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Defeating the Drones: The Airman's Imperative to Defend from Small UAVs

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Small UAVs: Deadly and Persistent Threat



Air Force
AMN/NCO
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Middle East: small UAVs as small as quadcopters and as large as 12' aircraft are threatening expeditionary U.S. air bases in large numbers

Ukraine: drones are proliferating the battlefield at unprecedented rates with Ukrainians shooting down an unbelievable 33,000 drones in March 2026

Inadequate air base defense jeopardizes airpower generation which effects every facet of joint combat operations



Current Air Base Defense Systems Insufficient to Stop sUAV



- Existing air defense radars struggle to detect and track small UAVs
- Surface to air missiles ineffective against many small UAVs and not cost effective

Result: Existing air defense enterprise ineffective at stopping sUAV



Air Bases Unprepared to Defend from sUAV Threats

- Air bases have been ground threat focused
- Base Defense Operations Center (BDOC) not designed for air threats
- Airmen lack skills to negate air threats
- Airmen trained for single response to air threats: take shelter
- Minimal passive defenses



Small UAVs threaten viability of air base mission effectiveness unless drastic changes are implemented



sUAV Defense Requires Massive Overhaul of Base Defense Constructs

- **Four Imperatives:**
 - **Build Robust Point Defense – People and Equipment**
 - **Create Offensive Strike Plan**
 - **Implement Drone Protection Postures**
 - **Deliberately Manage EM Spectrum**



sUAV threat is prolific and requires multiple defensive measures



Point Defense Requires Airmen to Lead Air Base Defense

- **Airmen require extensive training to plan, command-and-control, and operate defensive equipment**
- **BDOC requires complete overhaul**
- **Defensive constructs must integrate with Army air defense**





Layered Point Defense Requires Seminal Hardware Investment

- Defense-in-depth essential
- Multi-spectral sensors provide awareness
- Airborne sensors and effectors provide flexibility and much-needed range
- Kinetic and non-kinetic effectors needed for diversity of sUAV threat
- Passive defensive measures required to further reduce threat



sUAV Threat Diversity: Necessitates multi-spectral sensor network coupled with kinetic and non-kinetic effectors



Offensive Counterair Efforts Required to Reduce Number of Threats

- **Combat operations have proven the targeting of these significantly reduces numbers of battlefield threats:**
 - **Factories**
 - **Storage Facilities**
 - **sUAV supply chain**
 - **sUAV Pilots**
 - **C2 Networks**



Objective: Minimize sUAV threat prior to reaching air base



Drone Protection Postures Balance Survival with Mission Execution

Drone Protection Postures (DPP)

	Threat Posture – LOW	Threat Posture – MEDIUM	Threat Posture - HIGH
Personnel Actions	No Actions Required / PPE equipment available	Monitor Air Threat Radar / Wear PPE equipment	Seek Shelter / Wear PPE equipment
Aircraft Maintenance Activities	Unrestricted / Consider Passive Defenses	Implement Maximum Passive Base Defenses	Immediately Launch Aircraft / Aircraft to Hardened Shelters
PPE equipment includes Kevlar helmet and vest			

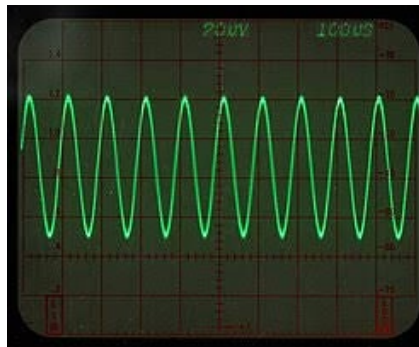
- Routine base-wide exercises required
- All Airmen must become threat aware

Objective: Provide Airmen tools and procedures to reduce risk of casualty while still accomplishing their normal jobs



sUAV Proliferation Demands Warfighter Management of EM Spectrum

- Spectrum Usage Expanding
- Airbases Rely on Spectrum Use More than Ever
- C-UAV Operations Increasingly Use Spectrum
- Wing Commanders Require Operational Spectrum Awareness
- BDOC Must Become Central Spectrum Manager



Spectrum mismanagement results in degraded airfield operations



Recommendations

- 1. Congress and DoW must additively resource the USAF with the personnel and equipment to defend its bases through robust active and passive point defense measures**
- 2. USAF must acquire layered air and ground early warning and defeat capabilities ensuring defense in depth, interoperability, and adaptability**
- 3. USAF must transform air base command and control and evolve the Base Defense Operations Center (BDOC) to become air-centric**
- 4. USAF must evolve offensive counterair doctrine against sUAVs**
- 5. USAF wing commanders must implement Drone Protection Postures (DPP) under an ability to survive and operate (ATSO) construct**
- 6. USAF wing commanders must operationalize EM spectrum management to minimize electronic fratricide**

USAF requires immediate resourcing to adequately mitigate sUAV threat to allow generation of combat air power



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