

Non-Traditional Intelligence, Surveillance, and  
Reconnaissance: A Challenge to USMC Fixed Wing Tactical  
Aircraft

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# Report Documentation Page

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In combat operations during Operation Iraqi Freedom (OIF) 05-07, 95% of the USMC fixed-wing tactical aircraft (FW TACAIR), FA-18 Hornets and AV-8B Harriers, sorties were dedicated to non-traditional intelligence, surveillance, and reconnaissance (NTISR) missions.<sup>1</sup> Using FW TACAIR as reconnaissance and collection platforms appears from the outside to be a benign mission, easy to execute and to sustain in extended combat operations. In reality, NTISR missions are very difficult to execute properly and have had negative effects on FW TACAIR. The USMC must make fundamental changes to the way the NTISR mission is executed because a continued reliance on the FW TACAIR community, despite the benefits, will result in dilapidated airframes and poor combat support.

### Background

At the outset of combat operations supporting OIF and Operation Enduring Freedom (OEF), FW TACAIR was used primarily in an offensive air support (OAS) role, executing close air support (CAS) and armed reconnaissance missions. As combat operations matured and insurgents began to blend into the population, ground combat element commanders identified an urgent need: provide the ability to see what the pilot is viewing in his advanced targeting pod in order to speed up the

close air support process and gain situational awareness on the battlefield.<sup>2</sup>

With the task in hand, engineers turned to the intelligence, surveillance, and reconnaissance (ISR) community for the answer. Engineers borrowed technology from Air Force unmanned aircraft systems (UAS), which were already providing real time imagery,<sup>3</sup> and adapted the video transmitter to work with the litening pod fitted on USMC AV-8B Harriers and FA-18D Hornets. The result was a real time video down link from USMC FW TACAIR to forward air controllers and commanders via the remote operations video enhanced receiver (ROVER), a laptop, and antenna suite developed to communicate with the transmitter.<sup>4</sup>

Armed with ROVER and the advanced optics and forward looking infrared radar (FLIR) in the litening pod, commanders began to use the ROVER system to gain real-time information in their areas of operation. A new mission was developed, NTISR.<sup>5</sup>

NTISR has many faces and tasks associated, but the broad definition is a mission in which a pilot uses his or her advanced targeting pod to look at the enemy, the environment, or any other object, person, place, or thing identified by the supported unit as important to its operation.<sup>6</sup>

Because of a lower level of combat intensity, the need for FW TACAIR to provide CAS on a daily basis was no longer necessary.<sup>7</sup> However, the ground combat element had become accustomed to having ROVER with video downlink available overhead 24 hours a day. Commanders liked the idea that they could observe combat operations real time, make quick decisions to engage the enemy decisively, employ the quick reaction force (QRF), or coordinate a medical evacuation with situational awareness previously unknown to ground combat forces.<sup>8</sup> As operations continued to slow down further, CAS lines on the air tasking order (ATO) took an on call role, with the primary mission in combat now being NTISR.

#### **Continued Reliance on FW TACAIR**

AV-8Bs and FA-18s equipped with the litening pod are not designed for NTISR; nor is NTISR supported in doctrine or training standards. FW TACAIR training and doctrine are mostly focused on the execution of OAS and anti-air warfare (AAW). The *AV-8B Training and Readiness Manual*, the document used by AV-8B squadrons to manage all things training-related has only one training code for NTISR, NTISR-460.<sup>9</sup> In contrast, the AV-8B training syllabus has over 50 flights and simulators dedicated to conducting OAS and AAW.<sup>10</sup> A large void exists between the

training available for NTISR, one code, and the amount of NTISR missions being conducted in combat, 95%.<sup>11</sup>

In addition to the lack of training for NTISR, so do we fail to have up to date doctrine to provide guidance on how to conduct NTISR. MCRP 3-26 specifically lacks guidance for the planning and execution of NTISR. In fact, MCRP 3-26 does not acknowledge that Litening Pod equipped FW TACAIR can execute reconnaissance.

MCRP 3-26 Air Reconnaissance states the following:

*Currently, the only air reconnaissance platform capable of transmitting real time imagery information within the MAGTF are F/A-18Ds equipped with ATARS in the VMFA(AW) and Pioneer UAVs in the VMU.*

NTISR was developed "ad hoc" and thrown at the platforms that were the easiest fit. FW TACAIR platforms are performing a mission in combat that is not established by training standards or by doctrine. In a community built on training standards and regulations, executing the NTISR mission without definable standards or doctrine is ineffective. As a result, squadrons are forced to develop their own training standards for NTISR. As a result, a wide disparity in execution is created; in simple terms no two units are doing the same thing.<sup>12</sup> With an

absence of standardized doctrine to govern the execution of NTISR by FW TACAIR, the supported ground units receive varying service from different platforms and squadrons.

Aircrews flying dedicated ISR platforms, such as the U-2, Rivet Joint, Predator, Scan Eagle, Shadow, and Joint Surveillance Target Attack Radar System (JSTARs) receive specific training on how to collect intelligence data and conduct reconnaissance properly. In contrast, FW TACAIR pilots receive little to no training to conduct imagery collection and real time analysis.<sup>13</sup>

To complete the NTISR process, the intelligence or data collected by pilots must be processed and forwarded to higher for analysis and distribution; this responsibility falls onto the shoulders of the "robust" squadron intelligence department. Unfortunately, FW TACAIR squadrons lack the appropriate intelligence staffing and organic assets to facilitate the effective flow of the collected data. During a four hour flight, pilots will collect up to two hours of video on the 8 mm tape stored in the listening pod. This information is given to the S-2 for digitization and for inclusion into the mission report (MISREP), which is then sent to aviation combat intelligence (ACI), and after ACI analysis it is available for GCE review. Nevertheless, the only way GCE intelligence can

ensure 100% receipt of imagery collected during NTISR missions is via screen capture made by the forward air controller (FAC) or joint tactical air controller (JTAC) using the ROVER system. AV-8B and FA-18 squadrons operating in OIF / OEF have 3-4 Marines working in the S-2 shop; those Marines are manning a 24-hour post and have minimal training in processing digital video. All of these intelligence limitations create a large task load for squadron intelligence Marines and limit the flow of intelligence to the GCE. Moreover, NTISR missions are responsible for the overload on the FW TACAIR intelligence and pilots. These units are not manned or trained to process this data in a timely fashion, thus making the intelligence of little to no value.

As for utilization rates and the overall well being of the FW airplanes, FW TACAIR Squadrons flew three times their normal rates in support of combat operations during OIF 05-07.<sup>14</sup> VMA-513, an AV-8B Harrier squadron flew 4,756 total flight hours over a seven month period supporting OIF 05-07. Of those flight hours 4,519 were supporting GCE units with NTISR.<sup>15</sup> If those rates of flight time are sustained, airframes will become fatigued, parts will become in short supply, and maintenance departments will be run into the ground.

Since NTISR missions have become the standard in combat operations, FW TACAIR squadrons have modified their concept of mutual support. In order to provide mutual support against threats and to facilitate weapons employment, FW TACAIR platforms normally fly as a section, two aircraft. In support of NTISR missions in OIF aircraft have been authorized to execute single ship operations, commonly out to ranges exceeding sixty miles between aircraft.<sup>16</sup> The single ship concept was implemented to fulfill the increase in demand for NTISR assets. Though the increase in support is positive for the GCE, the FW TACAIR communities are being employed in ways that are contrary to doctrine and training standards.<sup>17</sup> With FW TACAIR aircraft utilization three times that of normal operations, pilots and aircraft will only last so long before long term damage is sustained.

Additionally, single ship operations can negatively affect combat operations. When on call CAS is requested for weapons employment, the on station aircraft must coordinate a "join up" of the section, moving into such proximity that the two aircraft can mutually support each other for threat avoidance or for weapons employment. Because his / her wingman could be upwards of sixty miles away this could delay the process up to ten minutes, maybe longer. With a fluid situation laced with

friction and adversity, ten minutes is a lifetime and certainly enough time for an opportunity (to strike the enemy) to be lost.

### Counter Argument

ROVER greatly streamlined the CAS 9-line process by allowing FACs and aircrew to quickly validate the target, and provide confirmation that rules of engagement (ROE) were adhered to.<sup>18</sup> In the same respect it changed how reconnaissance was conducted. The FAC and pilot were able to look at the same video and move through the area of operations rapidly gaining valuable imagery and data.

In spite of the damaging effects of high utilization rates, flying NTISR hour after hour, pilots developed a detailed knowledge of the area of operations. This expertise has proved invaluable during those infrequent times in which CAS was requested; pilots were able to progress through the CAS timeline, and deliver ordnance rapidly with great effects to areas with which they had become very familiar.

NTISR allowed the ground combat element (GCE) to have ISR assets available 24/7, and as an added bonus it could bypass the need to request theater ISR assets through the slow and arduous intelligence chain of command.<sup>19</sup> Simply, air officers submit a joint tactical air requests (JTAR) requesting aircraft for

tasking via the air tasking order (ATO). FACs would then submit the ISR game plan to aircrews via email or chat, and aircrews would show up prepared with points of interest (POI). Many times NTISR was requested by a radio call to the Direct Air Support Center (DASC) and asking for any available aircraft.<sup>20</sup> The nearly endless supply of reconnaissance gave commanders flexibility for planning, security, and over watch for many GCE missions.

Undoubtedly, a streamlined CAS process, aircrew familiarity within the area of operations, and increased access to ISR platforms has proven to be combat multipliers to the supported units of OIF. However, those benefits are primarily limited to those opportunities in which ordnance is employed by FW TACAIR. As mention earlier those missions make up less than five percent of all combat missions flown in OIF. This limited benefit is not commensurate with the damage inflicted upon FW TACAIR squadrons by high utilization rates. In addition, the level of support given to the supported units for 95% of the missions is not driven by doctrine or training standards, resulting in a substandard product with limited gains.

### Mitigating the Impact on FW TACAIR

The USMC should fit both the KC-130J and EA-6B with listening pods and provide aircrews with specific training on intelligence collection and analysis to facilitate a true reconnaissance role. The benefits, both platforms have extended times on station and are multi-crew. In addition, KC-130J and the EA-6B gives the supporting unit an extended on station time (4-6 hours), allowing the situation on the ground to develop. Subsequently, when the situation dictates, FW TACAIR can be called on station to employ ordnance as necessary. This process will limit the high FW TACAIR utilization rates, and ultimately provide a better overall NTISR service to the supported units.

Furthermore, when OAS and AAW tasking begin to decrease during combat operations, commanders must understand and utilize alert scheduling to lower the flight times for FW TACAIR aircraft. Flying aircraft simply because they are in theater and available for tasking is a gross abuse of assets. Employing aircraft in this manner leads to airframes reaching their fatigue limits very rapidly, resulting in less aircraft to use and degradation to the FW TACAIR communities.

The USMC must staff the squadrons to support NTISR missions properly. Specifically, S-2 shops require assets to support the

increase in intelligence requirements, Marines, training, and equipment. Pilots need specific training in the collection of intelligence, while intelligence Marines need training in the processing of video. If an ISR role is to be fulfilled, the training, personnel, and equipment must exist to ensure effective intelligence is developed for use by the supported units.

### **Conclusion**

In the execution of warfare one must remain flexible to his/her surroundings. When a new capability emerges, such as ROVER, changes must be made to maintain the initiative. At the same time, assets must be managed and concepts developed to ensure that the war is fought responsibly. In the last three years NTISR has shown it is here to stay, but during that time it has taken its toll on the FW TACAIR community. NTISR has single handedly "high timed" jets, lowered combat efficiency, and diminished the quality of service provided to the GCE. Unless the USMC makes changes now, the FW TACAIR community will continue to deteriorate.

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