



Air Land Sea Space (ALSSA) Center Newsletter

Apr-Jun 2026



*Since 1975, multi-Service tactics, techniques,
and procedures (MTTP) for the warfighter*

Hot off the Press!

<https://www.alssa.mil/mttps>

[MTTP Catalog](#) is now available.

[Strike Coordination and Reconnaissance](#) is now available.

[Tactical Convoy Operations](#) signature draft is available.

[Tactical Radios](#) signature draft is available.

[Expeditionary Forensics](#) signature draft is available.

ALSSA Joint Working Groups

<https://www.alssa.mil/jwgs/>

01 July

[Fighter Integration \(FI\)](#) JWG 2

Virtual

ALSSA Outreach and Engagements

ALSSA is not the lead POC, but is attending

12 Jul-18 Jul **Rim of the Pacific (RIMPAC)**

12 Aug-25 Aug **Red Flag Alaska**

24 Aug-04 Sep **Bold Quest**

*The following is a professional opinion article from the
Air Land Sea Space (ALSSA) Center.*

“ALSSA STUDY PAVES THE WAY FOR SUAS INTEGRATION IN JOINT DOCTRINE”

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The Air Land Sea Space Application (ALSSA) Center will complete its “Small Unmanned Aircraft Systems (sUAS) Employment Study,” a comprehensive review of the rapidly evolving role of tactical drones on the modern battlefield. The study examines how the military Services are employing group 1-3 sUAS and identifies key challenges to ensuring seamless interoperability in a joint environment. The catalyst for this study is in large part due to the widespread and effective use of sUAS by Ukrainian forces and Executive Order 14307, *Unleashing American Drone Dominance*, June 6, 2025.

MTTP Hard Copy Ordering Information:

<https://www.alssa.mil/mttps/order/>

The conflict in Ukraine shattered long-held Western assumptions about air superiority, forcing the United States (US) and North Atlantic Treaty Organization (NATO) to rapidly overhaul their doctrine to prioritize local tactical airspace control and “drone dominance.” The war has demonstrated that cheap, mass-produced sUAS—often tightly fused with real-time artillery fires—can neutralize multimillion-dollar legacy platforms, while persistent aerial surveillance makes battlefield concealment nearly impossible without strict physical and electromagnetic signature management. In response, US and NATO forces are actively updating capstone operational manuals and developing new tactics amongst units who are rapidly fielding, testing, and employing sUAS. These grass-roots level initiatives are integrating counter sUAS systems and needs, developing modular and agile command and control software, and shifting the mind-set from a reliance on a few “exquisite” systems to massing cheap and proliferated systems.

The ALSSA study highlights that while the Services are quickly developing and fielding sUAS to enhance lethality and force protection, this rapid progress has created several interoperability gaps. In response to these findings, ALSSA is integrating new sUAS tactics, techniques, and procedures (TTP) directly into all relevant multi-Service publications, beginning with the February 2027 edition of **Joint Application of Firepower (JFIRE)**, to provide warfighters with standardized guidance more rapidly.



A US Army Soldier operates a Short Range Reconnaissance (SRR) unmanned aircraft system during training at an undisclosed location, on August 20, 2025. (Photo by SFC Matthew Ryan, USA)

Lacking Common Terminology

The Services currently use different definitions and classifications for sUAS, loitering munitions, and

one-way attack systems, which can lead to friction during joint planning and execution. The core problem is that the different branches of the military (Services) lack a standardized language to define and categorize sUAS. This creates confusion and friction when they operate together.

The study highlights two main areas of concern. First, the Services do not agree on which specific categories of unmanned aircraft qualify as “small.” The study points out that while all Services use the Group 1-5 categorization from Joint Publication 3-30, they lump different groups into the term “small.” The JFIRE instead uses the term “smaller UAS,” in alignment with recent developments of a joint doctrine note, and consider groups 1, 2, and some group 3 UAS as smaller UAS.

Second, there is no clear, joint distinction between a sUAS used for surveillance and one that is a weapon. The document notes that terms like “loitering munition,” “one-way attack (OWA),” and “first-person view” are used inconsistently. Currently, sUAS includes systems generally designed to return for repeated use and those designed to be attritable. Non-attritable systems conduct resupply, provide communications relay, provide reconnaissance or surveillance, and can employ ordnance. A single modular sUAS could be used for intelligence gathering on one mission and then armed for a strike on the next, blurring the doctrinal lines between an aircraft and a munition. This ambiguity impacts doctrinal development of standard TTP and rules of engagement.

In essence, without a common lexicon, joint forces face significant hurdles in planning and executing coordinated sUAS operations, from airspace control to strike approvals. The study concludes that establishing a shared language is a critical first step toward seamless integration.

Methods for Airspace Integration

With the proliferation of sUAS, especially at lower altitudes, there is a critical need for standardized procedures to deconflict airspace with manned aircraft, other drones, and air defense systems.

Techniques from JP 3-52 (Joint Airspace Control) emphasize procedural control measures published in the airspace control order. The primary method is to establish specific, designated volumes of airspace exclusively for unmanned aircraft

(UA) operations typically through a UA restricted operating zone (ROZ). However, the widely proliferating UA require more advanced techniques to truly integrate systems amongst one another.

The MTTP for **Airspace Control** expands on these foundational methods, and units currently operating sUAS are continually experimenting with and developing new TTP.

1. Operating Below the Coordination Level (CL): The primary deconfliction plan is to have sUAS that lack identification, friend or foe or Link-16 capabilities operate below the coordination level. This keeps them segregated from most manned fixed-wing aircraft, which typically fly above the CL. However, this does not solve the issue of rotary-wing deconfliction below the CL. This is an issue that the US Army and Marines are rapidly trying to solve.
2. Procedural Control: Since sUAS cannot “see and avoid,” procedural control (relying on published routes, zones, and altitudes) is critical for deconfliction and safety.
3. Robotic Engagement Zones (REZ): A non-dochtrinal but emerging concept is the REZ, an area where manned aircraft typically do not fly without prior coordination. This would give unmanned systems greater freedom of maneuver and allow for autonomous or semi-autonomous operations.
4. Kill Boxes: The Marine Corps use kill boxes as a three-dimensional fire support coordination measure (FSCM) to create “free-fire zones” for attack drones in specific objective areas, integrating fires and airspace control.
5. Pre-Planned Routes and Corridors: The Army recommends using pre-planned flight routes, UAS corridors, and UAS patrol sectors to deconflict sUAS operations, which requires careful coordination with airspace authorities.

In summary, the consensus from the JP and MTTP on airspace is that managing sUAS relies heavily on procedural deconfliction through formally established and approved airspace control measures like ROZs, rather than relying on the sUAS to avoid other aircraft in real-time. The most common approach is to segregate sUAS by altitude (below the CL) or by cre-



US Marines with 4th Marine Regiment, 3d Marine Division, observe a Skydio X2D small, unmanned aircraft system on Camp Schwab, Okinawa, Japan, August 12, 2025. (Photo by Cpl. Joaquin Dela Torre, USMC)

ating dedicated, three-dimensional operating areas.

Spectrum Management

The widespread use of sUAS increases the risk of unintentional frequency interference, which could degrade communication links and operational effectiveness across the joint force. Additional operational security measures include managing emission control and shaping friendly signatures to blend into the electromagnetic environment.

Strike Procedures

Individual Services are developing unique tactics and call-for-fire procedures for sUAS strikes. The lack of a joint standard could cause delays and communication breakdowns in a multi-Service operation.

JFIRE Update:

Integrating sUAS and Loitering Munitions

The forthcoming JFIRE update will be one of the first major publications to formally incorporate procedures for sUAS, loitering munitions, and OWA systems. This represents a significant step in standardizing how the joint force requests and employs these emerging capabilities. Key additions include:

- **Standardized Terminology and Calls for Fire:** The new JFIRE introduces a dedicated chapter on “Smaller Unmanned Aircraft Systems Fires.” It sets smaller UAS as an umbrella term for systems conducting a variety of tasks such as logistics, reconnaissance, and attack. The JFIRE focuses on UAS providing kinetic and non-kinetic fires, with a further focus on OWA UAS. As defined in JFIRE, OWA UAS includes loitering

munitions, first-person view drones, and some launched effects. The JFIRE also provides the “Attack Drone Call for Fire,” providing a standardized format for requesting support and ensuring a common language across Services.

- **New Weapons Data:** The publication now includes new tables detailing the capabilities of various OWA systems, including their range, endurance, and payloads. As available, it also adds new Risk Estimate Distances (REDs) for select sUAS munitions.
- **Joint Procedures:** By embedding these TTP directly into JFIRE, ALSSA aims to bridge the gap between Service-specific procedures and provide a unified framework for employing these systems in a joint environment. Like artillery and close air support, the JFIRE provides a joint standard for strike procedures, particularly for cross-Service requests and units with a mix of Service support.

In response to these findings, ALSSA will integrate new sUAS TTP into well-established multi-Service publications. This initiative will provide warfighters with standardized guidance more rapidly. Key publications slated for updates include JFIRE, Airspace Control, and Tactical Convoy Operations.

By embedding sUAS considerations directly into existing joint and multi-Service doctrine, ALSSA aims to improve warfighter integration and effectiveness, ensuring the joint force can fully harness the power of this transformative technology.



US Army Soldiers prepare a new company-level small unmanned aircraft system (sUAS) for operations at Redstone Arsenal, Alabama, on May 5, 2026. The Army expanded its sUAS portfolio to support Department of War (DoW) Drone Dominance priorities and accelerate feedback from Soldiers in the field. *(Photo by Capability Program Executive Aviation)*

The ALSSA sUAS Study will be published July 2026 and can be found at the ALSSA website. The ALSSA Center POC for the study is Maj Michael Schroeder, USAF

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