

WELCOME

VIRTUAL MEETING WILL BEGIN AT

11:30 AM Central

**Society of American Military Engineers
Omaha Post
July 14th 2026 Meeting**

Omaha Post Meeting

Society of American Military Engineers
Omaha Post
July 14th, 2026 Meeting

Meeting Agenda

- Pledge of Allegiance
 - New Member/Guest Introductions
 - Invocation
 - Lunch
 - Announcements
 - Award Presentations
 - Induction of 2026-2027 Omaha Post Board Members
 - Presentation – Jay Hamann, CAPT, USAF
 - Q&A
 - SAME Omaha Post Awards
 - Split Kitty Drawing
 - Closing Remarks
-

Pledge of Allegiance



I pledge allegiance to the Flag of the United States of America, and to the Republic for which it stands, one Nation under God, indivisible, with liberty and justice for all.

Introductions

Introductions

- Welcome Student Chapter Members
- Welcome New SAME Members
- Introduction of Guests

Invocation

Please join us in the invocation before we dismiss for lunch

Lunch

Dismiss by table

Announcements

- **USACE Omaha District announces design/construction solicitation for SAOC Bed-Down at Offutt AFB**
 - ▶ Progressive Design Build
 - ▶ Notice is for feedback only! Official solicitation yet to be published
 - ▶ July 15th Industry Day – 10:00am CT
 - ▶ [Register for Industry Day Invite](#)
 - ▶ [More information](#)
 - ▶ Contact Scott.Dwyer@usace.army.mil

Announcements

- **SMPS Nebraska – Proposal Power-up Workshop: InDesign Skills from Starter to Smarter**
 - ▶ Join SMPS Nebraska for a hands-on Adobe InDesign workshop built specifically for AEC marketers looking to improve proposal efficiency, streamline workflows, and create more polished deliverables.
 - ▶ August 27, 2026 – 8:00 am to 4:00 pm CST
 - ▶ [Info and registration](#)

Announcements

■ **SAVE THE DATE!**

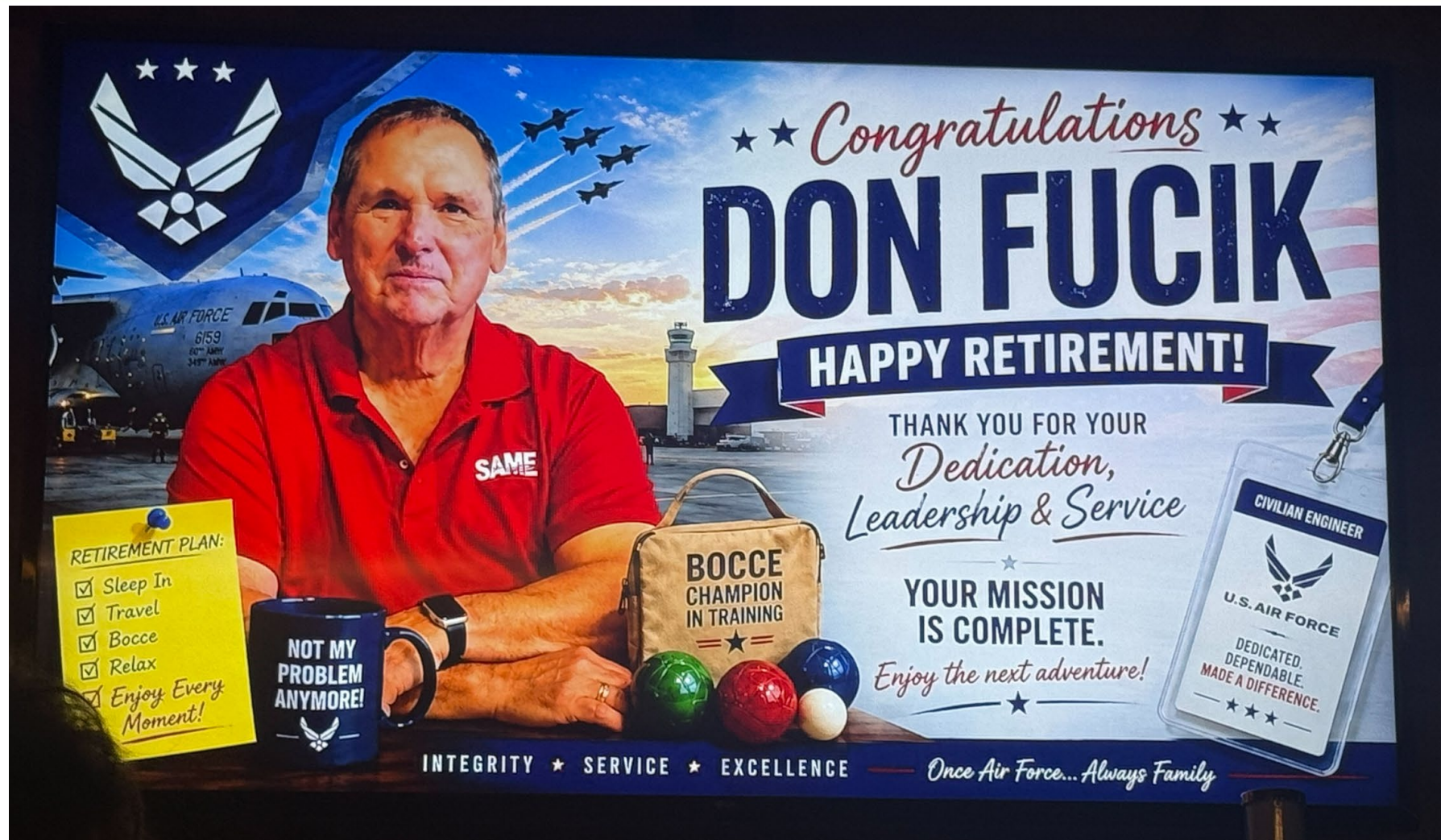
- ▶ Newcomers Orientation Program – July 16, Omaha Federal Bldg
- ▶ SAME Omaha Post Virtual Matchmaking Event
 - meet with potential partners and government representatives.
 - October 15, 2026
- ▶ We Survived the Fiscal Year
 - October 8, 2026
- ▶ Annual Scotch Tasting
 - December 8, 2026

Announcements

■ 2026 SAME Monthly Post Meeting Forecast

- ▶ August 11. Field Club of Omaha. Crossroads Development
- ▶ September 8. Field Club of Omaha. PFAS Soil Remediation Strategy – Rapid Leaching Technology (RLT) & applicability to MILCON
- ▶ October 13. Field Club of Omaha. Secure Construction (ICD 705, SCIFs)
- ▶ Register here: <https://www.same.org/omaha/events/>
- ▶ POC: Ted Kocher tkocher@schemmer.com

Congrats, Don!



Post Awards

- Student Mentor Award
- Rising Star
- Student Chapter Rising Star
- Public Sector Partnering
- Post President's Award
- RVP Medal

2026-2027 Omaha Post BOD

President:	Colonel Mark Russel	
Past President:	Colonel Robert Newbauer	
Secretary:	Chris Artz	
Treasurer:	Brian Schuele	
VP of Service Members and Veterans:		Aaron Wilt
VP of Industry Government Engagement:		Bobbi Jo Lang
VP of Resilience:		Don Fucik
VP for Professional Development and Personal Growth:		Kandi Srb
VP for Leadership and Mentoring:		Tom Svoboda
Director for Young Members:		Devin Mueller
Director for Student Chapters:		Matt Coan
Co-Directors for Student Mentoring Program:		Bill Glismann & Anne Peterson
Director for Communications:		Jill Zehr
Director for Awards and Recognition:		Laurie Smithers
Director for Fellows:		Natasha Gromak

Feature Presentation

Modern Drone Applications

Jay Hamann

CAPT, USAF

MODERN DRONE APPLICATIONS

BY CAPT JAY HAMANN

OVERVIEW

- DRONES: THE BROADER OVERVIEW
- DRONE SWARMS
- WORLDWIDE USAGE & EMPLOYMENT TACTICS
- COUNTERMEASURES
- LOYAL WINGMAN / COLLABORATIVE COMBAT AIRCRAFT (CCA)

DRONES: A BROADER OVERVIEW

ISR (INTELLIGENCE, SURVEILLANCE, RECONNAISSANCE)

- A DRONE QUALIFIES AS ISR IF ITS PRIMARY ROLE IS COLLECTING DATA, NOT ENGAGING TARGETS. THESE DRONES ARE DESIGNED TO OBSERVE, DETECT, TRACK, AND REPORT.
- INTERCEPTION OF COMMUNICATIONS OR RADAR EMISSIONS
- LASER DESIGNATION FOR PRECISION-GUIDED MUNITIONS
- FLYING INTO ENEMY TERRITORY OR CONTESTED ZONES TO MAP TERRAIN, IDENTIFY ENEMY ASSETS, OR CONFIRM ACTIVITY



DRONES: A BROADER OVERVIEW

One-Way Attack Drones / Loitering Munitions

- Unlike traditional UAVs, these are designed to crash into and destroy targets, meaning they don't return. They "loiter" in the air, searching for targets, and strike with precision when one is identified.
- Find, fix, and finish a target autonomously or via remote control
- Operated manually, semi-autonomously, or fully autonomously
- Small radar/heat signature makes detection and interception difficult



A pilot of the "Sharp Kartuzia" division of FPV drones preparing a drone for a combat flight in the Kharkiv region, Ukraine. Kostiantyn Liberov/Libkos/Getty Images

Multi-role Armed UAVs

- These drones merge ISR and strike functions with enhanced survivability
- Conduct precision air-strikes
- Survive cluttered and hostile terrain

ONE WAY ATTACK DRONES/LOITERING MUNITIONS

Targeting method

- Human-in-the-loop: Operator selects and confirms target
- Autonomous/Pre-programmed: GPS-guided with preloaded coordinates

Chinese Ch-901



Short-Range Tactical Loitering Munitions

- Used by infantry/special forces for short-range, precision strikes
- Use Case: Anti-personnel, light armor, low-signature strikes
- Range: 5–15 km
- Flight Time: ~10–30 min
- Payload: ~0.5–1.5 kg (anti-personnel, light vehicles)

Medium-Range Tactical Loitering Munitions

- Designed for unit-level precision strikes at greater standoff
- Use Case: Anti-armor, SEAD, artillery suppression
- Range: 40–100+ km
- Flight Time: 30–60+ min
- Payload: ~3–20 kg



Iranian
Shahed-136

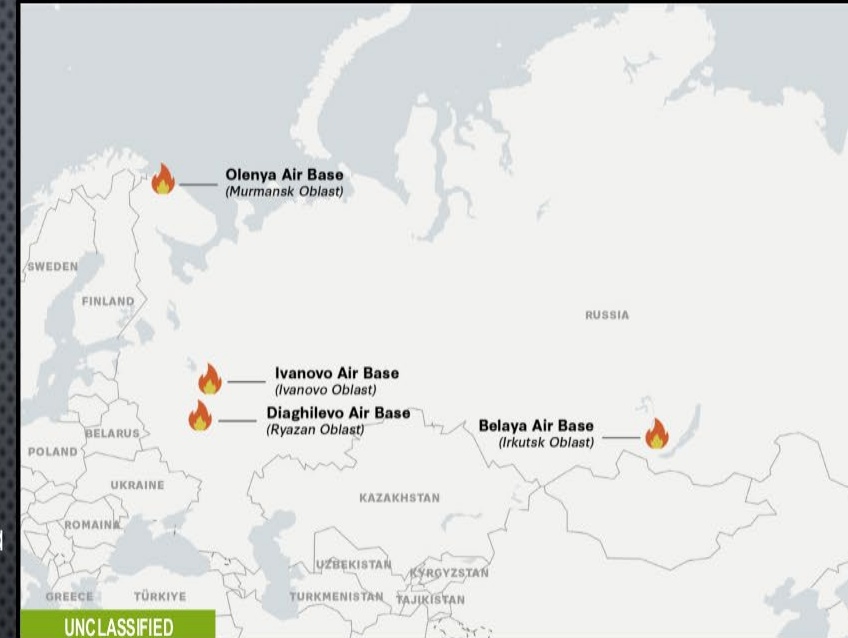
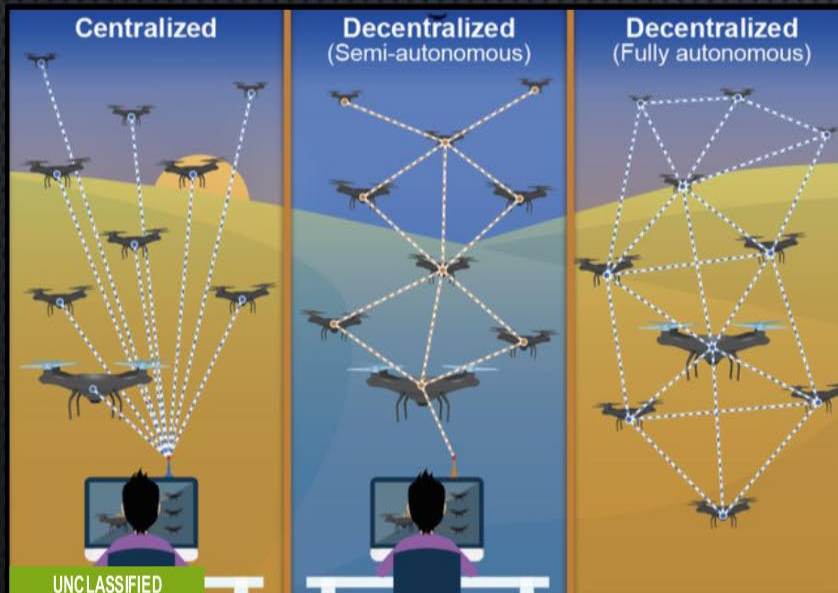
Strategic/Long-Range Loitering Munitions

- Employed for infrastructure strikes, strategic depth, and area denial
- Use Case: Deep strike, infrastructure attacks, swarm tactics
- Range: 150–2,000 km
- Flight Time: Up to several hours
- Payload: 20–50+ kg

Drone Swarm

A coordinated group of UAVs operating semi-autonomously or autonomously to achieve a common mission objective — often overwhelming enemy defenses through mass and simultaneity.

- Core Technologies
 - Autonomous Navigation: GPS, sensors enable obstacle avoidance and pathfinding
 - AI & Machine Learning: target recognition, decision-making and self-organization
 - Mesh Networking: Drones communicate and share data in real time



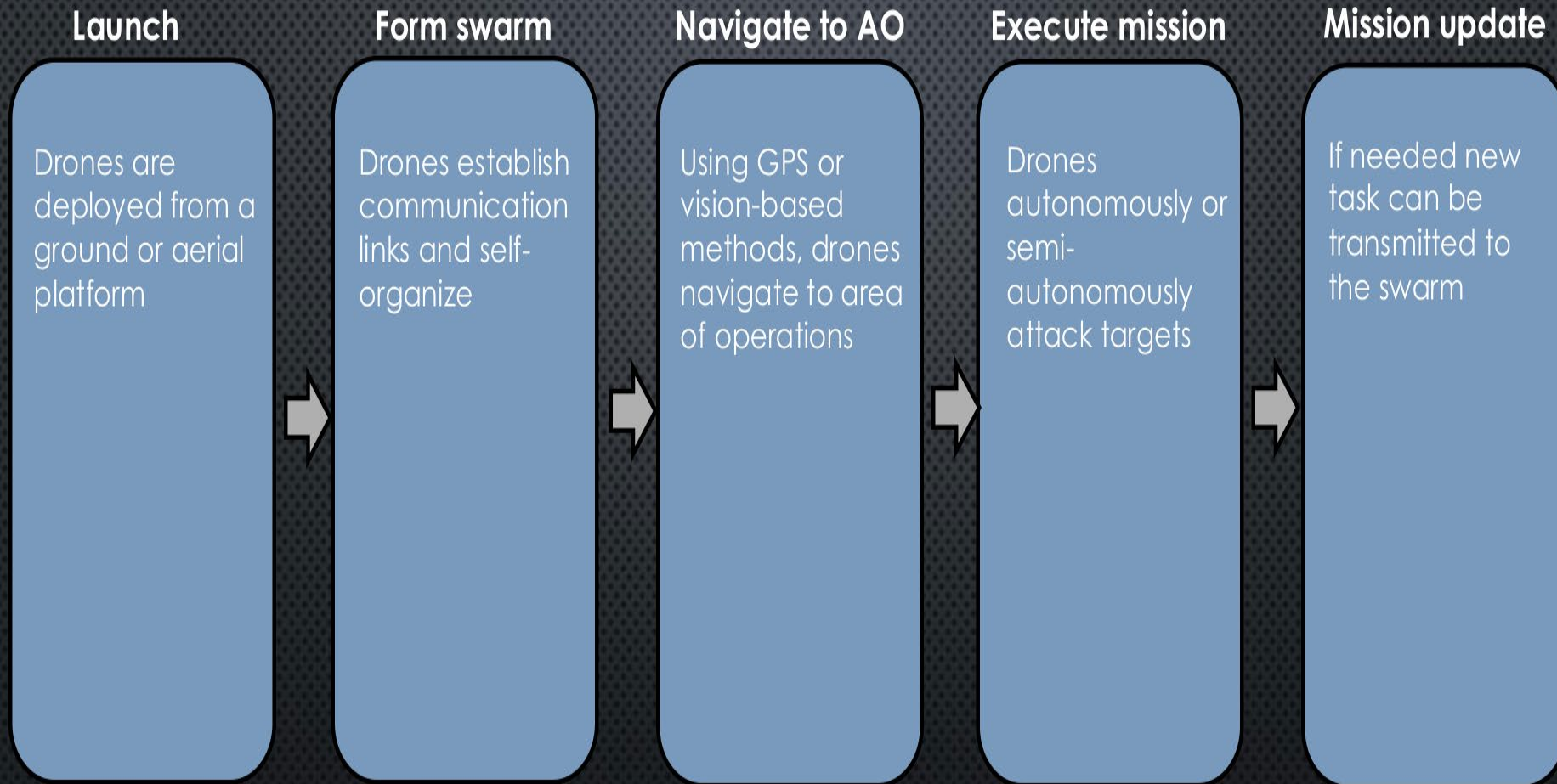
Ukraine's Operation Spider's Web

A Large scale coordinated attack by Ukraine, Involving 117 FPV drones in a coordinated attack against five Russian airbases across vast distances—from Murmansk in the Arctic to Irkutsk in Siberia (over 4,000 km from Ukraine)

- hit 41 strategic bombers, including Tu-95s, Tu-22Ms, and A-50 AWACS
- Drones smuggled across the border, assembled in Chelyabinsk, and hidden in wooden crates on trucks
- Used low-cost (~\$4,000 per drone) FPV drones



DRONE LIFE CYCLE



EMPLOYMENT TACTICS



The Cartel Jalisco Nueva Generacion Drone Operators

The CJNG has a specialized unit called the "DRONE OPERATORS," a military-style team that wears identifying patches and specializes in drone warfare. They showcase their capabilities on social media with videos of homemade bomb drops used to intimidate rivals.

- preference for using grenades and improvised explosive devices
- Mexican cartels have sought expertise from former Colombian military personnel to enhance and professionalize the adaptation of explosives to drones. In September 2024, Elkin Pérez Loaiza, alias "El Tigre," a former Colombian soldier, was reported to be training the criminal group "Los Sierra" in the manufacture of improvised explosives.



drone video circulating on social networks showing the Cartel de Sinaloa (CDS) attacking the Cartel Jalisco Nueva Generacion (CJNG) with explosive-laden drones in Teocaltiche, Jalisco

Training

- Basic Flight Training, operating commercial quadcopters (like DJI drones), FPVs, and modified racing drones often in rural or urban environments.
- Bomb Deployment Practice, training to release homemade explosives, grenades, pipe bombs) using servo mechanisms or manual triggers. Includes accuracy drills over mock targets (vehicles, bunkers, rival positions).

EMPLOYMENT TACTICS



Modified
QAV250
Munition:
OG-7v

Modified commercial attack drones

- Low cost and widely available
- Easy to modify for surveillance, bombing, or kamikaze missions
- Small and quiet, making them hard to detect
- Precise targeting via GPS or FPV control
- Highly effective in asymmetric warfare

Employment tactics

- Surveillance and Target: Cartels initially use Drones for reconnaissance, identifying rival positions or security force deployments. Once HVTs or weak spots are identified, modified commercial drones attack.
- Force Multiplication: The cartels have displayed the used of Kamikaze drones when conduction boots on ground assaults, usually sending in drones with C-4 attached to the intended targets to weaken the initial defense before on ground forces begin their assaults.
- Hit and Run: Cartels conduct harassing attacks on rival or security positions, in which a small swarm or singular drone attacks with no further escalation.
- Diversion or Multi-Frontal Engagements: Using drones as a distractions or simultaneous attacks to draw forces away from ground assaults or drug trafficking routes.

WORLDWIDE USAGE

Russian air force emblem



Russian drone personnel

Russia doesn't always brand its drone forces under a single "named" unit like some Western militaries do, but the 337th is the most referenced formal UAV regiment. For tactical drone warfare (like FPV use), smaller units and contractors such as Russia's ZALA Aero Group (a Kalashnikov subsidiary) works closely with the military to field Lancet and KUB-BLA loitering drones

Ukraine's (USF) Unmanned Systems Forces

Ukraine established this military branch in June 2024, the first country to do so. The USF specializes in drone warfare and the use of unmanned systems on land, sea, and air.

Ukraine's USF emblem



Training (Russia)

Russian frontline drone schools near Donbas and Luhansk quickly train operators in FPV flight, they use live-fire drills to prepare pilots in under a week for kamikaze drone missions on the battlefield. The schools

- Phase 1: Theory & Familiarization
 - Basic aerodynamics, GPS navigation, and frequencies
- Phase 2: FPV Flight Simulation
 - Pilots use FPV goggles and controllers on simulators
 - Emphasis on low-altitude, terrain-hugging flight paths to avoid detection
- Phase 3: Payload Integration & Safety
 - Fuse types, safety protocols, and remote arming procedures
- Phase 4: Live-Fire & Strike Drills
 - Pilots practice precision targeting on mock vehicles or trench systems

Training (Ukraine)

- Civilian-to-Combat Pipeline
 - Volunteer groups and NGOs (like Aerorozvidka or "Army of Drones") offer basic and advanced courses
- Modular & Scalable Courses
 - Training often lasts 5-14 days, including simulator and goggle training Live practice flights Bomb drop & kamikaze tactics

WORLDWIDE USAGE

Russian Systems

- **Geran-2 (Shahed-136 derivative)** – Long-range one-way attack drone used against infrastructure.
- **Lancet-3** – Precision loitering munition for artillery, air defense, and armored vehicles.
- **Orlan-10** – Tactical ISR drone for artillery spotting and electronic warfare.
- **Fiber-optic FPV drones** – Resistant to radio-frequency jamming and increasingly common on the battlefield. Russia has also expanded dedicated unmanned forces and domestic drone production.



Russian Lancelot - 3

WORLDWIDE USAGE

Chinese Drone Program

- **Wing Loong II** – Armed MALE UAV comparable to the MQ-9 class.
- **CH-4 Rainbow** – ISR and precision strike platform.
- **CH-5 Rainbow** – Long-endurance surveillance and strike UAV.
- **ASN-301** – Anti-radiation loitering munition.
- **FH-97A** – Loyal Wingman concept with AI-enabled teaming.



WORLDWIDE USAGE

IRANIAN DRONE PROGRAM

- **SHAHED-136** – LONG-RANGE LOITERING MUNITION WIDELY EXPORTED.
- **SHAHED-131** – SMALLER, LOWER-COST ATTACK DRONE.
- **MOHAJER-6** – ISR AND PRECISION STRIKE UAV.
- **ABABIL SERIES** – TACTICAL RECONNAISSANCE AND ATTACK UAVs.
- **HADID-110** – NEWER HIGH-SPEED JET-POWERED ONE-WAY ATTACK DRONE.

IRANIAN DRONE SHAHED 136

A long-range suicide drone for hitting fixed targets

Utilized by the Russians in Ukraine, is difficult to detect, flies low and descends to one hundred meters before hitting its target.



Manufacturer: HESA (Iran)
Launched: 2021
Warhead: 36 kg explosive charge
Range: 2,500 km
Maximum speed: 185 km/h
Weight: 200 kg
Length: 3.5 m
Wingspan: 2.5 m

Sources: US army, Army Recognition and Military Aviation

SUAS COUNTERMEASURES

COUNTER-SUAS ENGAGEMENT METHODS

STEP 1: DETECTION



Identify and track enemy SUAS using multi-sensor systems.



STEP 2: ELECTRONIC WARFARE (EW)



Disrupt or seize control of SUAS via non-kinetic means.

UNCLASSIFIED

Detection

Identify and track enemy SUAS using multi-sensor systems.

- Radar: Short-range 3D radars detect low-RCS drones at low altitudes.
- EO/IR: Visual + thermal cameras verify drone type and behavior.
- RF Scanning: Detects drone C2 links in 2.4/5.8 GHz bands.
- Acoustic Sensors: Pinpoint drones via unique rotor signatures.
- Sensor Fusion: AI integrates inputs to classify threats and reduce false alarms.

Electronic Warfare (EW)

Disrupt or seize control of SUAS via non-kinetic means.

- RF Jamming: Cuts pilot-drone comms (disruption).
- GNSS Spoofing: Feeds false GPS to confuse or reroute drone.
- Protocol Exploitation: Hijacks control by mimicking original signal.
- Platforms: Deployed via handheld units, vehicles, or fixed sites.
- Precision Targeting: Directional antennas limit collateral effects.



UNCLASSIFIED

Oshkosh L-AT
with
RF/Counter-
UAS suite

SUAS COUNTERMEASURES



Directed Energy / Hard Kill Systems

Provide last-resort or layered defense in complex environments.

- Portable lasers: Burn through drone components (rotors, optics, sensors).
- Net guns / air cannons: Non-lethal but effective in urban or sensitive locations.
- Experimental weapons: High-power microwaves or compact electromagnetic pulse devices.

Kinetic Engagement

Physically destroy or neutralize the drone.

- Small arms & shotguns: Used by ground units, especially with net rounds or buckshot.
- FPV drones: Manually piloted or autonomous interceptors equipped with explosives or shaped charges.
- SMASH 2000L: Once a drone is locked in, the system controls the trigger and only fires when a hit is guaranteed.

Marines to field new smart scope to help shoot down small drones



A Marine with the SMASH 2000L fire control system attached to his weapon.

UNCLASSIFIED

LOYAL WINGMAN

PURPOSE

- INCREASE COMBAT MASS WITHOUT ADDITIONAL PILOTS.
- EXTEND THE RANGE AND SURVIVABILITY OF MANNED AIRCRAFT.
- REDUCE RISK BY SENDING DRONES INTO THE MOST DANGEROUS ENVIRONMENTS.
- PROVIDE COMMANDERS WITH GREATER FLEXIBILITY ACROSS THE BATTLESPACE.



LOYAL WINGMAN

TYPICAL MISSIONS

- A LOYAL WINGMAN DRONE CAN PERFORM A VARIETY OF ROLES, INCLUDING:
- **INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (ISR)** TO DETECT AND TRACK THREATS.
- **ELECTRONIC WARFARE (EW)** BY JAMMING ENEMY RADARS AND COMMUNICATIONS.
- **DECOY OPERATIONS** TO ATTRACT ENEMY AIR DEFENSES AND MISSILES.
- **STRIKE MISSIONS** USING PRECISION-GUIDED WEAPONS.
- **COMMUNICATIONS RELAY** TO EXTEND NETWORK CONNECTIVITY.
- **AIRBORNE SENSING** TO IMPROVE SITUATIONAL AWARENESS FOR THE ENTIRE FORMATION.

OPERATIONAL CONCEPT

- A CREWED AIRCRAFT (E.G., FIGHTER, BOMBER, OR ISR PLATFORM) LAUNCHES WITH ONE OR MORE AUTONOMOUS DRONES.
- THE AIRCREW ASSIGNS MISSION OBJECTIVES RATHER THAN MANUALLY FLYING THE DRONES.
- ARTIFICIAL INTELLIGENCE ENABLES THE DRONES TO NAVIGATE, AVOID THREATS, AND COORDINATE WITH EACH OTHER WHILE REMAINING UNDER HUMAN SUPERVISION.
- THE DRONES SHARE SENSOR DATA WITH THE CREWED AIRCRAFT, CREATING A COMMON OPERATIONAL PICTURE.
- THE DRONES CAN BE REPOSITIONED OR TASKED DYNAMICALLY AS THE MISSION EVOLVES.

CONCLUSION

- DRONES: THE BROADER OVERVIEW
- DRONE SWARMS
- WORLDWIDE USAGE & EMPLOYMENT TACTICS
- COUNTERMEASURES
- LOYAL WINGMAN / COLLABORATIVE COMBAT AIRCRAFT (CCA)

Omaha Post Awards

SAME Omaha Post Awards

Meeting Close

- Split Kitty Drawing
- PDHs available from the Omaha Post Website
 - ▶ <https://www.same.org/omaha/resources/>