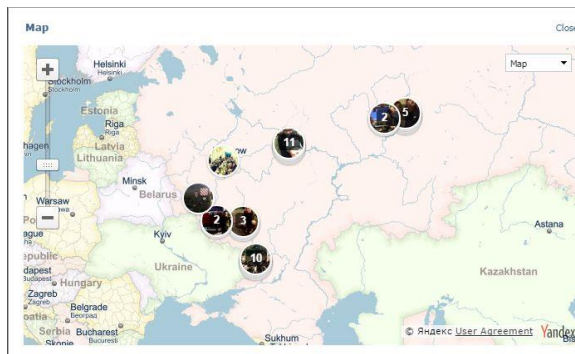
Branch/Unit: Московская обл, Наро-Фоминский р-он, п.Калининец в/ч 11385-2
Russia, 2013–2014

Branch/Unit: Нижегородская обл, п.Новосмолинский в/ч 11385
Аэтомбат
Russia, 2013–2014

Branch/Unit: г.Курск в/ч 31786
Russia, 2013–2014

Branch/Unit: г.Миллерово, Ростовская обл.Танковая учебная
часть
Russia, 2013–2014

Branch/Unit: г.Каменск-Шахтинский, Ростовская обл.
Russia, 2013–2014



Military service information (left) and a map of geotagged photographs (right) as displayed on a driver's profile from Unit 11385-2.



Left: A group photo found in many photo albums of 11385-2 community members, geotagged near Voronezh;
Right: a geotagged picture in Mityakinskaya near the border of Ukraine.



Left: A photograph of a sign of the town Mityakinskaya, geotagged in that same village

Right: a field geotagged near Mityakinskaya

One wall post in particular on this driver's VK profile confirms his involvement in the transport of military vehicles to the border of Ukraine. A few videos and images in the post show the transport of trucks, tanks on trailers, and even a video of the July Buk convoy that was filmed 19 July 2014 (and uploaded 31 July 2014) in Stary Oskol:³⁶



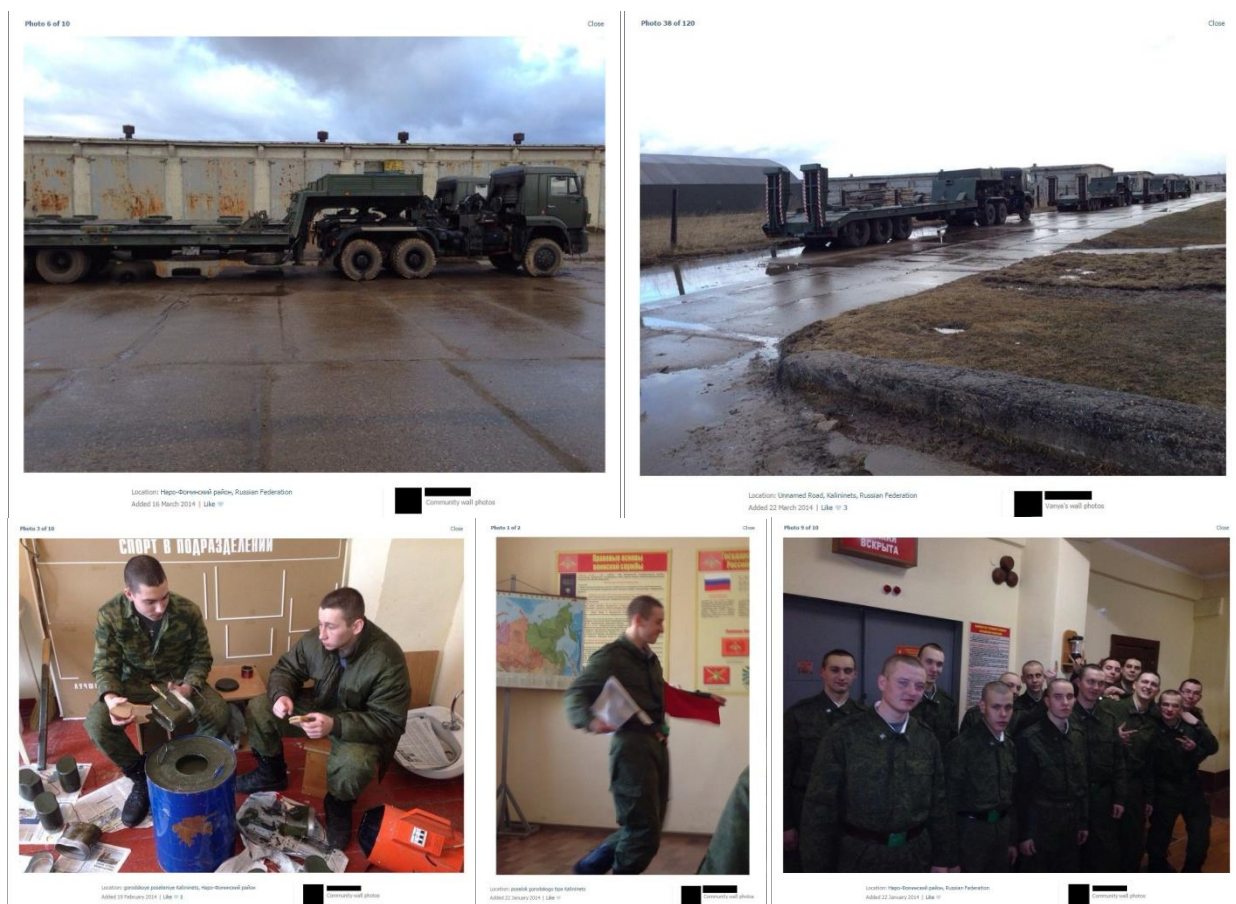
Videos and images on a driver's VK profile showing the transport of trucks, tanks on trailers, and a video of the 19-21 July 2014 Buk convoy (left corner).

³⁶ <http://www.youtube.com/watch?v=lptBPrLvD78>

Section 4: Involvement of the 2nd Automobile Battalion in the June and July 2014 Buk Convoys

Investigating more contacts of Vladimir P (introduced in Section 2 as the driver who stands next to the trailer with the license plate XP 4679 50, which was seen in the 23-25 June 2014 Buk convoy) and further examination of the 11385-2 VK community (introduced in Section 3) generated much more information, not the least of which was that the 2nd Automobile Battalion (specifically, subunit 2, located in Kalininets) took part in the June and July 2014 Buk convoys.

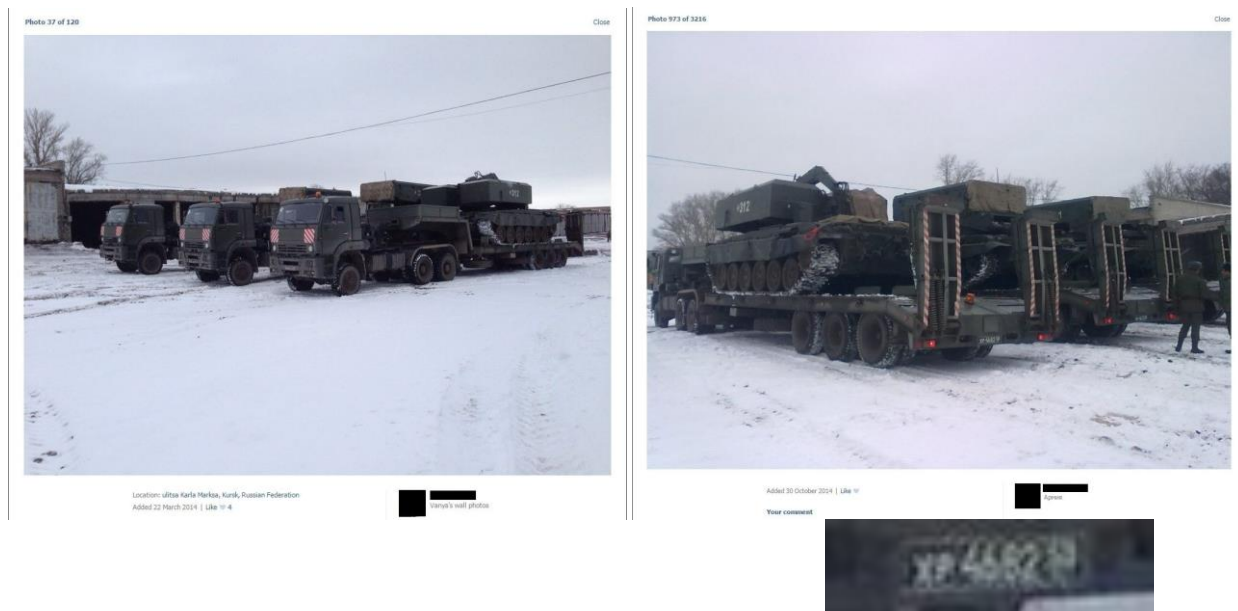
Pictures posted on the wall of the 11385-2 community and photographs from one of the member's personal albums confirm the location of subunit 2 of the 2nd Automobile Battalion as being in Kalininets:



Top: photographs of subunit 2 of the 2nd Automobile Battalion show trailers parked on a base geotagged in Kalininets (Naro-Fominsk rayon)

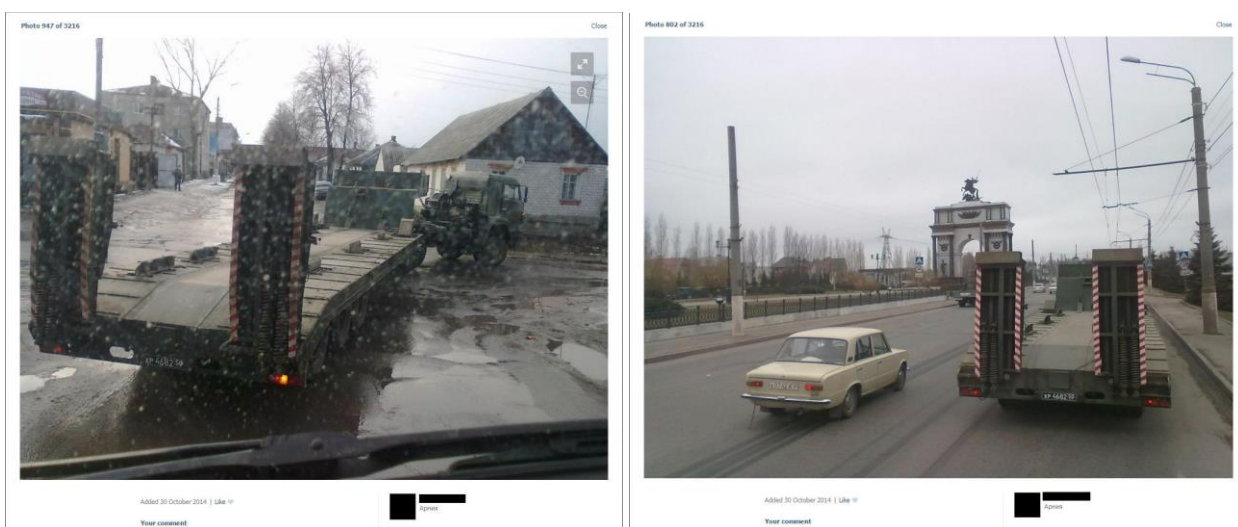
Bottom: more photographs geotagged in Kalininets show that not only are trailers parked here (temporary), but there is also a military base

Pictures in photo albums of the 11385-2 community members display the connection between the 2nd Automobile Battalion of Unit 11385 and the June and July 2014 Buk convoys. In a picture uploaded 22 March 2014 (geotagged in ulitsa Karla Marksa in Kursk), three Kamaz trucks with trailers are visible, one of them hauling a vehicle with “312” displayed on it. In another picture, uploaded by a different member, similar trucks with trailers are visible along with the vehicle marked 312, but this time the license plate of the trailer is visible. The trailer’s license plate is XP 4682 50, the same one seen in the July Buk convoy (Section 1). The driver has many more photographs of trailer XP 4682 50 in his photo album.



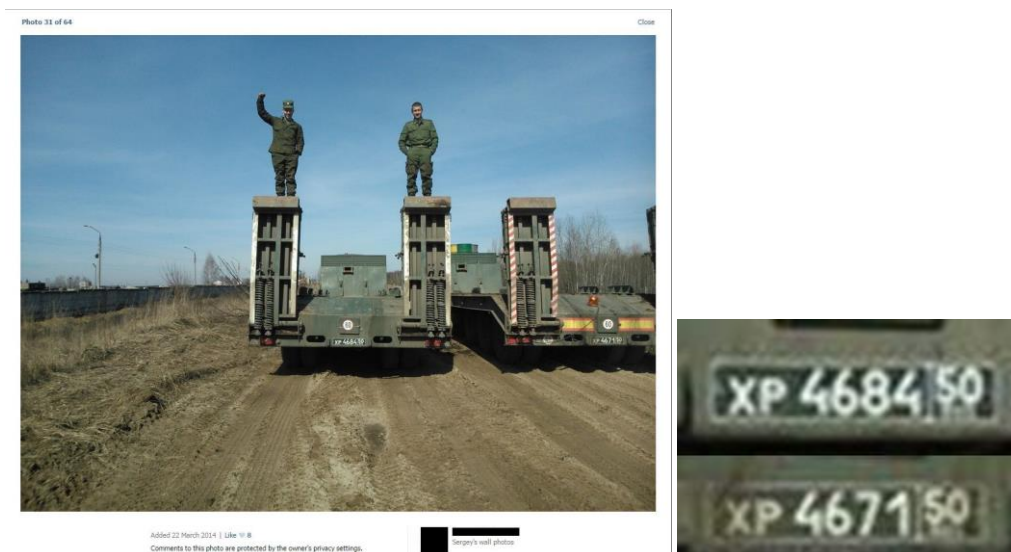
Left: three trucks with trailers and a vehicle marked 312 geotagged in Kursk

Right: similar trucks and trailers and the same vehicle marked 312 on a trailer with license plate XP 4682 50



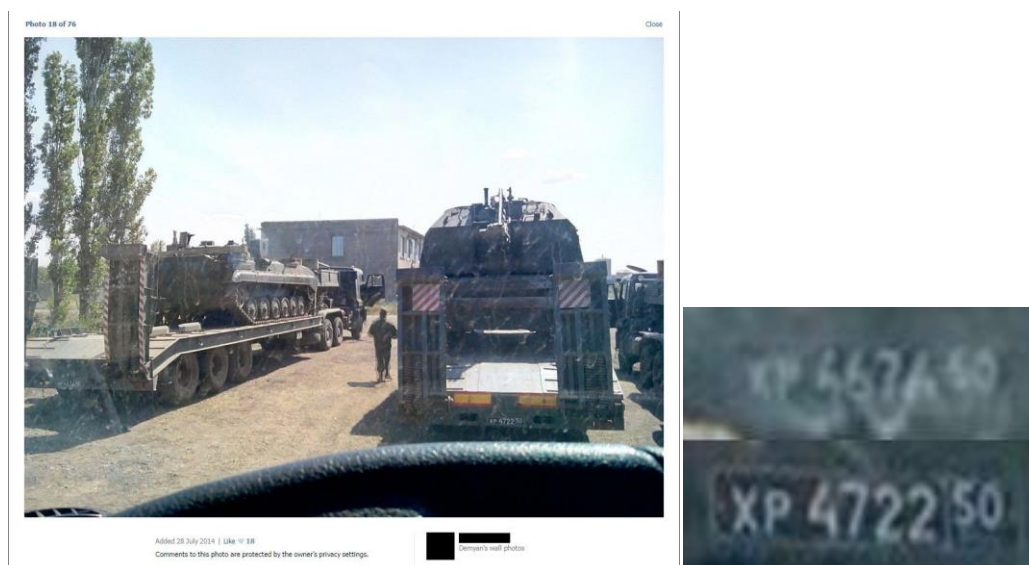
More photographs of trailer XP 4682 50 in the driver’s photo album

An album of a different 11385-2 member contains a photograph of another trailer with a familiar license plate. Two trailers are visible in a photograph uploaded on 22 March 2014 – one with the license plate XP 4684 50, which was not in any of the Buk convoys and another with the license plate XP 4671 50, which was seen in the 19-21 July 2014 Buk convoy (see Section 1):



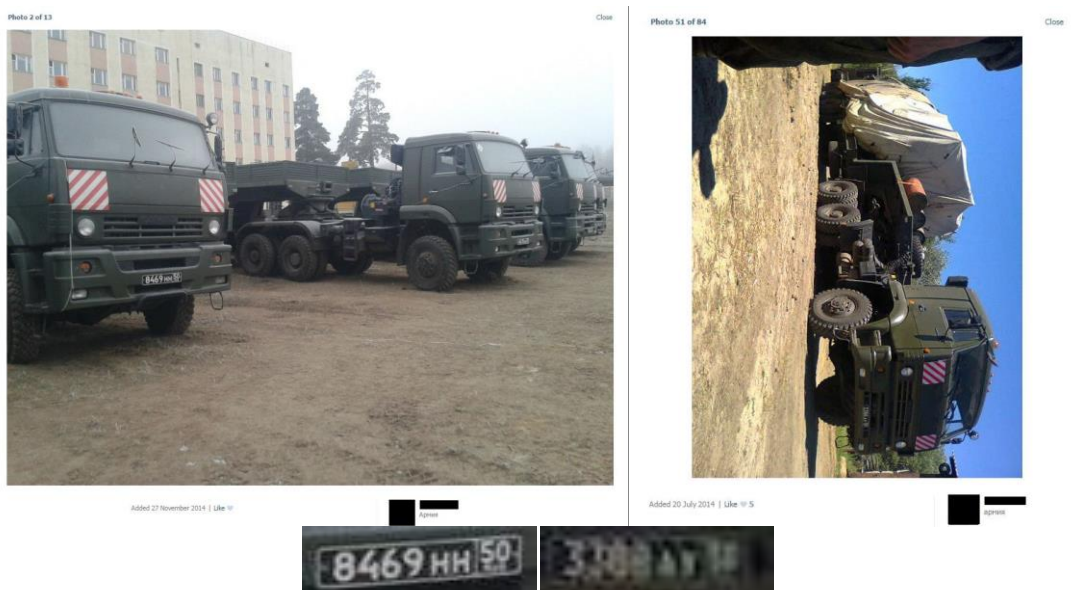
Two trailers with license plates XP 4684 50 and XP 4671 50; the latter was part of the July Buk convoy

In yet another 11385-2 driver's album, there is a photo of another trailer with a familiar license plate. The photograph, uploaded 28 July 2014, also shows two trailers, one with the license plate XP 4676 50, which is not seen in any of the Buk convoys, but also a trailer with license plate XP 4722 50, which was in the July Buk convoy (see Section 1):



Two trailers with license plates XP 4676 50 and XP 4722 50; the latter was part of the July Buk convoy

In addition to trailers, a number of Kamaz trucks from the 19-21 July 2014 Buk convoy can be found in the photo albums of several Unit 11385-2 drivers. One 11385-2 community member posted a picture of a truck with the license plate 8469 HH 50 on 27 November 2014; another posted a picture on 20 July 2014 of a truck with covered cargo with the license plate 3388 AY 50. Both of the trucks were part of the June Buk convoy that also transported Buk 3x2 linked to the downing of MH17 (see Section 1).



Left: a truck with license plate 8469 HH 50

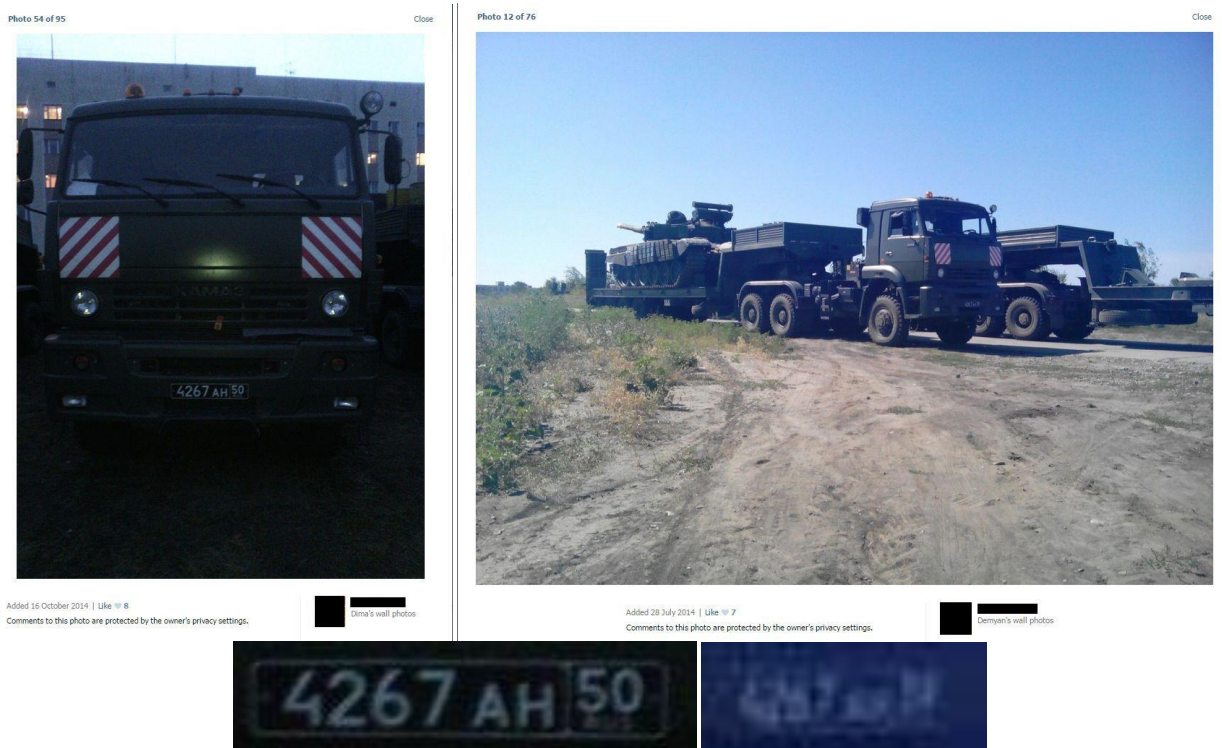
Right: a truck with license plate 3388 AY 50; both of the trucks were part of the 23-25 June 2014 Buk convoy. The covered cargo in the picture of the truck with the 3388 AY 50 license plate uploaded 20 July 2014 seems to have a very similar shape as a Buk missile launcher. The upload date leads us to believe that the photograph was taken of the 19-21 July 2014 Buk convoy, which means the truck was used for both convoys (since it was also in the 23-25 June 2014 Buk convoy). If not, perhaps the Buk 221 being hauled by the same truck in June was later covered, and the image was uploaded much later in the photo album of the driver.



Left: truck with the license plate 3388 AY 50 hauling covered cargo, uploaded 20 July 2014;

Right: a covered Buk missile launcher from a 19 July 2014 video filmed in Stary Oskol (flipped horizontally for comparison)

The photo albums of Vladimir P's contacts not only contain pictures of the trailer that transported Buk 3x2 in the June convoy, but also the truck that hauled the trailer. It should be noted that Vladimir P himself is not a member of the 11385-2 community; he was in unit 11385 in Novosmolinskiy (near Mulino), the location of the 2nd Automobile Battalion headquarters. Among his contacts are two drivers who posted pictures of a Kamaz truck with the license plate 4267 AH 50 – the same truck that hauled Buk 3x2 in the June convoy. The first photograph was posted on 16 October 2014 (along with a few more photographs of the truck and the driver standing in front of the truck). The second photograph was posted on 28 July 2014 by the driver that also posted a photograph of trailer XP 4722 50, seen in the July convoy:



Left: picture of a truck with license plate 4267 AH 50 posted 16 October 2014

Right: picture of the same truck with license plate 4267 AH 50 posted 28 July 2014

The second picture was also posted on a Unit 11385 VK community³⁷ (see Section 2) on 29 July 2014, probably by the person, but his name is not visible. It should also be noted that none of the 11385 or 11385-2 drivers are followers of the public community, so their names will not be found by searching it.

Since the second picture was posted a little over a month after the June 2014 Buk convoy, it is very possible that the driver that posted this picture was in fact the driver of the truck in June 2014 who transported Buk 3x2.

³⁷ <http://vk.com/public73883232>

Section 5: Involvement of the 147th Automobile Battalion in the June and July 2014 Buk convoys

Before this investigation, the Bellingcat investigation team received a photograph, showing a Buk missile launcher with number 232 on a trailer hauled by a Kamaz truck. (We are not providing the name of the source of the photograph so as to protect his/her identity.) The Buk missile launcher 232 was part of the June convoy, and based on the fact that behind Buk 232 is another Buk on a trailer being hauled by a truck, it is very likely that the vehicles in the photograph are indeed part of that Buk convoy that traveled from Kursk to Millerovo from 23 to 25 June 2014. The VK profile that turned out to be the original source of the photograph was soon found by the Bellingcat investigation team as well as by a Ukrainian blogger a day later. The blogger posted the Buk 232 photograph along with a host of others from the VK profile along with the name and contact information of the person who uploaded the photographs to his profile. This resulted in the immediate removal of the profile the following day, but fortunately our team had already archived the profile and saved any photographs that could prove important for further investigation. The full name of the driver will not be mentioned for obvious reasons, despite the fact that his profile has already been removed. He will be called "Dmitry Z" in this report.



Photograph of Buk 232 on a trailer being hauled by a Kamaz truck, uploaded 24 June 2014

The Buk 232 photograph was uploaded 24 June 2014, which fits with the dates of the 23-25 June Buk convoy that transported Buk 3x2 (the Buk related to the downing of MH17) to the border of Ukraine. A closer examination of the photograph reveals more details that prove that the photograph indeed shows the June Buk convoy. First, the Buk on the trailer behind Buk 232 seems to have an uncovered lamp on top facing the side of the truck in front, while Buk 232 in front obviously does not have a lamp uncovered. Revisiting one of the videos of the 23-25 June 2014 Buk convoy filmed southeast of Alexeyevka³⁸ showed that there is indeed one Buk missile launcher with an uncovered lamp: Buk 3x2. And, as with the photograph, the video shows that the truck hauling Buk 3x2 is driving behind the truck hauling Buk 232.



Left: photograph showing a Buk missile launcher behind Buk 232 with an uncovered lamp

Right: a video showing Buk 3x2 in the 23-25 June 2014 convoy with an uncovered lamp

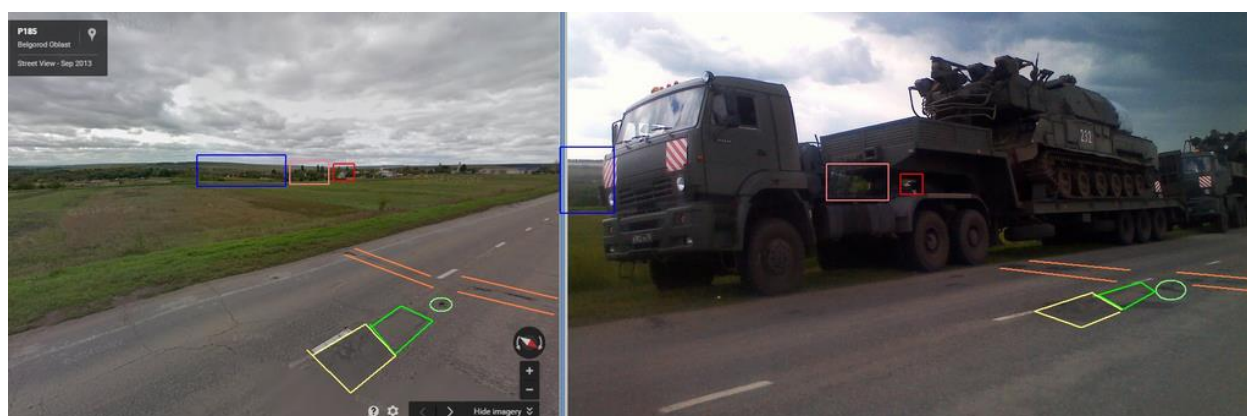
When taken alone, the photograph seems very difficult to geolocate, since there are no obvious landmarks – only a road, a field, and a house that is slightly visible through a gap between the truck and the trailer that hauls Buk 232. However, based on what we know about the route of the convoy and a previously geolocated photograph of a soldier who posted photographs of the convoy on his profile, our team was able to successfully geolocate the photograph on road R185 along Varvarovka.^{39 40}

³⁸ <http://www.youtube.com/watch?v=FoMulJSig9Q>

³⁹ <http://www.google.nl/maps/place/50%C2%B022'46.3%22N+38%C2%B050'19.8%22E/@50.37953,38.838821,354m/data=!3m2!1e3!4b1!4m2!3m1!1s0x0:0x0>

⁴⁰ <http://www.google.nl/maps/@50.379503,38.83891,3a,90y,237.86h,69.7t/data=!3m4!1e1!3m2!1snokFfjs3e2hfV1CBbyBLWQ!2e0>

It should be noted that the Google Street View image below is from 2013 while the photograph is from 2014, and the lines on the road have been repainted in the interim. Nonetheless similar cracks and spots on the road are visible:



Left: Street View of road R185 along Varvarovka

Right: photograph of Buk 232 on a trailer being hauled by a truck in the 23-25 June 2014 Buk convoy

A comparison of the horizon between Google Street View and the photograph shows a very clear similarity: tree lines in the distance match, but also a secondary road and fields match exactly.



Comparison between Google Street View (left) and a part of the Buk 232 photograph (right)

The last thing to be noted in the photograph is the truck's license plate, 6902 HH 50, which had not been seen before in videos and photographs of the June Buk convoy.

Another of Dmitry Z's photographs, uploaded 25 June 2014, shows a trailer with a Buk missile launcher driving on a road passing a sign indicating it is five kilometers to Millerovo. This road and sign was geolocated⁴¹ and turned out to be very close to the location where the June Buk convoy was filmed on 25 June 2014 for the last known time.^{42 43} The route after Millerovo and the final destination of the convoy could not be definitively established, but a military base next to the Millerovo airport⁴⁴ was the likely destination on 25 June 2014; afterward the military equipment could have been dispersed in various directions. In Section 3 we describe a transport from Millerovo to Donetsk, Russia via Kamensk-Shakhtinsky. One of Dmitry Z's photographs (uploaded 28 June 2014) shows the transport of other military vehicles in the direction of Donetsk, Russia via the M4 highway and M21⁴⁵ leading through Kamensk-Shakhtinsky.



Left: a trailer with Buk missile launcher passing a road sign displaying Millerovo five kilometers
 Right: a trailer with different military equipment turning toward Donetsk, Russia from the M4 highway

⁴¹

<http://www.google.com/maps/@48.902792,40.452216,3a,75y,294.59h,85.95t/data=!3m4!1e1!3m2!1sehw2clpwRhftU1NhMwF5A!2e0>

⁴² <http://www.youtube.com/watch?v=VrjbVlv61qE>

⁴³ <http://www.bellingcat.com/resources/case-studies/2014/11/08/geolocating-the-russian-buk-convoy-in-millerovo>

⁴⁴ <http://www.google.com/maps/@48.9485255,40.2968312,2816m/data=!3m1!1e3>

⁴⁵

http://www.google.com/maps/@48.253532,40.292886,3a,90y,223.99h,77.52t/data=!3m4!1e1!3m2!1sVvPhyEfiO_cNLdlsLDtVlw!2e0

The final picture showing the truck hauling a military vehicle resembling an MT-LB clearly shows the license plate (6902 HH 50), the driver himself (Dmitry Z), and a message under the picture saying, "last route on my 6902HH." The picture has not been geolocated (yet), but to the left in the distance, there is metal construction visible similar to those above train tracks at several locations in Kamensk-Shakhtinsky. The last picture of Dmitry on the road, uploaded on 2 July 2014 (the last day of his service according to comments on his profile), shows empty trailers on an off-ramp, which was geolocated off the M4 highway in the direction of Millerovo.⁴⁶ A video filmed in Tarasovskiy showing five trucks hauling empty trailers has been uploaded to YouTube on 5 July 2014,⁴⁷ probably showing the same vehicles.



Left: Dmitry Z's last route with his truck, 6902 HH 50

Right: empty trailers going back toward Millerovo

According to Dmitry Z's profile, he served in "В/ч" (military unit) 83466, or "147 АБМО," which is short for "147-й Автомобильный Батальон Материального Обеспечения," meaning 147th Automobile Battalion for Material Support. He was a member of a VK community called "147 АБМО РФ,"⁴⁸ and according to that community, the unit is based in Moscow. In a picture posted on the last day of his military service, he stands in front of the gate of the 2nd Automobile Battalion (Unit 11385) in Novosmolinskiy (near Mulino), revealing a direct connection between the 147th Automobile Battalion and the 2nd Automobile Battalion.

⁴⁶

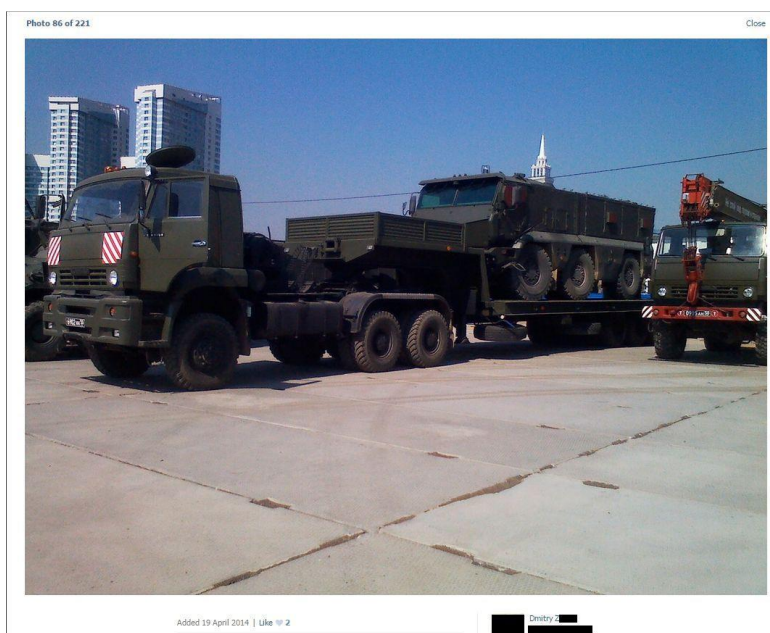
<http://www.google.com/maps/@48.902398,40.465129,3a,37.5y,179.42h,84.3t/data=!3m4!1e1!3m2!1sI0bcyJXz6LoWrJsAqCnZKA!2e0>

⁴⁷ <http://bellingcat-vehicles.silk.co/page/1200-Tarasovskiy%3A-empty-trailers>

⁴⁸ <http://vk.com/club15274673>

In addition to the photographs above, there were pictures in his photo album of himself together with other soldiers/drivers sitting around a campfire or on a bench, and trucks and trailers covered with camouflage nets or branches. A few names are displayed under some of the images, linking to profiles of other drivers that might have been part of the 23-25 June 2014 Buk convoy, since the images were uploaded from 14 to 19 June 2014 and taken in the area of Tambov or Voronezh.

An older picture (uploaded 19 April 2014) from his album again shows his truck (6902 HH 50), this time in a city with high buildings, which was in turn geolocated in Moscow.⁴⁹ The truck is seen with other vehicles and, from another series of pictures of the same area, it seems that the vehicles were parked here temporarily to take part in a military parade. Thus, it is not the base of the 147th automobile battalion that is visible in the picture:



To establish the location of the 147th Automobile Battalion, a simple search for its address on Google provides the name of the street where it is located: “шоссе Рублевское, 68/2” (Rublevsky highway, 68/2).⁵⁰ Searching that location on Google Maps leads to a plausible area.⁵¹ To be completely sure, we cross-checked our finding with Wikimapia, which also confirms the location of the 147th Automobile Battalion as being in that area,⁵² although on Wikimapia the base is called “147-я Автомобильная база министерства обороны” (147th Automobile Base of the Ministry of Defense).

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<http://www.google.nl/maps/@55.790265,37.522253,3a,75y,316.78h,102.05t/data=!3m4!1e1!3m2!1sOqCVR-OpP4xi24FUA8UJ3Q!2e0>

50 <http://softloft.ru/?product=adres-v-ch-83466>

51 <http://www.google.nl/maps/@55.7698852,37.3817084,603m/data=!3m1!1e3>

52 <http://wikimapia.org/#lang=en&lat=55.769621&lon=37.381614&z=17&m=b>

Pictures under the description in Wikimapia and a Panoramio picture ⁵³ correspond with pictures of several VK communities of the 147th Automobile Battalion.



Left: 147th Automobile Battalion in Moscow on a Google Earth satellite image

Right: 147th Automobile Base of the Ministry of Defense on Wikimapia



Left: 147th Automobile Battalion on a Panoramio picture

Right: 147th Automobile Battalion from a picture posted in a VK community

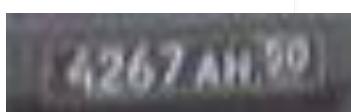
The connection between the 147th Automobile Battalion in Moscow and the 2nd Automobile Battalion in Mulino (and Kalininets and Belgorod) is not that clear, but in Dmitry Z's contact list are several contacts that are directly related to the 2nd Automobile Battalion and the transport of military equipment to the border of Ukraine. In fact, the Bellingcat investigation team found Dmitry Z's 147th Automobile Battalion profile from via one of the drivers from the 2nd Automobile Battalion. Other contacts of Dmitry also seem to be in touch with drivers of the 2nd Automobile Battalion.

⁵³ <http://www.panoramio.com/photo/60483443>

The last picture in Dmitry Z's photo album that caught our attention was a photograph uploaded onto his wall on 12 December 2013 by one of his contacts. The photograph shows a truck and trailer carrying a tank, and another truck partially visible parked next to it. Closer examination of the partially visible truck yields a familiar license plate: 4267 AH 50, the license plate of the truck that hauled the trailer with Buk 3x2 in the June convoy.



Added 12 December 2013 | Like 3



A truck with a trailer connected that carries a tank, and another truck parked next to it; the license plate (4267 AH 50) on the partially visible truck

This could indicate that the contact of Dmitry Z who posted this to Dmitry Z's profile, was the same person who took this photograph of Dmitry Z (who is likely the individual seen standing on the trailer). Since two trucks are visible, and the truck with the trailer and tank is probably Dmitry's truck, it is very possible that the truck parked next to it is the truck of the contact who posted this photograph. The profile of that person is very barren; there are just a few posts, among them a post on his wall by yet another driver with a link to a page with photographs of trucks with trailers and tanks. That other driver is also a contact of Dmitry Z, so it is very likely that both of the other drivers were also in military service with the 147th Automobile Battalion.

The driver who posted a photograph on Dmitry Z's wall raised our suspicions because soon after Dmitry Z deleted his profile, the driver removed the wall post with the link to the page containing photographs of trucks with trailers and tanks. One can speculate whether Dmitry Z sent a message to him to warn him that his profile was discovered. Or perhaps it was pure coincidence that he deleted his wall post just a few days after Dmitry Z removed his profile.

Another question worth examining is who transported Buk 3x2 (the Buk related to the downing of flight MH17) from Kursk on 23 June 2014 to Millerovo on 25 June 2014 and to Donetsk, Russia, probably on 16 July 2014? Here are some of the possible drivers:



Left: Vladimir P, standing next to trailer XP 4679 50 (image posted on 26 July 2014)

Right: driver 2 standing in front of truck 4267 AH 50 (image posted on 16 October 2014)



Left: driver 3, who posted an image of truck 4267 AH 50 in his photo album on 28 July 2014

Right: driver 4, who posted an image of truck 4267 AH 50 on the wall of Dmitry Z. (the driver of truck 6902 HH 50, which hauled Buk 232 in the 23-25 June 2014 Buk convoy) on 12 December 2013

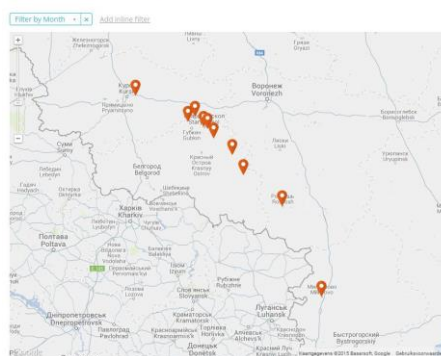
It is, of course, possible that yet another driver was responsible for driving Buk 3x2 in the June Buk convoy. And even when one of aforementioned drivers transported the Buk to Millerovo, it is still possible that another driver transported it later (probably 16 July) to Donetsk, Russia, where it crossed the Ukrainian border.

Section 6: Routes and Destinations of the June and July 2014 Buk convoys

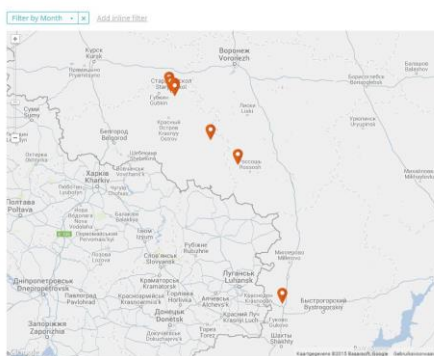
The photographs from albums of drivers of the 2nd and 147th Automobile Battalions provide a great deal of information regarding the routes of military vehicle transports to border areas. We found that transports typically travel from Kursk or Voronezh over the M4 highway to Millerovo, Donetsk (in Russia), and farther on to Rostov-on-Don. The Bellingcat investigation team researched hundreds of videos and images of military convoys both in Ukraine and Russia, which served as the foundation for our Vehicle Tracking Project.^{54 55} Many videos and images also show the transport of military vehicles from Rostov-on-Don to the border area via Taganrog by way of the E58 highway.

The videos and images of the June and July 2014 Buk convoys (all of which have been added to the Vehicle Tracking Project), in addition to the photographs from the photo albums from drivers of the 2nd and 147th Automobile Battalions, provide a wealth of information about the routes of the convoys. The Vehicle Tracking Project, using the data visualization platform, Silk, clearly depicts the routes on a map:^{56 57}

Sighting pages with Buk convoy 23-25 June 2014 as Group mapped by Reference Location



Sighting pages with Buk convoy 19-21 July 2014 as Group mapped by Reference Location



Left: route of the 23-25 June 2014 Buk convoy on a Silk map (Vehicle Tracking Project)

Right: route of the 19-21 July 2014 Buk convoy on a Silk map (Vehicle Tracking Project)

⁵⁴ <http://www.bellingcat.com/resources/2015/02/03/ukraine-conflict-vehicle-tracking-launch>

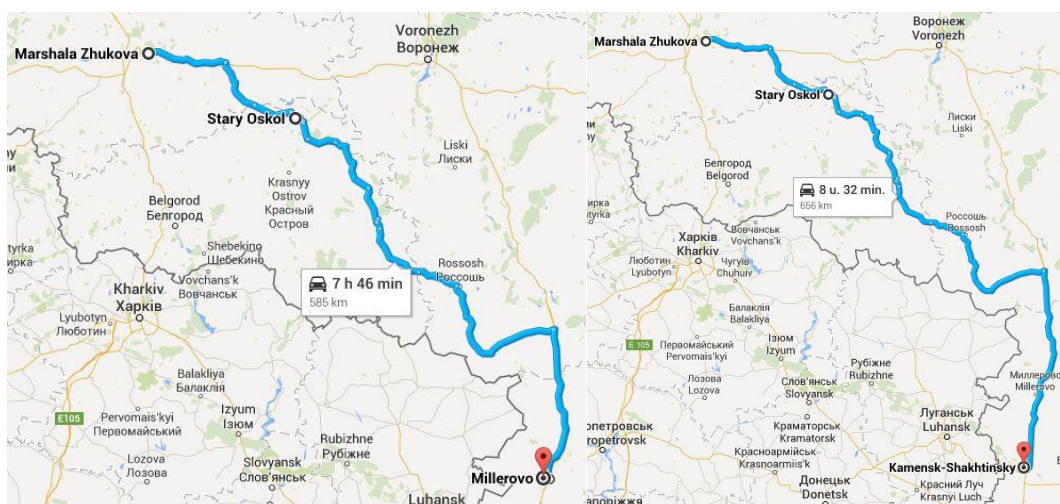
⁵⁵ <http://bellingcat-vehicles.silk.co>

⁵⁶ <http://bellingcat-vehicles.silk.co/explore/map/collection/sighting/column/image/column/date/column/equipment-category/location/reference-location/order/desc/title/on/silk.co/filter/enum/group/Buk%20convoy%2023-25%20June%202014/suggestion/filter/equals/month/slice/0/50>

⁵⁷ <http://bellingcat-vehicles.silk.co/explore/map/collection/sighting/column/image/column/date/column/equipment-category/location/reference-location/order/desc/title/on/silk.co/filter/enum/group/Buk%20convoy%2019-21%20July%202014/suggestion/filter/equals/month/slice/0/50>

Both the June and July Buk convoys passed through Stary Oskol, and we know that the June convoy passed through Alexeyevka. The June convoy was spotted in Rossosh, and the July convoy was seen not far from there, near Olkhovatka, indicating that the routes of both convoys were by and large similar. The only difference between the routes seems to be that the June convoy proceeded in the direction of Millerovo, while the July convoy drove farther south via Kamensk-Shakhtinsky to an area southwest of that town, probably the military camp near Anikin and Berezka that the Bellingcat investigation team uncovered (see Section 3). Two recently discovered sightings of the July convoy show that it passed Kamensk-Shakhtinsky⁵⁸ and went off the M21 highway in direction of Volchenskiy, instead of farther to Donetsk, Russia.⁵⁹ Since the military camp seen on an August 2014 satellite image is between Volchenskiy and Anikin, it is very likely that the July convoy went to this military camp. The June convoy very likely went to the Millerovo military airbase.⁶⁰

The convoys did not travel much on the M4 highway, which is remarkable, since many other convoys of other military vehicles drove long distances over M4. The reason could be that they did not want to slow down traffic too much on the highway; perhaps the time difference of about one hour (according to Google Maps) the route over M4 versus the road via Stary Oskol and Alexeyevka was not worth holding up traffic on a major highway, as the route via M4 is only a slightly shorter distance. Both convoys drove slowly, taking two days to reach their destinations; according to Google Maps, the trips should have taken only between eight and nine hours.



Left: route and destination of the 23-25 June 2014 Buk convoy

Right: route and destination of the 19-21 July 2014 Buk convoy

⁵⁸ <http://bellingscat-vehicles.silk.co/page/0213-Kamensk-Shakhtinsky%3A-Buk-convoy-driving-to-the-border>

⁵⁹ <http://bellingscat-vehicles.silk.co/page/0214-Kamensk-Shakhtinsky%3A-Buk-on-a-trailer>

⁶⁰

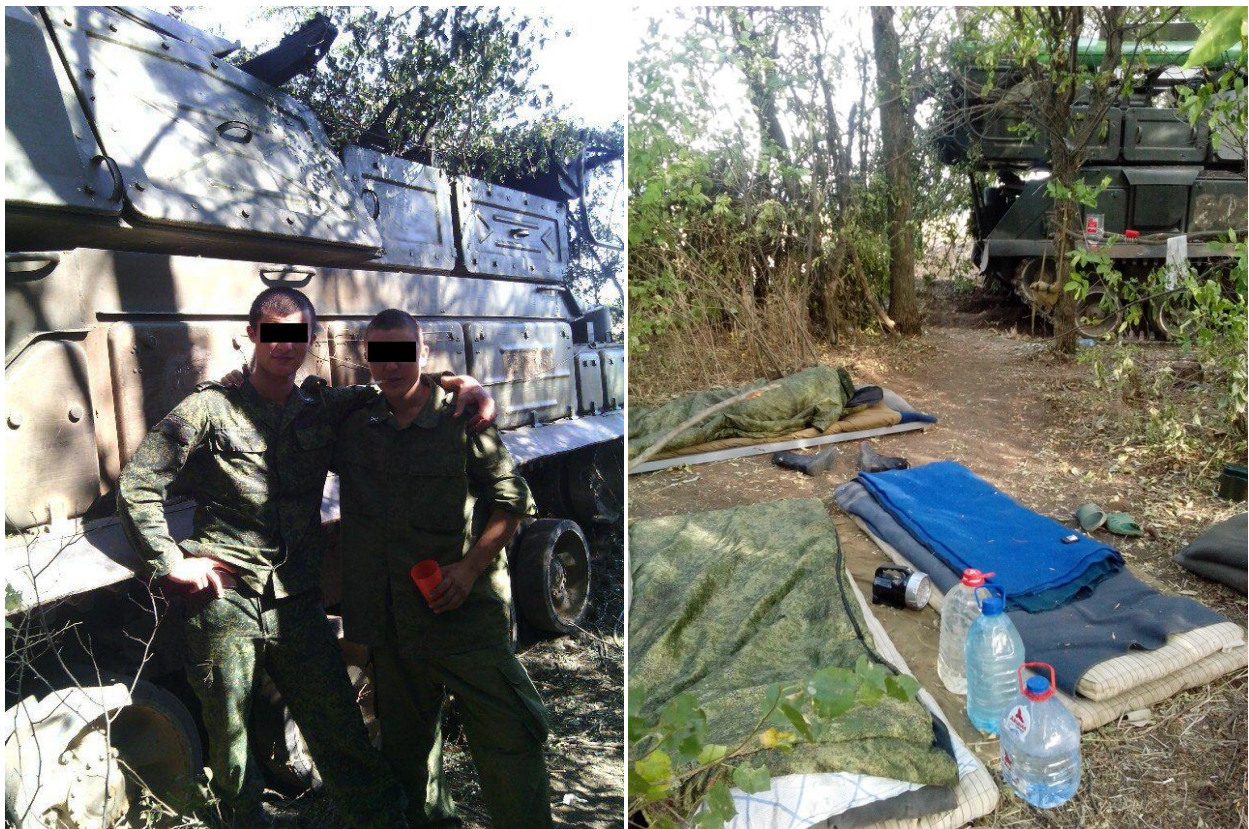
<http://wikimapia.org/6276563/ru/%D0%92%D0%BE%D0%B5%D0%BD%D0%BD%D1%8B%D0%B9-%D0%B0%D1%8D%D1%80%D0%BE%D0%B4%D1%80%D0%BE%D0%BC-%D0%9C%D0%B8%D0%BB%D0%BB%D0%B5%D1%80%D0%BE%D0%B2%D0%BE>



Left: military airbase northwest of Millerovo, the probable destination of the 23-25 June Buk convoy

Right: military camp southwest of Kamensk-Shakhtinsky, the probable destination of the 19-21 July Buk convoy

From these destinations the Buk missile launchers were probably moved to different locations along the border, camouflaged with nets, branches, and leaves as seen in photographs of Buk missile launchers discovered by the Bellingcat investigation team taken at a few different locations, including near Kuybyshevo and Voloshino, both villages close to the border with Ukraine.



Left: a picture of a Buk missile launcher camouflaged with branches geotagged near Kuybyshevo

Right: a picture of another Buk missile launcher, probably from the same area near Kuybyshevo



Left: a picture of a Buk missile launcher, camouflaged by leaves, posted by a 53rd Brigade member (of the 1st Battalion, 2nd Battery – hence the number 121 on his hat) in August 2014

Right: a picture of a soldier (related to the 53rd Brigade in Kursk), sitting on a Buk missile launcher,⁶¹ geotagged near Voloshino (a village west of Millerovo), posted in July 2014

One Buk missile launcher, however, had a different destination: Buk 3x2 was destined for Ukraine and thus had to be transported across the border. The shortest distance from the military airbase near Millerovo to the Ukrainian border is about 20 kilometers, but that area of Ukraine was, at the end of June⁶² and beginning of July 2014⁶³, under control of the Ukrainian army, and so Buk 3x2 had to cross the border farther south. The first plausible location that does not involve crossing a river would be Donetsk, Russia, which has an official border crossing to Izvaryne, Ukraine.

According to a video published to YouTube⁶⁴ by the Joint Investigation Team,⁶⁵ a Buk missile launcher was seen around midnight on 17 July (the night between 16 and 17 July) in “Северний” (Syeverniy) in Ukraine as well as in the early morning (around 5:00 AM) of 18 July driving through Lugansk in the direction of the border. An article published 19 July⁶⁶ on a Ukrainian news site (mainly consisting of an interview with Vitaly Naida, the head of the counterintelligence department of Ukraine’s security service), indicated that the missile launcher was seen on 18 July around 2:00 AM in Lugansk oblast traveling in the direction of “Северный - Верхняя Ореховка Российской Федерации” (Severniy – Verkhnyaya Orekhovka Rossiyskoy Federatsii), where, according to the article, two trucks hauling Buk missile launchers crossed the border, one of which had four missiles and the other three.

⁶¹ http://www.armyrecognition.com/images/stories/east_europe/russia/missile_vehicle/sa-11_gadfly/pictures/sa-11_gadfly_anti-aircraft_missile_to_armoured_tracked_vehicle_Russian_army_russia_008.jpg

⁶² <http://fr1.sidcdn.net/maps/nsdc/2014/06/large/map-nsdc-2014-06-25-uk-w3000.jpg>

⁶³ <http://www.slovoidilo.ua/articles/3724/2014-07-17/karta-ato-po-sostoyaniyu-na-17-iyulya.html>

⁶⁴ <http://www.youtube.com/watch?v=olQNpTxSnTo>

⁶⁵ <http://www.jitmh17.com>

⁶⁶ http://news.liga.net/news/politics/2589163-posle_krusheniya_boeing_777_boeviki_vyvezli_v_rf_tri_buk_m1_sbu.htm

The article went on to say that around 4:00 AM the same day, three more trucks crossed the border at that location, one hauling an empty trailer, one hauling a missile launcher with four missiles, and one hauling a military vehicle, which might have been a control unit (note: the vehicle was likely covered, so it could not be identified).



Left: screenshot from the JIT video mentions that a truck was seen hauling a missile launcher on 17 July around midnight in the area of Severniy ("Северное," or Severnoye, as the town is called in Russian)

Right: screenshot from the JIT video mentions that a truck was seen hauling a missile launcher in the early morning of the 18 July, around 05:00 AM

The JIT video does not specify the location where the truck with the missile launcher crossed the border on its way back to Russia on 18 July, although the article from the Ukrainian news site does mention the location of "Северный" (note: "Северный," or Severniy, is the Ukrainian name of the town in Russian, while "Северний," or Syeverniy, is the Ukrainian name of the town in Ukrainian) as the direction in which the truck with the missile launcher was driving. The article also mentions the location "Верхняя Ореховка Российской Федерации" (Verkhnyaya Orekhovka Rossiyskoy Federatsii), translated as Verkhnyaya Orekhovka Russian Federation. While Google Maps finds a "Верхняя Ореховка" (Verkhnyaya Orekhovka) in Lugansk oblast in Ukraine⁶⁷ (and not in Russia), it becomes clear that this is not the location meant in the article when using Yandex maps. Since the area in Russia on the other side of the border near Severyniy is called "днецкий городской округ ростовской области" (Donetsk municipality, Rostov region), a search for "Верхняя Ореховка, Донецкая область, Россия" (Россия meaning Russia) reveals a small village (or "поселок," poselok, meaning settlement) to the north of Donetsk (in Russia) called "Верхняя Ореховка."⁶⁸

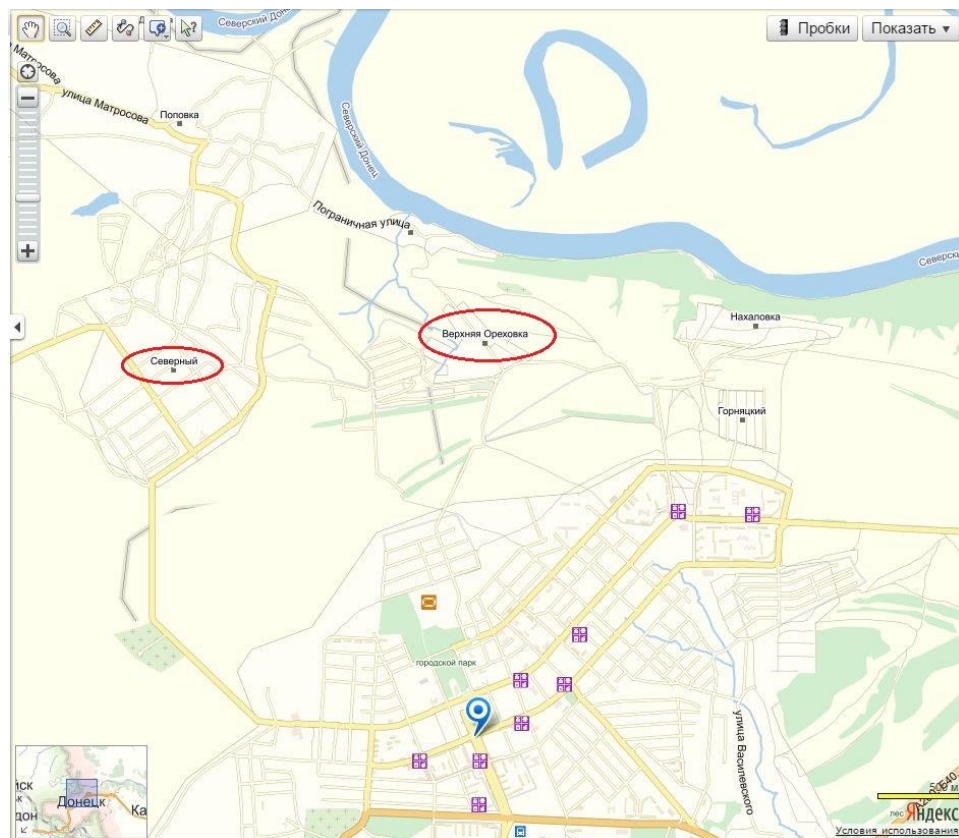
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<http://www.google.com/maps/place/Verkhnya+Orikhivka,+Luhans'ka+oblast,+Ukraine/@48.355855,39.3429015,12z/data=!4m2!3m1!1s0x40e02aae90454da5:0x66f6f50abb37e924?hl=en>

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<http://maps.yandex.ru/?ll=39.946877%2C48.357270&z=14&text=%D0%92%D0%B5%D1%80%D1%85%D0%BD%D1%8F%D1%8F%20%D0%9E%D1%80%D0%B5%D1%85%D0%BE%D0%B2%D0%BA%D0%B0%2C%20%D0%94%D0%BE%D0%BD%D0%B5%D1%86%D0%BA%D0%B0%D1%8F%20%20%D0%BE%D0%B1%D0%BB%D0%B0%D1%81%D1%82%D1%8C%2C%20%D0%A0%D0%BE%D1%81%D1%81%D0%B8%D1%8F&sl=39.946496%2C48.355723&sspn=0.101280%2C0.045706&ol=geo&oll=39.946877%2C48.357270>

Despite the fact that the official border crossing was (and still is) under separatist control in June and July 2014, apparently a different unofficial crossing was chosen for the transport of the Buk missile launcher (and probably other military equipment) according to the article. Having a closer look at the Google Earth satellite image of that area makes clear that there are several locations where the Buk missile launcher could have crossed the border. Two roads appear to cross the border, namely, Pogranichnaya ulitsa near the river and Polevaya ulitsa (Yandex maps shows a third road just south of Polevaya ulitsa, but Google Street View makes clear that this road has been overgrown by trees and bushes). It is another option, however, that piqued our interest.

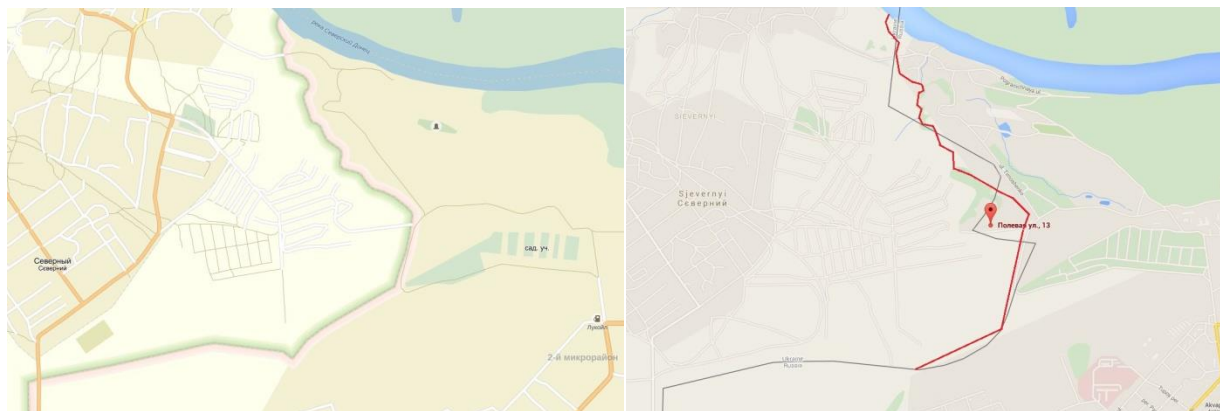


Severniy in Ukraine (red circle on the left) and Verkhnyaya Orekhovka (red circle in the middle) near Donetsk in Russia



Three possible crossing from Severniy in Ukraine to Verkhnyaya Orekhovka in Russia

It should first be noted that the border between Ukraine and Russia drawn on Google Maps is not completely correct. Compared with the border drawn on Yandex Maps, there are some differences. On Google Maps, we see that the border crosses a road and then crosses it again shortly thereafter, while the road is clearly in Verkhnyaya Orekhovka, Russia. The border on Google Maps goes through several houses, both on Ukrainian and Russian side, and seems to consist of a few straight lines. The border drawn shown on Yandex Maps, however, does not cross that road in Verkhnyaya Orekhovka two times, only slightly goes through one house, follows a small river for a while, and then goes around a few houses before reaching the river. Yandex Maps, being a Russian maps site and depicting a much more logical border, seems to depict the Russia-Ukraine border more accurately than Google Maps. Correcting the border on Google Maps using the Yandex Maps border results in the following:



Left: the border between Severniy in Ukraine and Verkhnyaya Orekhovka in Russia on Yandex Maps

Right: the same border on Google maps with approximate corrections added in red

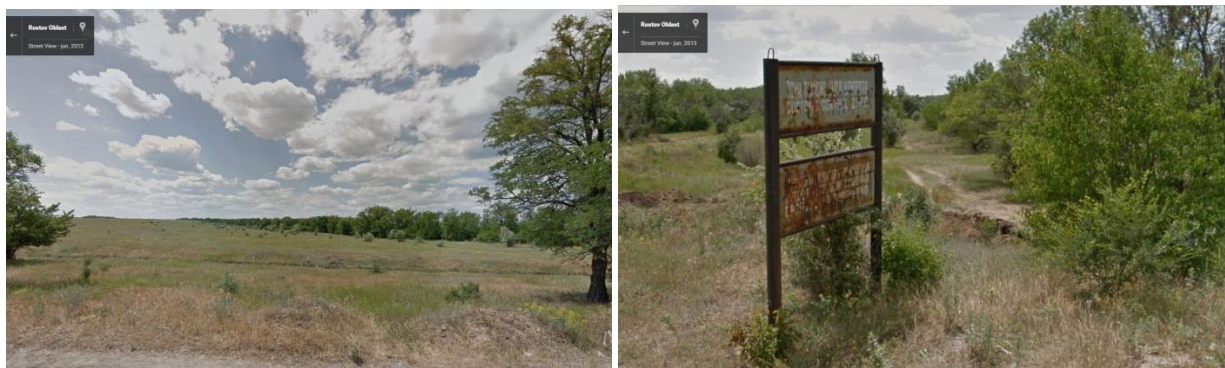
Comparing current and historical Google Earth satellite imagery reveals unambiguous tracks in a field in southern Severniy that lead to a road in Verkhnyaya Orekhovka in Russia:



Left: April 2013 satellite image of southern Severniy showing a small sand road

Right: the same area in August 2014, showing many tracks of vehicles and a much wider sand road

Google Street View of the road seen running perpendicular to the sand road looked a bit different in 2013 when the images were taken, but it nonetheless gives a general idea of what the area looks like on the ground. It seems that the border between Russia and Ukraine is visible as a gap between the fields, and it should also be noted that the space between the trees is wide enough for large military vehicles to pass. That protecting the border here has never been a high priority becomes clear when, a bit farther on down the road, we see a very rusty sign saying “customs control zone.”



Left: view from a road in Verkhnyaya Orekhovka running perpendicular to the wide sand road seen in August 2014 satellite imagery

Right: a rusty “customs control zone” sign on the same road

Given the tracks captured in the satellite imagery, it seems obvious that many military vehicles have crossed the border into Ukraine through this field south of Severniy. We judge that the truck hauling the Buk missile launcher related to the downing of MH17 probably crossed the border here too, as the two alternatives – Pogranichnaya ulitsa near the river and Poleyaya ulitsa – seem to be less logical.

Pogranichnaya ulitsa near the river seems to be a viable option since it is one of the official roads crossing the border, but to reach Verkhnyaya Orekhovka, Donetsk and the M21 highway one would have to use a steep sand road with sharp turns, which is not easy and maybe even impossible for a truck with a heavy load.⁶⁹

The other option, Plevaya ulitsa, is hardly is an option at all given the narrow nature of the street, which is lined with trees. In addition, there are quite a few houses along this latter route, increasing the risk that a civilian would take a photograph or even film the military equipment crossing the border. This risk, of course, is much lower when crossing the border through a relatively remote field.



Left: winding road leading uphill from Pogranichnaya ulitsa

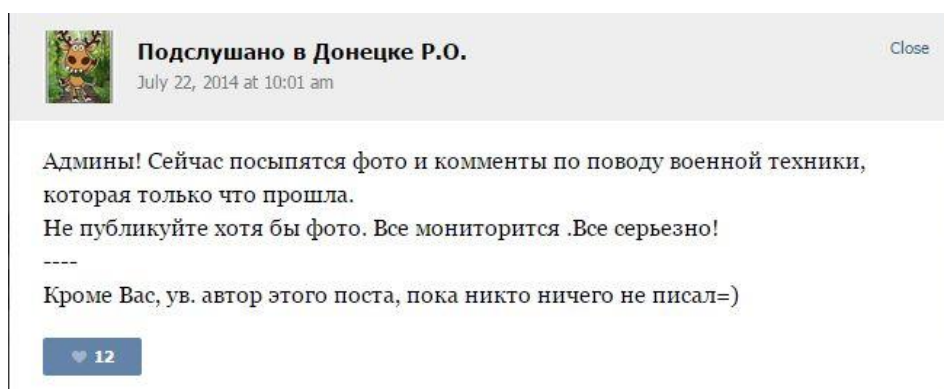
Right: the narrow Plevaya ulitsa with many trees

No videos or photographs of the truck that transported Buk 3x2 have surfaced of it traveling between Millerovo and Donetsk, Russia, so the exact route from the Millerovo airbase to Donetsk and on to Verkhnyaya Orekhovka is not known. However, many videos of military vehicles being transported via the M4 highway through the south of Kamensk-Shakhtinsky along with the photo album of Dmitry Z. (the driver of the truck that hauled Buk 232 in the 23-25 June Buk convoy), show that this is the usual route for transporting military equipment to Donetsk, Russia. A route that does not use the M4 highway would take about four times longer (via Krasnovka, Zelenovka and through Kamensk-Shakhtinsky), and since the route would have to go via Kamensk-Shakhtinsky, which has the first bridge that crosses the river (there are no bridges between the border of Ukraine and Russia and Kamensk-Shakhtinsky),⁷⁰ the route via M4 is both the fastest and most logical option.

⁶⁹ <http://www.google.nl/maps/@48.3619044,39.9405041,725m/data=!3m1!1e3?hl=en>

⁷⁰ <http://www.google.com/maps/@48.3478142,40.143134,23242m/data=!3m1!1e3>

An administrator of a VK community called "Overheard in Donetsk R.O." (R.O. stands for Rostov Oblast in Russia) wrote a post on 22 July about the transport of military equipment in Donetsk, Russia. In the post, the admin asks community members and other admins to not publish any pictures of military equipment that had just passed. Since this post was made just four days after the Buk missile launcher arrived in Verkhnyaya Orekhovka near Donetsk, Russia one cannot help but wonder if this military equipment was, in fact, the Buk missile launcher, although it does not seem very likely that the Buk would have remained there for four days before being transported farther into Russia because of the likelihood of being seen by civilians. In any case, the post makes clear that the transport of military equipment occurs in Donetsk, Russia and that people are encouraging others not to make videos and photographs of the transports public.



Post in Overheard in Donetsk R.O. warning people to not publish photographs of military equipment that had just passed

Conclusion

The Bellingcat investigation team has reached several conclusions:

- The 2nd Automobile Battalion of the 69th Separate Logistics Brigade (Unit 11385), headquartered in Novosmolinskiy (near Mulino), was involved in transporting military equipment to several areas along the Ukraine-Russia border.
- The 2nd Automobile Battalion of the 69th Separate Logistics Brigade, especially Subunit 2 (11385-2) located in Kalininets, was involved in transporting Buk systems to several areas along the Ukraine-Russia border, including the June and July 2014 Buk convoys.
- The 147th Automobile Battalion (Unit 83466), located in Moscow, was involved in transporting Buk missile launcher 232 (in the 23-25 June convoy) to Millerovo near the border with Ukraine and transporting other military vehicles to the border area near Donetsk, Russia.
- The 2nd Automobile Battalion (Unit 11385) and/or the 147th Automobile Battalion (Unit 83466) were/was involved in transporting the Buk related to the downing of MH17, Buk 3x2 (in the 23-25 June convoy).
- Dmitry Z, the driver of truck 6902 HH 50, which hauled Buk 232 in the 23-25 June convoy, did not transport Buk 3x2 to the border (he transported other vehicles to the border area during his last ride with his truck just before the end of his service). However, he may know who did, considering that driver was behind him in the convoy with Buk 3x2. Moreover, looking at the connections the drivers have on VK, it seems that the drivers of the Buk convoys may know each other.
- There are four possible drivers that could have transported Buk 3x2 to Millerovo in the 23-25 June convoy (and probably later to Donetsk, near the border of Ukraine, too):
 - 1) Vladimir P, standing next to trailer XP 4679 50 on 26 July 2014 (see Section 2)
 - 2) The driver that posted a picture of truck 4267 AH 50 on 16 October 2014 in his album (see Section 4)
 - 3) The driver that posted a picture of truck 4267 AH 50 on 28 July 2014 in his album (see Section 4)
 - 4) The driver that posted a picture of truck 4267 AH 50 on 12 December 2013 on Dmitry Z's VK profile wall (see Section 5)
- The 23-25 June Buk convoy went to the Millerovo military airbase, and from there the Buk missile launchers were moved to several different locations along the border. Buk 3x2 was transported via the M4 highway to Donetsk, Russia and subsequently crossed the border through a field south of Severniy during the night of 16 to 17 July. After the downing of MH17, the same Buk missile launcher crossed the border again at the same location in the early morning of 18 July 2014.

- The 19-21 July Buk convoy went to a military camp southwest of Kamensk-Shakhtinsky, and from there the Buk missile launchers were moved to several different locations along the border.

Acknowledgments

This report is the result of collaborative investigation by the Bellingcat MH17 investigation team using Slack.com

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