STUDENT HANDOUT

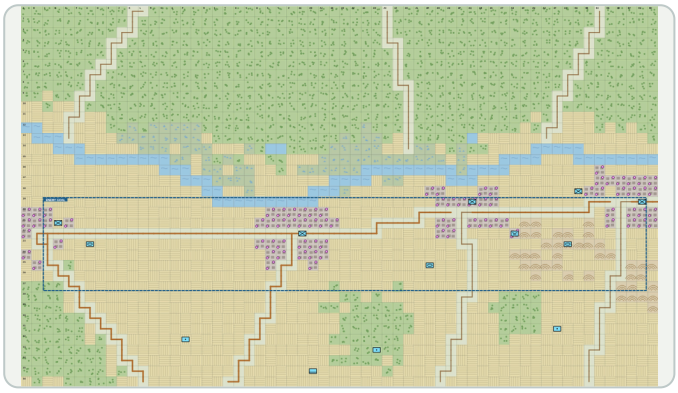
The Siverskyi Donets Crossings

Bilohorivka, Serebrianka and Dronivka, on the Siverskyi Donets, Luhansk and Donetsk Oblasts, Ukraine · 5 to 13 May 2022

Information as of September 2026



Scenario illustration · AI generated



Student map · own side only · Simulation situation map · reconstructed terrain and estimated deployments; not verified historical positions.

Learning objectives

- Compare observation and losses around the modeled river crossings with DFRLab's imagery analysis, identifying the crossing-construction and engineering details that this simulation does not reproduce.
- Describe how reconnaissance supplies contacts for automatic artillery engagement in the model, and distinguish its completed contact-to-kill timings from an independently verified historical detection sequence.
- Evaluate how finite reconnaissance flights and artillery ammunition affect the three modeled waves; explain why the compressed run is not a reconstruction of several days of battery relocation.

Run time and a good result

Default run clock: 6 minutes 0 seconds at 1×, excluding pauses, briefing and discussion. Time controls change elapsed play time.

Objective: Break the Russian crossings. Put at least 17 of the Russian units out of action over the three crossing attempts, and do not let them settle on the south bank between Dronivka and Bilohorivka. Use your reconnaissance drones to find the pontoon groups through the smoke and give your artillery targets.

The Siverskyi Donets Crossings: Break the Russian crossings. Put at least 17 of the Russian units out of action over the three crossing attempts, and do not let them settle on the south bank between Dronivka and Bilohorivka. Use your reconnaissance drones to find the pontoon groups through the smoke and give your artillery targets. Put at least 17 represented opposing units out of action; decoys do not count. The authored limit is 360 simulation seconds across 3

stages. Compare objective progress, time, losses, drone expenditure and recorded civilian harm with a second run. A strong classroom result also explains the source evidence and reconstruction estimates; it does not verify a historical casualty count.

Atrocity notice

The UN Commission found war crimes by Russian authorities, including killings, torture and sexual violence, and a small number of violations by Ukrainian forces. Its March 2023 findings are context, including for later scenarios.

These reports describe the wider conflict. They do not establish that every crime occurred in this modeled battle.

Studying or commanding a side does not endorse its conduct. Drone Front never lets players target civilians, hospitals, schools or places of worship. Civilian harm from simulated strikes is counted and shown in the debrief, including nonzero harm. Civilian massacres are never playable operations. Designated terrorist forces and Wagner remain computer controlled; Gaza war events remain excluded from play.

▼ Dated reports and findings

- 2023-03-16 · UN Commission of Inquiry: war crimes in Ukraine

Learn more: the laws of war

- ICRC: Geneva Conventions and commentaries
- ICRC: Customary IHL database
- UN: Genocide Convention (9 December 1948)
- UN: Rome Statute (17 July 1998), articles 6–8

Historical source notes

DFRLab geolocated photographs of the failed Russian pontoon crossing near Bilohorivka and compared them with satellite imagery of bridge remains. This supports the documented crossing's outcome, but does not independently establish the claimed smoke-to-detection sequence or each unit's role.

DFRLab notes reports of repeated crossing attempts but says it could not independently verify the claim of five attempts. Compare that reporting limit with the scenario's three authored phases; the model's sequence is not proof of a complete historical chronology.

ISW's 14 May 2022 assessment relayed a reported estimate of 485 casualties and damage to more than 80 pieces of equipment. It discussed command failures and criticism from pro-Russian channels. These are attributed estimates and analytical hypotheses, not an independently verified casualty census.

The fighting reached people who had stayed. On 7 May about 90 people were sheltering in the Bilohorivka school when it was bombed (Wikipedia; UN News). Russian forces took Bilohorivka after the fall of Lysychansk in July 2022, Ukraine retook it in September 2022, and Russian forces claimed it again in February 2025 while a Ukrainian brigade said it still held positions there (Wikipedia). By 2024 the village had no permanent residents left.

Civilian harm

About 90 people were sheltering in the school basement when it was bombed. Luhansk Oblast governor Serhiy Haidai said 60 were feared dead; two deaths were confirmed and at least 30 people were rescued (Wikipedia, citing the BBC and Reuters). UN Secretary General António Guterres said he was appalled by the attack.

President Volodymyr Zelenskyy said the basement sheltered the majority of the village's population; the BBC reported his statement that 60 people were killed.

The Conflict and Environment Observatory listed the Bilohorivka river crossing among its examples of environmental harm in Ukraine.

Evidence for learning objectives

DFRLab geolocated drone images of the failed crossing and compared them with May 12 satellite imagery. The precise detection-and-handoff sequence remains unverified in this audit.

DFRLab confirms the failed crossing scene but could not verify a reported five attempts. The scenario compresses the fighting into three teaching phases; those phases are not a verified count of historical attempts.

UN News describes the attack on a school where people sheltered and attributes casualty reporting to Ukrainian statements. UNICEF expressly stated uncertainty about child casualties.

Timings

For 60 minutes, brief for 10, run with a pause at each wave for 30 and review for 20; for 90 minutes, disable your side's drones and compare detected contacts and recorded artillery kills; for 180 minutes, assign the allowed Russian and Ukrainian perspectives to separate syndicates and compare objective, time, losses and civilian harm.

Session	Plan
45 minutes	Brief: 10 min; Run: 15 min; Collect: 5 min; Review: 15 min
60 minutes	Before questions: 5 min; Brief: 10 min; Run: 20 min; Collect: 5 min; Debrief and after questions: 15 min; Discussion: 5 min
90 minutes	Before questions: 5 min; Brief: 10 min; Run 1: with drones: 20 min; Run 2: without drones: 15 min; Collect: 5 min; Compare and discuss: 25 min; After questions: 10 min
180 minutes	Before questions: 10 min; Brief and staff roles: 15 min; Run 1: with drones: 25 min; Run 2: without drones: 20 min; Break: 10 min; Run 3: syndicates: 30 min; Collect: 10 min; Seminar replay and debrief: 40 min; After questions: 10 min; Close: 10 min

Staff roles

commander
Choose reconnaissance flights and available target and artillery orders across the three waves. Report progress toward putting 17 modeled enemy units out of action, and distinguish that objective from whether the enemy reaches the south-bank zone.

intelligence
Track detected vehicle columns and infantry near the modeled crossing areas, distinguishing confirmed contacts from inference about the next approach. Bridge construction itself is not simulated.

fires
Report the three batteries' automatic engagements and remaining shells, explain the high-value-only order, and flag strikes near modeled populated areas. No battery movement or selected-target firing command is available.

droneOps
Allocate the six quadcopters across the waves, compare time with and without reconnaissance coverage, and report remaining and returning aircraft; continuous coverage is a classroom aim, not a guaranteed outcome.

Opposing staff objective

Force the Siverskyi Donets. Bring your pontoon groups to the river at Dronivka, Bilohorivka and between Bilohorivka and Serebrianka, cross, and take a foothold on the south bank before the defenders can wear your force down.

Decision points

- At the first modeled wave, compare sending reconnaissance west with retaining flights for later contacts. Record what is observed; the artillery positions and ground movement are controlled by the model.
- At the second wave, compare reconnaissance over the river approach with observation of the vehicle column. Decide whether artillery should engage all detected unit types or high-value targets only; bridges and engineers are not separately targetable units.
- Before the last wave, compare remaining reconnaissance flights and artillery ammunition. Would changing the artillery's high-value-only order alter the run's observations or losses? Battery relocation is not an available command.

Before and after questions

1. **How did DFRLab verify the published footage of the failed May 2022 crossing?**

   A. Checked one eyewitness account without comparing the depicted landscape
   B. Geolocated drone images and crosschecked the scene against satellite imagery
   C. Used the ministry's caption as sufficient proof of the location
   D. Used equipment counts as sufficient proof of when footage originated

2. **In this crossing exercise, which combination creates concentrated exposure?**

   A. River width alone determines whether defenders can observe vehicles
   B. Crossing daylight alone determines the degree of vehicle exposure
   C. Bridge size alone determines whether aerial observation is effective
   D. Scheduled reinforcements arrive together near the modeled crossings, concentrating their exposure to defenders

3. **What information opportunity do successive phases create in this classroom crossing model?**

   A. Repeated attempts gave defenders time to observe patterns
   B. Changed arrival locations made previously observed contacts equally reliable
   C. Prior observations could substitute for checking the next phase
   D. Reduced bridging assets necessarily reduced uncertainty about arriving units

4. **What can the crossing imagery establish more securely than a precise personnel casualty total?**

   A. A personnel total can be calculated directly from damaged vehicles
   B. Intact nearby vehicles establish that their crews avoided any casualties
   C. Visible equipment damage without settling a precise personnel casualty total
   D. Unseen personnel losses can be excluded from the casualty estimate

5. **What did the UN account describe about the Bilohorivka school attacked in May 2022?**

   A. It was bombed while being used to support bridge construction
   B. It was bombed while civilians sheltered in its basement
   C. It was bombed after reported evacuation reduced the civilian presence
   D. It was bombed before residents moved into its basement shelter

Discussion

- Compare the after action review's time from spotting to engagement and from engagement to a recorded kill. Which entries can you relate to artillery engagements in the combat log, and why is this not a measurement of the first shell landing on a pontoon group?
- The model compresses the case into three waves. Compare that design with DFRLab's verified imagery and its limits on confirming reported attempts; why should the simulation's wave count not be cited as a historical count?
- UN News reported the Secretary-General's condemnation of an attack on a Bilohorivka school where people were sheltering. Which civilian risks does the model's populated-area rule represent, and which shelter, casualty and precaution details does it omit?
- DFRLab distinguishes geolocated imagery from attributed estimates of equipment losses. How should a staff officer present those estimates and their uncertainty without turning them into an independently verified personnel total?

Debrief rubric

Strong
Meets the objective or explains why it was not met; uses the published sources and run evidence, separates known facts from assumptions, compares both sides' losses and cost exchange, and evaluates precautions against civilian harm.

Adequate
Describes the objective and main decisions, identifies at least one source and model limitation, reports losses and harm, and gives a reasoned change for a second run.

Weak
Reports only victory or points, treats teaching settings as real performance, gives unsupported historical claims, or omits uncertainty and civilian harm.

Published readings

1. ISW: Russian Offensive Campaign Assessment, May 14 (14 May 2022)

2. Atlantic Council DFRLab: Russian War Report, drone footage confirms failed Russian military pontoon crossing (13 May 2022)

3. The Guardian: Ukraine repels Russia's attempt to cross Donbas river, and drives invaders away from Kharkiv | Ukraine

Complete source list

Wikipedia: Battle of the Siverskyi Donets
Wikipedia: 74th Separate Guards Motor Rifle Brigade
Wikipedia: 17th Heavy Mechanized Brigade
Wikipedia: Bilohorivka, Luhansk Oblast
Wikipedia: Dronivka
Wikipedia: Serebrianka, Donetsk Oblast
Wikipedia: Hryhorivka, Siversk urban hromada, Bakhmut Raion, Donetsk Oblast
Wikipedia: Serebryansky Forest
Wikipedia: Bilohorivka school bombing
Wikipedia: Luhansk Oblast campaign
ISW: Russian Offensive Campaign Assessment, May 14 (14 May 2022)
Atlantic Council DFRLab: Russian War Report, drone footage confirms failed Russian military pontoon crossing (13 May 2022)
The Guardian: Ukraine repels Russia's attempt to cross Donbas river, and drives invaders away from Kharkiv | Ukraine
The New York Times: A doomed river crossing shows the perils of entrapment (25 May 2022)
The New York Times: Growing evidence of a military disaster on the Donets pierces a pro Russian bubble (15 May 2022)
The Telegraph: A bridge too far for Russian invaders (12 May 2022)
Forbes: The Russians lost nearly an entire battalion trying to cross a river in eastern Ukraine (11 May 2022)
CNN: Siverskyi Donets, a Donbas river in eastern Ukraine is hindering both sides in the war (12 May 2022)
Ukrinform: Defeat near Bilohorivka, enemy lost almost 1,000 soldiers and 100 vehicles (16 May 2022, Ukrainian claim)
Militarnyi: In Bilohorivka, the invaders lost more than 70 units of equipment after forcing the river (Ukrainian claim)
US Army: Russian river crossing failure during the Battle of the Siverskyi Donets
CEOBS: Examples of environmental harm in Ukraine, Bilohorivka river crossing
UN News: Ukraine, UN chief condemns school attack; welcomes new evacuees from Mariupol (May 2022)
BBC News: Ukraine war, 60 people killed after bomb hits school, Zelensky says (8 May 2022)
NPR: More than 60 are feared dead in the bombing of a Ukrainian school (8 May 2022)