Enhancing Warfighter Lethality Through Recreational Small Unmanned Aerial Systems

By Joe Dorando

15 June 2020

Image retrieved from www.dronersguides.com

Evolutionary advancements and technologies are rapidly taking place in the military services. As our combat forces adapt into greater usage of these diverse technologies, the updating and adaptation of tactics, techniques, and procedures (TTPs) must follow. The modern-day warfighter has never before been so formidable. New weapons platforms, laser range finders & designators, GPS guidance, multiple sensor arrays, robotics and intra-networking capabilities are all developing at a rapid pace and are all quickly being rapidly deployed and landing in the hands of our forward deployed combat personnel.

> **"The more you sweat in training, the less you bleed in combat"**
> **- Richard Marcinko, US Navy (Ret)**

With the quote above in mind, a warfighter's training is a constant and never-ending evolutionary cycle. Optimizing the time required to conduct training is a constant challenge. For the unit commander and leadership, it involves assembling assets, coordinating facility access, dealing with bureaucracy* (Chain of Command), logistics, and funding, or lack thereof.

These all represent a challenging endeavor for commanders who request additional training in an effort to deploy with the best trained and most well-rounded individuals. Throw in deployments, field training exercises, combat training center (CTC) rotations, along with already high operational tempos (OPTEMPO), and not to mention personal, legal, and medical challenges of assigned personnel; all of which add to the layers of the onion that need to be peeled back to accomplish impactful training.

*Bureaucracy - the conversion of energy into solid waste

Now, consider the option of voluntary training during off duty hours. This could prove to be an effective and highly efficient method of engaging the warfighter into becoming an even more lethal asset, during both peacetime & in times of conflict.

Enter the Drone!

New, small unmanned aerial systems (sUAS), aka "drones or quadcopters" are coming on line at the company, platoon, and squad level. Our combat forces utilizing these systems will have to be educated, and evolve their skills on how to safely conduct operations & employ sUAS in hostile and GPS denied/contested environments. One method to counter this obstacle, is to have competent sUAS operators trained and capable of operating at a Tier-1 Level. To achieve this level of control with an sUAS, the operator requires time/hours on the "sticks" practicing and mastering their flight skills, as well as their limitations. During their down time, they can achieve this ability with existing facilities and assets readily available, adaptable, and affordable for conducting authorized personal flight training exercise, all while "off-duty". And, because this training is entertaining and fun, the odds are these service members will be excited to have the opportunity to hone their skills and flying abilities.

Immersive Training via First Person View (FPV)

FPV flying is an exciting, established, and proven method of operating an sUAS at distances well over a kilometer. Quadcopters are fast, small, and agile. They can reach speeds in excess of 100 miles per hour in the blink of an eye, and are capable of turning on a dime. They are acrobatic in nature and they are inexpensive to purchase, maintain, and operate. The operators can push these systems to their limits, and still easily maintain & repair the systems in the field with just simple hand tools. This training provides the operator the opportunity for enhanced muscle memory training, reaction, and response to an ever-changing environment.

FPV has also come along way with high-definition (HD) micro cameras connected to analogue or digital transmitters. This provides the operator with a true bird's eye view of their surrounding environment, and allows for exceptional situational awareness.

FPV goggles have not lagged behind either. With their higher resolution screens and sharper images, millisecond lag time, and low-profile form factor, making these optimal platforms for aggressive sUAS flight training practice and development.

Image retrieved from www.couriermail.com.au

Facility Requirements

Supporting and promoting FPV flight training for off duty personnel requires an open or enclosed space, depending on availability. In an enclosed environment, a base bowling alley can be converted with a lighted obstacle course for FPV racing in less than an hour. The same ability could be supported by a warehouse or barracks. Outdoor courses could also be set up in the same amount of time, or less. Operational capabilities in the confined spaces of commercial offices can also be ideal for the operator to maneuver through.

Providing authorization for operational usage areas will provide sUAS operators the ability and opportunity for recreational usage of approved quadcopters, allowing them to refine and enhance their tactical skills, develop instinctive, intuitive and aggressive flight performance, as well as build on their competitive determination. This will enhance our warfighter's capabilities into a formidable warrior to contend with. It will also provide commanders with the tools needed to dominate future urban battle grounds where combat may be conducted in complex, confined spaces, and the employment of sUAS will be critical for mission success.

Safety First

As with everything you do in the military, always discuss and coordinate non-standard training with immediate & installation leadership. Ensure any operations and systems employed are approved prior to execution, and always follow local, state and federal rules, policies and regulations while conducting flight operations. Also, be familiar with restrictions in place by the Department of Defense on the type of systems that are authorized for use on military installations, and any policies that may impact your ability to train on the installation.

About WE UAS:
We are military veterans and civilians dedicated to giving our wounded and disabled veteran brothers and sisters a hand up and a path into the unmanned aerial systems (UAS) and remotely operated vehicle (ROV) industry through Wounded Eagle UAS, a 501 (c)(3) charitable non-profit.

Mission:
To provide the tools and training necessary for our students to become skilled and qualified UAS/ ROV operators.

For more information please visit www.WEuas.com