STUDENT HANDOUT

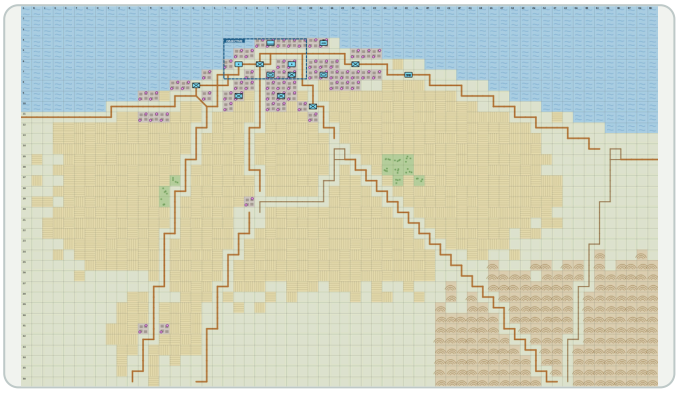
The Drone War over Tripoli

Tripoli and its southern approaches, Tripoli District, north west Libya · 4 April 2019 to 5 June 2020

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 the UN Panel's description of Turkey-supplied TB2s with BBC's investigated UAE-operated Wing Loong II case. Distinguish those attributed findings from the run's authored rosters and supplies; they are not a complete operator or aircraft inventory.
- Analyse the UN Panel's account of Turkish naval and ground air defence, intelligence support and reinforcement in early 2020. Separate that campaign assessment from this run's simplified drone, air-defence and jamming counters.
- Evaluate how investigators tied strikes in a crowded city to an aircraft type and an operator, and why the answer matters for accountability.

Run time and a good result

Default run clock: 8 minutes 0 seconds at 1×, excluding pauses, briefing and discussion. Time controls change elapsed play time.

Objective: Hold central Tripoli through all four waves. Keep GNA units in the city centre, use your TB2s to find and strike the LNA columns, guns and air defence before they reach the southern suburbs, and keep Mitiga airport working.

The Drone War over Tripoli: Hold central Tripoli through all four waves. Keep GNA units in the city centre, use your TB2s to find and strike the LNA columns, guns and air defence before they reach the southern suburbs, and keep Mitiga airport working. Prevent an unopposed enemy occupation of the marked zone lasting 8 continuous simulation seconds; retain a fighting force until the episode ends. The authored limit is 480 simulation seconds across 4 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 Libya Fact-Finding Mission found reasonable grounds to believe war crimes were committed in Libya since 2016. It also found crimes against humanity against migrants. These findings concern the wider conflict and detention system, not only the al Watiya or Tripoli operations.

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

- 2021-10-04 · UN Fact-Finding Mission: crimes against humanity and war crimes in Libya since 2016

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

Neither Libyan side built its own armed drones. Wikipedia says the UAE supplied and operated the Wing Loong IIs that flew for the LNA, from al Khadim air base, and Turkey supplied the TB2s that flew for the GNA. Drones let both sides strike far behind the front: the BBC found that a Wing Loong II killed 26 cadets at a military academy inside Tripoli. When Al Jazeera, quoting the UN envoy Ghassan Salamé, called Libya the largest drone war in the world, it was describing two foreign air forces fighting through local proxies.

Drones were lost in large numbers. Wikipedia says at least 23 TB2s were reported lost in Libya after the LNA offensive began in April 2019, and that by June 2020 six Wing Loong IIs had been reported shot down or lost, all LNA. Both sides replaced losses from abroad, so the supplier's willingness to keep sending drones mattered as much as any single strike.

The UN Panel describes foreign aircraft support and Turkish air-defence, intelligence and reinforcement contributions in early 2020. This campaign assessment does not establish complete elimination of LNA air defence, a single cause of territorial gains or an exact aircraft-loss and replacement ledger.

The war was fought in and around a city of more than a million people. The UN said a strike on the Tajoura migrant detention centre killed at least 53 people, Human Rights Watch documented civilians killed by a UAE drone strike near Tripoli, Wikipedia counts 458 civilian deaths by the end of June 2020, and the UN expressed concern over reports of mass graves found in Tarhuna after the LNA left.

Civilian harm

Wikipedia reports at least 53 people killed and 130 wounded. A joint UNSMIL and OHCHR report found that both bombs appear to have been guided bombs that no Libyan party had, that the strike was probably carried out by a state other than Libya under LNA command or in support of the LNA, and that it may have been illegal under international humanitarian law. The LNA denied responsibility.

Human Rights Watch found that a drone strike by the UAE on a factory near Tripoli killed 8 civilians.

BBC Africa Eye attributed the 4 January 2020 strike to a UAE-operated Wing Loong II firing a Blue Arrow 7 missile, reporting 26 unarmed cadets killed. The LNA denied responsibility; the UAE had previously denied military involvement and did not respond. The UN Panel separately reported 30 students killed; no combined confirmed total is inferred.

Wikipedia, citing the World Health Organization, records more than 2,280 dead by mid January 2020, among them 280 civilians, and 458 civilian deaths by the end of June 2020.

On 11 June 2020 the United Nations expressed concern over reports of eight mass graves found in Tarhuna. Wikipedia says explosive devices, landmines and mass graves of civilians were discovered in the town after the GNA took it on 5 June.

Evidence for learning objectives

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BBC attributed the academy strike to a UAE-operated Wing Loong II and reported 26 unarmed cadets killed; the UN Panel separately reported 30 students killed. Attribute each tally and party response rather than merging them into a confirmed total.

Timings

For 60 minutes run the briefing, one full run through the four waves and a short debrief on the drone exchange; for 90 minutes add a second run with a different target order and two discussion questions; for 180 minutes pause at each wave for the decision points, use all four discussion questions, and read the UN and BBC findings on the Tajoura and military academy strikes.

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
Set the pre-run posture and available standing orders, decide when to launch newly supplied drones, and report the modeled hold zone at each wave. Ground-unit positioning and movement are automatic.

intelligence
Track LNA columns on the roads from Gharyan and Tarhuna, report where Wagner units and Pantsir air defence appear, and warn when a Wing Loong II is overhead.

fires
Observe the guns' automatic engagements around the modeled airport and suburbs, recommend the artillery and rules-of-engagement standing orders, and flag civilian risk. Individual gun-target assignments are unavailable.

droneOps
Report every TB2 and Kargu-2 launch, loss and return, keep Mitiga airport in mind as the base, and say when air defence makes a target too costly.

Opposing staff objective

Take central Tripoli. Advance from Tripoli International Airport, Qasr bin Ghashir and Wadi al Rabie, use your Wing Loong IIs against GNA guns, troops and Mitiga airport, and drive the GNA out of the city centre before the last wave ends.

Decision points

- In the authored first stage, three TB2s are available. Compare launches near the modeled airport-road columns with launches near the guns, recording observation, losses and stocks.
- In this authored scenario stage, second wave, autumn 2019: a Pantsir now covers the airport and Wagner units join the attack. Do you risk your TB2s against the air defence, or keep them over your own front?
- In this authored scenario stage, third wave, January 2020: with more TB2s, a frigate offshore and jamming, do you go after the LNA guns and air defence, or the troops closing on the southern suburbs?

Before and after questions

1. **What external drone support do the UN Panel and BBC's investigation describe for the opposing Libyan forces?**

   A. Competing domestic manufacturers supplying most aircraft to the opposing forces
   B. Local force aircraft conducting most strikes without significant foreign support
   C. Foreign operators replacing local forces as the principal ground belligerents
   D. The cited investigations describe external drone support for opposing forces, including Turkish and UAE involvement

2. **In this modeled comparison, drones are lost but later waves add aircraft. Which constraint should be examined beyond one aircraft's performance?**

   A. Continued replacement support from external suppliers
   B. Exceptional performance from one individual operating crew
   C. Consistently favourable weather over the surrounding plain
   D. Additional runways within the contested urban perimeter

3. **Why were LNA forces around Tripoli International Airport exposed by spring 2020?**

   A. Transferred defences restored enough coverage to limit the airport's significance
   B. Redeployment reduced ground exposure while retaining the earlier defensive air coverage
   C. Loss of defensive cover and electronic interference increased exposure
   D. Reduced sortie rates established that remaining local defensive coverage was adequate

4. **The LNA denied responsibility and the UAE had denied military involvement. What did the BBC investigation conclude?**

   A. A GNA aircraft mistakenly attacked a friendly academy
   B. A UAE-operated Wing Loong reportedly struck the academy
   C. An industrial accident caused deaths without an aerial strike
   D. A Turkish TB2 reportedly attacked the military academy

5. **What did the joint UNSMIL and OHCHR report find about the strike on the Tajoura migrant detention centre?**

   A. It attributed the strike tentatively and raised possible unlawfulness
   B. It treated weapon origin as sufficient proof of the operating force
   C. It treated reported military use as sufficient evidence of lawful precautions
   D. It treated announced relocation as evidence that civilians had already departed

Discussion

- The UN Panel and BBC investigation describe external support in specific cases. What would dependence on foreign suppliers and operators mean for evidentiary accountability? Distinguish these findings from the envoy's qualified description of the drone-war scale and avoid treating a superlative as a measured inventory.
- In this authored run, later waves add drones after earlier losses. Compare the delivery schedule, recorded losses and unused stocks. What additional evidence would establish the real replacement rate or the decisions of an outside supplier?
- BBC investigated the academy strike through weapons and air-base evidence; UNSMIL/OHCHR assessed the Tajoura strike separately. How do the conclusions, attribution limits and party responses differ?
- Read the UN Panel's paragraph 63 account of Kargu-2 and its reported capability to attack without a continuing data connection. Which control and accountability questions follow? The description does not independently verify a specific autonomous killing.

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. Al Jazeera: 'Largest drone war in the world', how airpower saved Tripoli (28 May 2020)
2. Al Jazeera: UAE drone strike on factory near Tripoli killed 8 civilians, HRW (29 April 2020)
3. Al Jazeera: Russian groups' 1,200 mercenaries fighting in Libya, UN report (7 May 2020)

Complete source list

Wikipedia: Western Libya campaign (2019 to 2020)
Wikipedia: CAIG Wing Loong II
Wikipedia: Baykar Bayraktar TB2
Wikipedia: Wagner Group activities in Libya
Wikipedia: Turkish intervention in Libya (2020–present)
Wikipedia: 2019 Tajoura migrant center airstrike
Wikipedia: Tripoli military school airstrike
Wikipedia: STM Kargu
Wikipedia: Tripoli International Airport
Wikipedia: Mitiga International Airport
Wikipedia: Tarhuna
Wikipedia: Ain Zara
Wikipedia: Qasr Bin Ghashir
Wikipedia: Tajura
Al Jazeera: 'Largest drone war in the world', how airpower saved Tripoli (28 May 2020)
Al Jazeera: UAE drone strike on factory near Tripoli killed 8 civilians, HRW (29 April 2020)
Al Jazeera: Russian groups' 1,200 mercenaries fighting in Libya, UN report (7 May 2020)
Al Jazeera: Turkey's parliament approves military deployment to Libya (2 January 2020)
Al Jazeera: Libya's GNA retakes Tripoli airport from Haftar's forces (3 June 2020)
Al Jazeera: Libya's GNA says it regained full control of the capital, Tripoli (4 June 2020)
UNSMIL: UN report urges accountability for Libya airstrike deaths (January 2020)
UNSMIL and OHCHR: Report on the airstrikes on the Daman building complex, including the Tajoura Detention Centre (January 2020)
OHCHR: Attack on Libyan migrant detention centre, statement by UN High Commissioner for Human Rights Michelle Bachelet (July 2019)

Middle East Monitor: UAE killed 26 unarmed cadets in Libya, BBC says (28 August 2020)
The New Arab: UAE 'involved in Libya attack that killed 26 cadets' (28 August 2020)
Bloomberg: ‘Putin’s Chef’ Deploys Mercenaries to Libya in Latest Adventure
New America: Foreign boots on the ground, the 2019 battle for Tripoli and beyond
War on the Rocks: Drones, deniability, and disinformation, warfare in Libya and the new international disorder (March 2020)
Drone Wars UK: Libyan war sees record number of drones brought down to earth (1 July 2020)
ICRC Casebook: Libya, the use of lethal autonomous weapon systems (quotes UN Panel of Experts report S/2021/229)
Human Rights Watch: World Report 2020, Libya
UN Panel of Experts on Libya: Final report S/2021/229 (2021, PDF)
BBC, reproduced by MyJoy: UAE implicated in lethal drone strike in Libya (28 August 2020)