THE AIR FORCE

LAW REVIEW

THE MASTER OPERATIONS LAWYER'S EDITION

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Fighter Ops for Shoe Clerks

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Shoe Clerk (shoo klurk) n. generally speaking, a person with close-set eyes, a sloping forehead, and thick spectacles; one who does not fly jets; a fighter pilot wanna-be; placed into groups, they constitute a FPLSS (fighter pilot life support system). "The pilot looked on with disgust as the shoe clerk, a man with cokebottom glasses, eagerly filled out the paperwork." See Paper Pusher, Lesser Being, Pencil-necked Geek.

Fighter Pilot (fi-tur pi-let) n. one who flies airplanes to avoid work; a graduate of pilot training, a program for ego-maniacs who aren't smart enough to get into law school; obsessed with fashion, wears a leather jacket to distinguish himself from shoe clerks; sells insurance to shoe clerks upon retirement. "The judge advocate looked on with compassion as the fighter pilot, crippled by attention deficient disorder, struggled to understand the issue." See Prima Donna.

I. INTRODUCTION

Shoe Clerk?!? Alas, the old fighter pilot term for "those who aren't" still haunts the hallowed halls of fighter squadron ops centers across the Air Force. There is, however, a growing recognition that executing the mission is a team effort, one that requires both fighter pilots and, well ... shoe clerks. The reason is simple. Today's military operations are, politically and legally, highly surgical endeavors - they are Clausewitzian to the core. One minor misstep in the execution of a mission can have disastrous political and international ramifications. At the same time, they can be extremely complex. It is not unusual for forces from around the world to deploy to remote locations with little notice. Whether it be guarding jets in the desert, refining rules of engagement (ROE), scrubbing target lists for compliance with the law of armed conflict (LOAC), building tent cities, or ensuring troops take advantage of the combat zone tax exclusion, shoe clerks have come of age!

That said, a great divide sometimes separates the flyers from the non-flyers, a divide deeper than mere leather flying jacket envy. The tongue in cheek definitions set forth above still reflect the subconscious (and not so "sub") opinions of some military members. If they didn't, you wouldn't have grinned knowingly while reading them. In this article, we will try to bridge this divide by offering a primer on fighter operations for shoe clerks, particularly the judge advocate (JAG).

Our goals are three-fold. First, we hope that armed with a better understanding of what the fighter community does, you will enjoy greater credibility within that seemingly exclusionary group. This will, in turn, make them more receptive to what you bring to the fight.

Second, we want to enhance the quality of what you can contribute. It is a basic premise of law, or any other support function for that matter, that service will improve if you understand the customer (client), his product, and the environment in which he operates. This is no less true in fighter ops. A JAG reviewing a Master Attack Plan who simply chants the "minimize collateral damage" mantra doesn't
offer much value added to the mission planning process. By contrast, one who understands the differing capabilities and limitations of weapons systems can offer meaningful, practical advice on meeting collateral damage legal standards or developing ROE. The knowledgeable JAG will be able to apply, vice simply recite, the law; he'll be a key player in the "iron on target" process.

Finally; it is our hope that by realizing how complex, time-consuming, and potentially dangerous fighter operations are, you will gain a greater appreciation for those who conduct them. In the same way that we want to increase the credibility of, and respect for, "shoe clerks," so too do we want to increase your understanding of fighter pilots. Everyone in the Air Force brings something pretty unique to the fight; the better we understand that, the more effective we will all be. After all, the desired end state is "one team - one fight."

Our approach is simple. First, we outline what it is that fighters do, i.e., their missions. Next, we describe what the Air Force conducts those missions with - the aircraft and their weapons. Finally, we take you through fighter operations, from flying considerations, to planning and executing a typical mission. Our article concludes with appendices designed to help the non initiate break the "fighter-speak" code, a unique language rivaling ancient Aramaic in difficulty. The goal isn't fluency. It's merely to offer up enough translations to avoid your marginalization in a fighter environment.

A few caveats before we begin. First, we have left a great deal out; this article is a primer, not a textbook intended to make you mission ready (MR) for the F-16. Second, lest the article become an unmanageable behemoth, we only discuss fighter operations from the Air Force viewpoint. Third, much of this is frankly tedious. Flying looks pretty alluring as jets jump off the end of the runway in the morning's first light with afterburners ablaze, but to make that happen right, operators have to master a quantum of facts, procedures and acronyms that would put a bar review course to shame. That being so, those who really want to understand fighter ops must have a handle on an awful lot that's not very flashy. Finally, despite valiant efforts by the Air Force to standardize terminology and procedures, differences exist between aircraft, commands, and, in alliance or coalition operations, countries. Though we have tried to use the most generic iterations, you must be sensitive to the fact that those prevalent in your unit or operation may differ slightly from what you see here.

II. MISSIONS

In 1995, the Air Force initiated a long range planning process that led to the identification of our "core competencies." /1/ Core competencies are what the Air Force does, what we bring to the joint fight. At the Fall 1996 CORONA conference, the Air Force's senior leadership articulated six core competencies:

- Air and Space Superiority
- Global Attack
- Precision Engagement
- Information Superiority
- Rapid Global Mobility
- Agile Combat Support /2/

It is useful to keep the core competencies in mind because planners on joint staffs use them in thinking through when and how fighter assets may be brought to bear. Current Air Force
doctrine, on the other hand, defines the operational art of employing aerospace forces in terms of roles and missions. AFM 1-1 outlines four basic roles:

- Aerospace Control
- Force Application
- Force Enhancement
- Force Support

Fighter operations, or missions, traditionally fall under the first two roles. Fighters may also be used in the third, force enhancement, to provide surveillance and reconnaissance, support special operations activities, or even conduct combat search and rescue.

While it might be rare to hear fighter operators at the unit level speak in terms of core competencies, missions are a common subject of discussion. Because a solid grasp of mission terminology and acronyms is essential to effective interaction with fighter pilots and commanders, we begin by outlining those missions in which fighters engage, and those which play key roles in supporting them. Absent a complete understanding of missions, the judge advocate will be unable to effectively participate in two critical fighter ops activities - mission planning and the development/application of rules of engagement.

A. Aerospace Control.

The role of aerospace control is currently broken into defensive and offensive control of both air and space. Fighters train for and execute the missions of Defensive Counterair (DCA), Offensive Counterair (OCA), and Suppression of Enemy Air Defenses (SEAD), which can be considered a subset of OCA. Reduced to basics, counterair missions are designed to achieve air superiority by destroying or neutralizing enemy air forces, their associated infrastructure and their munitions. They enable friendly forces the freedom to attack, while providing freedom from attack by the enemy.

In offensive counterair missions, the fight is taken to the enemy to destroy his aircraft, surface-to-surface missile sites, and the infrastructure for generating, flying, and controlling strikes against friendly forces. OCA includes any mission against targets which might pose an offensive threat to US or friendly forces/territory from the air. For instance, F-15C/D and F-16s may be used to "sweep" the skies of enemy aircraft. Similarly, F-16s, F-15E Strike Eagles, and F-117 Nighthawks might attack enemy aircraft, surface-to-surface missile sites, munitions, and supporting infrastructure on the ground.

In its SEAD variant, OCA includes attacking enemy surface-to-air missile (SAM) and anti-aircraft artillery (AAA) facilities in what are labeled "wild weasel" missions. Performed valiantly by the F-4G for many years, these missions recently became the responsibility of specially equipped Block 50 F-160s. SEAD missions also encompass standoff electronic jamming performed by the EA-6B and the EF-111 (soon to retire from the AF inventory), as well as standard physical strikes by aircraft such as the F-15E and F-117 (although the F-117 is more likely to be used for strategic attack).

By contrast, DCA is classic air defense and generally occurs over friendly held territory. While any mission to identify and destroy an incoming threat falls within the DCA category, the most
common methods are "strip alert" and "combat air patrol" (CAP). In strip alert, aircraft and pilots are readied to launch within a set period - measured in minutes - if a threat appears. CAP, on the other hand, involves actually putting aircraft into "orbits" where they remain ready to intercept incoming aircraft./6/ Whether strip alert or CAP is used usually depends on the severity and imminence of the threat. The F-15C/D and F-16 are DCA fighters.

B. Force Application

The role of force application is currently broken into three missions: strategic attack, air interdiction, and close air support. They are conducted at the strategic, operational, and tactical levels of war, respectively. /7/ A strike against an enemy's command and control system would be a typical example of force application.

C. Strategic Attack

Strategic attacks are operations against key targets that will affect an enemy's overall war effort. They should be distinguished from missions which are designed to affect specific military operations, either the enemy's or our own. For example, an attack against a bridge to cut resupply would not be a strategic attack; its effect is too narrow. However, an attack against an electrical generating facility to disrupt power to an entire region would be, as would a strike against a communications node, critical factory, or national command and control facility. Efforts to disrupt the morale of a nation or discredit its leader, both of which occurred during Desert Storm, would also be strategic attacks. Bear in mind that it is not a mission defined by the type of weapon or weapon system used. In the past, the term strategic was often deemed synonymous with the use of nuclear weapons; that is not the sense in which it is used here. Nor are strategic missions limited to long-range bombers, cruise missiles or ballistic missiles. Any attack capable aircraft can perform a strategic attack function; it is simply a matter of what it is attacking and why. Strategic attack capable fighters are the F-16, F-15 E, and F-117.

D. Interdiction

Interdiction missions are those whose purpose is to disrupt and destroy enemy ground forces, and/or their support, before they can be brought to bear against friendly forces. This allows friendly forces to halt an enemy offensive and seize the initiative, thereby rendering the enemy reactive, rather than proactive. Interdiction sorties usually target second and third echelon forces. In many cases, however, they take the form of attacking enemy lines of communication (LOCs) in order to separate its tooth (fighting power) from its tail (logistic support). /8/ Interdiction targets may also include personnel and supplies that have not reached the front and assets used to transport them (trains, trucks, etc.). Likewise, attacks against command and control facilities (except those with national responsibilities) are interdiction missions because they disrupt the enemy's ability to maneuver and direct forces to, from, and around the theater of operations. Interdiction missions are performed by the F 16, F-15E, A-10, and (occasionally) F-117.

E. Close Air Support

Close air support (CAS) consists of operations against enemy forces in contact with or in the vicinity of friendly ground operations. They have immediate effect at the tactical level. Because it is flown in support of ground operations, and because of the need to closely coordinate with ground commanders to ensure responsiveness and
the avoidance of friendly fire incidents, CAS is conducted under the positive control of the
ground force commander being supported./9/ Typical targets include maneuver forces or
positions where enemy ground forces have dug in. As in strategic attack, it is neither the aircraft
nor the category of the target that renders a mission close air support; instead it is the intended
effect that is determinative. /10/ The primary CAS fighters are the A-10 and F-16.

F. Supporting Missions

Numerous missions are flown in direct support of fighter operations, some as part of the same
direct effort, others in broader roles. Command and control (C) aircraft, for instance, are present
in almost any combat operation flown in today's environment. The primary aircraft performing
the aerial battle management function is the E-3 Sentry Airborne Warning and Control System
(AWACS). A related command and control system for the ground battle is the E-8 JSTARS,
which can "feed" information to the AWACS. /11/ Key support missions also include air
refueling, a service provided by the KC-10A Extender and KC-135 Stratotanker. Finally,
important as any mission to the crew member is combat search and rescue (CSAR). CSAR
platforms include the MH-60 and MH-53 helicopters and a number of Special Operations Forces
(SOF) aircraft, as well as the fighters supporting the rescue as the on-scene CSAR commander
("Sandy") or providing OCA/DCA protection for CSAR forces./12/

III. AIRCRAFT AND WEAPONS

Missions are what fighter operations consist of, what fighters do. To fully grasp fighter
ops, however, you must also be familiar with the jets themselves and the weapons they employ.
This is particularly true for judge advocates because without understanding the nature of the
capabilities and limitations of the means by which force is used in armed conflict, it is impossible
to provide meaningful advice on whether that force complies with the legal requirements of
proportionality, necessity, and discrimination. The summaries below should get you moving in the
right direction.

A. Aircraft

The aircraft itself is the at the heart of the weapon system. Each brings differing assets and
liabilities to the fight. Therefore, when planners decide what types and numbers of aircraft to task
against an objective, there are very specific reasons for their choices. Since those reasons often
remain unarticulated, the JAG, absent a game of 100 questions, may have to piece together a plan's
rationale that is quite obvious to the other players. Of course, the choice of aircraft has important
legal ramifications. For instance, planners often weigh factors such as survivability against
accuracy in selecting aircraft to execute a mission.

Similarly, in a properly functioning task force, the judge advocate will be heavily involved
in ROE development, explanation and application. Since they involve both self-defense and
mission accomplishment, knowing the capabilities of the aircraft is a basic prerequisite to effective
involvement." After all, the ability of an aircraft to defend itself or to execute the assigned mission
in accordance with the ROE is dependent on what that aircraft can, and cannot, do (in light of the
threat, weather, etc.). For reasons that are self evident, then, understanding the assigned aircraft is
"Job One" for the operational judge advocate.

1. F-117 Nighthawk
The F-117 was the first aircraft specifically designed to take advantage of low-observable (LO), or "stealth," technology. It became operational in 1983, but its existence and basing remained classified for nearly a decade. During Desert Storm, F-117s flew nearly 1,300 sorties without a single loss.

A single-seat fighter, it is an interdiction and strategic attack aircraft designed to penetrate enemy airspace without being detected, especially at night. Its ability to do so derives from a number of features which reduce "radar signature," i.e., the radar return created by the aircraft. In particular, the airframe "skin" is faceted; it consists of a multitude of flat panels which reflect radar signals at differing angles. Further, the aircraft's surface is made of radar absorbent materials. Adding to the F-117's stealth capabilities is its black color, which makes it difficult to see at night, and placement of the engine intakes and exhaust on the top portion of the aircraft, which reduces its heat signature, thereby providing it greater protection against infrared (heat) guided weapons (e.g., certain SAMs). Of course, night attack also facilitates the objective of penetrating undetected.

The F-117 is also renowned for its accuracy. Equipped with an inertial navigation system (INS) and the global positioning system (GPS), the aircraft maintains precise information on its position and the location of its target's. Additionally, it has a steerable turret mounted in the fuselage underside that incorporates both forward and downward looking infrared (FLIR and DLIR) systems. These allow the F-117 to use the IR spectrum to safely navigate and successfully find and destroy targets at night or in conditions of reduced visibility. Combined with the ability to designate targets with a laser and then automatically track them, the F-117 enjoys true precision attack capability.

An air-refuelable aircraft, the F-117 has an unrefueled range of approximately 650 miles. With a maximum speed of 650 miles per hour (subsonic - or slower than the speed of sound), it is relatively slow in comparison to its fighter brethren; it relies on stealth technology, not speed, to evade threats. The F-117 is capable of carrying an array of precision weapons, including laser guided bombs, the AGM-65 Maverick and the AGM-88 Harm. Though it can mount the air-to-air AIM 9 Sidewinder externally, it does not usually do so. Overall, its ability to defend itself is minimal; hence its reliance on stealth.

2. F-15 Eagle

The F-15 comes in two general variants, the air-to-air F-15 C (single seat) and D (two-seat) Eagle and the dual-role (both air-to-air and air-to-ground) F-15E Strike Eagle. It enjoys an impressive acceleration capability resulting from the high thrust-to-aircraft weight ratio generated by its engines, while its large wing surface area provides a maneuverability advantage, particularly at high altitude. Combined with a speed of 1,875 miles per hour (Mach 2.5+), it is faster than most of the aircraft it might encounter. An unrefueled range (with three external fuel tanks) of nearly 3,450 miles further enhances the versatility of the aircraft in a counterair role.

The flying characteristics of the jet are complemented by its fighting capabilities. The F-15 is equipped with a long range, "look down" radar (either the APG-63 or 70) that can track small fast moving targets even when they are at low altitudes ("low level" or "on the deck"). This is an important capability because in older radar systems reflections (radar returns) from the ground itself (ground clutter) often masked the presence of low-flyers.
Eagles possess a state-of-the-art armament computer system which allows them to employ the advanced versions of the AIM 7 Sparrow, AIM 9 Sidewinder, and AIM 120 AMRAAM air-to-air missiles. Internally, the F-15 is armed with a 20 millimeter (mm) Gatling Gun (a weapon with multiple rotating barrels), useful for close-in engagements. During a fight, the Eagle's heads up display (HUD) places the information a pilot needs to track enemy aircraft on a transparent glass screen directly in front of him. This keeps him from having to divert his attention from his opponent to look down at the controls.

Enhancing its defensive abilities are a first-rate radar warning receiver (ALR-56C) and recently upgraded electronic countermeasures set (ALQ-135). The former allows the pilot to know the general direction of the enemy, as well as when the enemy (either ground based or on enemy aircraft) is looking for him with search radar or engaging him with fire control radar. The latter permits him to jam most search, fire control, or missile guidance radar systems. During Desert Storm, the F-15's prowess was aptly demonstrated when it scored 36 of the Air Force's 39 air-to-air kills.\textsuperscript{18}/

The two-seat dual-role F-15E Strike Eagle is designed for high-speed, deep penetration of enemy territory, while retaining its air-to-air role. Its air-to-air capability is particularly important as it allows this aircraft to fight its way to and from targets deep in enemy territory. During the Gulf War, the then new F-15E was deployed early and performed with impressive results throughout the air campaign.

In a high-threat environment, the terrain-following capable Strike Eagle can ingress at a very low altitude, although the tactical situation will determine whether or not doing so is prudent. "Terrain following" means that the jet has the ability to follow the shape (nap) of the earth, thereby taking advantage of "terrain masking," or the use of terrain to shield the aircraft from enemy radar. The inertial navigation system transmits position information to a digital map in the cockpits of both crew members. GPS equipment is currently being installed on the F-15 fleet to further refine its location monitoring accuracy. For targeting, the aircraft has a radar system (APG-70) that allows it to identify ground targets from as far away as 80 miles (depending on their size). Once the target has been located, the image can be frozen on the cockpit radar screen; this permits the radar itself to be turned off, thus making it more difficult for the enemy to locate the aircraft. The F-15E's can carry most of the air-to-ground weapons the Air Force possesses, to include the 5000 pound penetrator bombs that previously only the F-111 (a fighter no longer in the inventory) could carry. Its air-to-air armament is identical to the F-15 C/D.

High-speed, low-altitude penetration at night and in poor weather is made possible by the Low Altitude Navigation and Targeting Infrared for Night (LANTIRN) system. It consists of two pods - one for navigation and one for targeting - that are attached to the aircraft. A special terrain following radar and a forward looking infrared (FLIR) sensor which feed data directly into the pilot's HUD is contained in the navigation pod. The pilot can either fly the aircraft using this cueing information or turn on the aircraft's autopilot, and thereby let the aircraft fly itself in the terrain following mode. The targeting pod has an infrared sensor that detects and displays a high-resolution image of targets as far as 10 miles away back to the pilot. A target can then be designated by a laser and the pilot can command the pod to automatically track it. The laser derives accurate range information for the weapons delivery computer while it illuminates the target with laser energy that the laser-guided bomb (LGB) uses for terminal homing. Targeting information can also be used to "cue" infrared-guided air-to-surface missiles, such as the AGM-65D/G Maverick, for tracking and attacking ground targets.
As noted, both the F-15 D and E models are two seat aircraft. However, the rear seat in
the D model has no combat purpose. Instead, it is used for pilot training and evaluations, and
even occasional "incentive" rides for shoe clerks. By contrast, the back seat of the F-15E is
designed as a combat position for a weapons system officer (WSO), a navigator with extensive
additional training in weapons and fighter tactics. The WSO has multiple screens on which
navigational, targeting, and threat information is displayed. He is the one who actually
designates the target and fires the weapons in the F-15E, except for close-in air-to-air combat or
visually delivered bombs.

3. F-16 Fighting Falcon

The Air Force's "workhorse," and most prevalent fighter in the inventory, is the multirole,
single-seat, single-engine F-16 Falcon. Indeed, it flew more sorties in Desert Storm than any other
aircraft. Due to its small size and single engine, the F-16 is more maneuverable, harder to see,
more fuel efficient, and less expensive than other fighters. As a result, the F-16 is also
the fighter of choice for the air forces of approximately 20 nations around the world, making it by
far the most popular US export fighter. Like the F-15, there is a single-seat C model and a two-seat
D model. Both the C and D model F-16s are fully combat capable. The D's second seat enables it
to be used for training and evaluation purposes, although at the expense of a portion of its fuel
capacity, range, and endurance.

A "fly-by-wire" flight control system contributes to the F-16's unmatched maneuverability. In a
fly-by-wire system the control stick, which in the F-16 is mounted on the right console of the cockpit
instead of through the center of the floor, sends pilot control input directly to the flight control
computer. The computer then transmits commands to the various flight control surfaces of the aircraft
(flaperons, horizontal stabilators, and rudder) via electrical wires rather than cables and pulleys.
Enhancing the Falcon's combat effectiveness is a bubble canopy which gives the pilot unparalleled
visibility through 360 degrees of view. Additionally, the seat is reclined 30 degrees to enhance the
pilot's ability to withstand and sustain the extremely high G-force maneuvering (9 Gs) that the aircraft
can produce and sustain.
The F-16 enjoys a top speed of Mach 2+ (1,500+ miles per hour) and an unrefueled range of 2,000 miles. Of course, as with any fighter aircraft, its load, altitude, speed, maneuvering, and use of the engine's afterburner affect fuel consumption. For example, an aircraft carrying external tanks and a full load of bombs and missiles while ingressing and egressing a target area at high speed and low altitude would have a fraction of the range of one flying at much higher (optimum) cruise altitudes and speeds typical of a deployment profile.

Lovingly referred to as the "Viper" by those in the F-16 community, the Falcon has been produced in many versions, called "Blocks." Blocks 5, 10, 25, and 30 were general purpose multi-role fighters: proficient in all missions, specialized in none. Starting with Block 40, the F-16 became "missionized," although it still retains all of its multi-role capabilities. Block 40 is optimized to perform the night, terrain-following LANTIRN role, and is particularly adept at delivering precision-guided munitions. Block 50 is optimized for the Wild Weasel/SEAD mission. Most blocks have the laser gyro INS and GPS, while all blocks have a HUD display, an excellent look down radar, sophisticated RWR, and can employ almost the entire USAF inventory of weapons. An external pod (ALQ-135 or ALQ-184) provides electronic countermeasures (jamming) ability for the Falcon.

Internally, the F-16 has a 20 mm cannon. Externally, it can be configured in whatever combination of munitions or fuel tanks is needed to accomplish its assigned mission. The Falcon can carry six air-to-air missiles (AIM-120 AMRAAMs or AIM-9 Sidewinders): Some air defense versions have been modified to mount AIM-7 Sparrow missiles as well. Air-to-surface munitions are carried on stations located along the bottom of the wings and fuselage. The Air Force's most versatile fighter, the F-16 is also capable of conducting tactical reconnaissance by mounting a pod (the Advanced Tactical Airborne Reconnaissance System - ATARS) on the center station. No other fighter in the Air Force inventory today performs the tactical reconnaissance mission.
4. A-10 Thunderbolt (Warthog)

The A-10 is the Air Force's only aircraft dedicated almost entirely to close air support. Its design gives it an impressive ability to perform that task. In order to hit mobile enemy positions with the accuracy and reliability that the presence of friendly troops in the target area requires, the A-10 operates at low altitudes (typically under 1,000 feet). Unfortunately, this makes it very susceptible to enemy ground fire. To address this vulnerability, the cockpit is surrounded by titanium armor and the structure of the aircraft is such that it can survive direct hits by high explosive projectiles of up to 23 millimeters and remain flyable. Additionally, the fuel tanks are self sealing, and if the hydraulic flight control system is damaged the flight, controls can still be manipulated manually.

Warthog's are not only survivable, they represent a potent weapon system. Though necessarily slow (420 miles per hour max) because of the need to acquire ground targets at low altitude, the aircraft is very maneuverable. It can loiter (stay) in the target area for extended periods to provide on-call support to ground troops, and has a short take off and landing ability that permits its deployment to locations very near the front. For example, it can fly 150 miles and then loiter for over an hour.

The A-10's equipment is equally impressive. It has a HUD, uses an INS system, and can activate countermeasures against both infrared and radar guided SAMs. Its night capabilities are greatly enhanced, through the use of night vision goggles, the Night Vision Imaging System (NVIS), while a Pave Penny pod mounted under the fuselage allows the pilot to "see" a laser designated target by placing a cue in his HUD. At particular risk of hitting the ground given the altitude and the environment in which it flies, the A-10 is equipped with the Low Altitude Safety and Targeting' Enhancement (LASTE) system, which provides ground collision avoidance cues and audible warnings.

At the heart of the aircraft is a 30 mm internal Gatling gun that can fire 3,900 rounds per minute; it is powerful enough to destroy tanks. With eight under wing and three under fuselage stations, it can carry up to 16,000 pounds of ordnance, from rockets to bombs or missiles. Since it is often employed, in an anti-tank role, the AGM 65 Maverick is commonly used by A-10s. During Desert Storm, for example, A-10s launched 90% of all Mavericks.

5. Support Aircraft

Though fighters can perform in a wide array of roles, they almost always require the support of non-fighter aircraft. Given the distances from which aircraft deploy, the difficulty of finding operating bases near the immediate area of operations, and the requirement during missions such as no fly zone enforcement to maintain coverage of an area for extended periods, tankers have become a particularly critical part of the team. The Air Force flies two, the KC-135 Stratotanker and the KC-10 Extender:

The KC-135 is the predominant tanker in the inventory. First delivered to the Air Force in 1956, today's KC-135 have been extensively modified to increase fuel load, improve fuel efficiency, and extend the life of the airframe. To refuel most aircraft, the KC--135 lowers a "boom" (large fuel transfer pipe) from the rear of the aircraft. The end of the boom is then maneuvered by a crewmember (the "boomer") into a special receptacle on- the aircraft to be refueled. Some aircraft (e.g., most Navy airplanes) have a probe extending from the front of the aircraft which takes on fuel. When the KC-135 is refueling these, it uses a "drogue," or basket
attachment which replaces part of the boom and must be configured prior to flight. The aircraft taking on fuel flies its probe into this funnel shaped device and fuel is passed. Stratotankers are also capable of transporting cargo and up to 80 personnel.

First deployed in the 1980s, the KC-10 Extender is the newest tanker. The Air Force currently has just over 50 KC-10s in the active fleet, compared to nearly 250 KC-135s. Like the KC-135, it can transfer fuel either through a drogue or boom, but is capable of switching back and forth in flight without any reconfiguration. With a capacity of 356,000 pounds, the KC-10 can carry nearly twice the fuel of a KC-135. The Extender can also transport over twice the weight in cargo (approximately 170,000 pounds), as well as 75 passengers.

On a typical "fighter drag," or deployment, four to six fighters will fly with and refuel from one tanker. For long distances or larger numbers of fighters, more tankers will be added to the flight. During combat operations and exercises, where the aircraft are not simply trying to get from "A" to "B," tankers will typically establish an "orbit" and multiple fighter flights will join up on them, "cycle through" for gas, then leave the 'orbit to continue on with their prescribed missions:

Fighter operations are also increasingly dependent on' the E-3 Sentry Airborne Warning And Control System (AWACS). A modified Boeing 707, the E-3 is distinguishable by its rotating dome mounted on top of the aircraft. The dome is a radar system that allows the AWACS to locate and track low flying aircraft (and ships) for 200+ miles over both land and water. AWACS also possesses an identify friend or foe (IFF) system which can interrogate and receive IFF transmissions (squawks) from friendly aircraft to help distinguish them from enemy aircraft. On board the E-3, a crew of between 13 to 19 mission specialists (in addition to a flight crew of four) monitors, the aerial situation and provide communications support. Their battle management functions range from passing general threat information to controlling complex multi-flight engagements:

E-3s are equipped with the Joint Tactical Information Distribution System (JTIDS). It is used to pass digitized information about friendly and enemy aircraft locations and other important command and control information to ground stations and participating aircraft. A newer, more powerful system, the Tactical Data Information Link-Joint (TADIL-J), is scheduled to replace JTIDS over the next few years. Other upgrades underway include improved electronic support measures (ESM), in particular a passive (receive-only) detection system that can pick up electrical signals (usually radar) emitted by other aircraft. This will supplement the location and surveillance capabilities of the dome radar. The E-3 is capable of flying unrefueled for over eight hours. Since it is air-refuelable, its potential time on station is limited only by the endurance of its crew. There are just over 30 AWACS in the active Air Force inventory, with an additional 18 flown by NATO crews.

Complementing the E-3 is the E-8 Joint Surveillance and Target Attack Radar System (Joint STARS). JSTARS is a joint Army-Air Force program developed to do for ground forces what AWACS does for the aerial fight. The E-8 is equipped with a multimode side looking radar that can locate stationary or slow moving targets (such as vehicles) on the ground out to over 150 miles. The radar data is transmitted for analysis to a mobile JSTARS Ground Station Module (GSM), which is present at the brigade level and above, where the operator determines location, speed, direction and classification of the target. Either ground or air assets can then be tasked, as necessary, to destroy it.

The overall abilities of the JSTARS aircraft are impressive. During an eight hour flight at 30-40,000 feet, the E-8 can cover in excess of 350,000 square miles of territory. Though JSTARS
was originally developed for surveillance, targeting and battle management of ground operations, today the E-8 can perform battle damage assessment (BDA) to determine the need to restrike targets. It can also be used to locate surface-to-air mobile missile launchers (or fixed sites).

Finally, the **EA-6B Prowler** merits mention. This Navy aircraft is used jointly by Air Force and Navy pilots to perform the electronic jamming and SEAR mission formerly done by the EF-111 for the Air Force. It accompanies attack aircraft into enemy territory where electronic warfare pods mounted on its wings jam enemy - radar, electronic data links, and communications. Carrying a crew of four, a pilot and three electronics countermeasures officers, it has an unrefueled range of approximately 1,100 miles and a top speed of 575 miles per hour. The EA-6B can be armed with an AGM-88 HARM missile for use against enemy radar and SAM sites.

**B. Weapons /23/**

Many judge advocates are familiar with aircraft; one who understands weapons, however, is a rare bird indeed. The problem is that the most fundamental advice a judge advocate offers in armed conflict is whether or not the destruction or death being contemplated is lawful. That advice cannot be rendered effectively without some sense of how the weapon works, the available alternatives to its use, the destruction which occurs when it is employed, and what its possible collateral effects are. For example, it is useful to know that a laser guided bomb delivery is more accurate than a high altitude radar delivery. But if the target area is badly clouded over, it is even more important to know that laser guided bombs cannot see through weather, or that another option, infrared systems, are "colorblind" and cannot guide under certain weather conditions. The point is that the JAG who doesn't understand the basics of aerial weaponry will be hard put to offer situation specific legal advice.

1. **Air-to-Air Missiles**

Air Force fighters currently carry three types of air-to-air missiles. The newest generation variant is the Aerial Intercept Missile (AIM) J20A Advanced Medium Range Air-to-Air Missile (AMRAAM), a follow-on to the AIM 7 series. AMRAAMs employ "fire and forget" technology. The aircraft's radar, which provides the target's position and flight direction to the missile, "locks on" to the target and the missile is fired. /24/ If unthreatened, the fighter may continue to track the target and provide update information by data link to the in-flight missile. However, the pilot may also elect to quit tracking the target and turn rapidly away from a threat. When this occurs, the missile's on-board computers will navigate it to a point approaching the target (estimated from the target's last track data) where the missile's "seeker" (guidance system) will go "active." In this step, a small radar on the missile automatically activates to acquire and track the target through intercept. The beauty of the system, which is carried by both the F-15 and 16, is that the pilot can engage multiple targets at once. An AMRAAM, with a range of 30+ miles, is beyond visual range (BVR) capable, as are the AIM-7 and AIM-9./25/ At Mach 4+, it is also extremely fast.

The **AIM-7M Sparrow**, AMRAAM's predecessor, remains in wide use with the Air Force, many allied air forces and the US Navy. It is radar guided, but unlike the AMRAAM is not a "fire and forget" missile, which means that the launching aircraft must continue illuminating the target with its radar until the missile impacts the target. A new version, the AIM-7R, adds an infrared seeker to improve the missile's homing ability for environments in which the enemy is employing electronic countermeasures. The missile has a range of just under 30 miles and a speed of approximately Mach 4. Like the
AMRAAM, the Sparrow is an all-aspect missile, i.e., it can attack the target from any angle. During the Gulf War, AIM-7s accounted for 22 air-to-air kills.

For close-in engagements, Air Force fighters employ the **AIM-9 Sidewinder**. The AIM-9 is a heat seeking infrared guided missile. The pilot can either point his aircraft (and hence the missile seeker) at a visually acquired target or he can command the missile seeker to look at a target being tracked by the radar until the missile's seeker head detects the heat generated by the opponent's engine or airframe. When this heat signature is strong enough to track, a tone sounds in the pilot's headset and the missile can be launched. Because the missile itself tracks the target, once launched the pilot can take evasive measures or engage another target. Though earlier versions of the missile could not reliably track a target in a head-on engagement (commonly referred to as a "face shot"), current models are all-aspect. The AIM 9 has a range of over ten miles and a speed of Mach 2+.

2. **Air-to-Ground Missiles (AGM)**

Air-to-ground missiles are distinguished from other air-to-ground ordnance by the fact that they are powered and guided. Most common is the **AGM-65 Maverick**, a missile that can be carried on all fighters. The A and B models are electro-optical guided, i.e., a video display is used to direct the missile to target. In the front of the missile is a camera which transmits a picture into the cockpit. Using this picture, the pilot (WSO in an F-15E) selects where he wants the weapon to strike, and then launches it. The missile homes in on the image using its internal camera. Because the guidance equipment is in the missile itself, it is a fire and forget system. This allows the aircraft, which can carry multiple Mavericks, to quickly acquire and attack other targets. D and G model (IIR-imaging infrared) Mavericks are similar, but have an infrared guidance system that displays infrared video in the cockpit. As a result, they can be fired at night and in low visibility conditions. AGM 65s can be used against many different targets - tanks, ships, trains, SAM sites, etc. - from most altitudes and from as far away as 14 miles.

A second key guided missile is the **AGM 88 HARM**. It is designed to destroy radar equipped air defense systems, and is the primary weapon used by F-16s operating in the wild weasel role. The HARM contains a seeker head that homes in on the radar emissions of the target. With a potential range of over 80 miles (dependent upon aircraft delivery altitude), it gives the F-16 a stand-off (fire from a distance) capability that in most cases exceeds that of the SAMs being targeted. HARM equipped aircraft create a true "Catch-22" situation for the enemy. If he turns on the radar looking for penetrating aircraft, the radar itself becomes a prime target; on the other hand, if he does not the penetrating aircraft will get through.

Used by the F-15E, the **AGM 130** is a GBU-15 (see below) with a rocket motor added for propulsion. Effective against most targets, there are both television and imaging infrared variants that transmit images to the WSO. Upon identifying the target, the WSO locks the system onto, it. The missile is then self-homing (fire and forget). Alternatively, the WSO may elect to manually guide it to target using images sent back from the missile to the aircraft. Though the range of the AGM 130 is classified, it does have a significant stand-off ability and can be launched at low level. Both of these capabilities enhance the F-15E's survivability.

3. **Bombs**

General purpose (GP) bombs are both unguided and unpowered; hence their label of "dumb" or "iron" bombs. They are aimed by maneuvering the aircraft to a precise location determined by the on-board computers and dropping the bombs ballistically onto the target.
For example, in some cases dive bombing, or releasing the bomb(s) from the airplane as it is flying down at the target, is used. In others, the aircraft flies level, simply dropping the bombs. Their momentum carries them forward and down into the target. In another technique, the bomb is "tossed" at the target. The pilot pulls the aircraft up out of low level flight at a point based upon computer cues, and the fire control computer automatically releases the bomb (with the pilot's consent) while the aircraft is still in the climb, effectively "tossing" it onto the target. The delivery technique selected depends on factors such as desired accuracy, threats or weather conditions in the target area, and size of the bomb(s) being dropped.

Bombs come in a variety of sizes (weight) and explosive force. The MK-82 (Mark 82) is a 500 lb. bomb with almost 200 lb. of explosive. It is low-drag, meaning it has no deceleration devices to retard its descent. This limits the altitude at which it can be dropped, for the aircraft must be able to escape the blast of its own bomb. The MK-82S Snake-Eye is a MK-82 with fins which can be opened to create drag, thus slowing the bomb behind the aircraft and giving the aircraft a chance get beyond the blast pattern envelope before detonation. Similar to the MK-82S is the BSU-50, which instead of fins has an air inflatable "retarder" (AIR) resembling a small parachute to create high drag. More powerful are the MK-83 1,000 lb. and MK-84 2,000 lb. (approximately 900 lb. of explosive) low drag bombs. The latter's high drag AIR variant is the BSU-49. Finally, the BLU-109 is a 2,000 pound bomb that is designed to penetrate hardened targets.

GP bombs are just that - useful against a wide variety of targets (except the BLU-109). They are often a weapon of choice when bombing fixed facilities like buildings and power stations, cratering runways to keep aircraft from launching, or attacking vehicles, tanks, SAM sites and mobile transporters. Though other systems might actually be more precise, iron bombs are cheap and plentiful; thus, they are generally used when the limited supply of more sophisticated weapons must be preserved for select high priority targets.

Although they are guided, Guided Bomb Units GBUs, unlike AGMs, are not powered, but instead "glide" to the target. They are maneuvered by wings (which look like fins) and flaps attached to the rear of the unit that are controlled by an internal flight control system. In addition to the tail assembly at the rear, the GBU consists of a bomb and a guidance system. The guidance module is affixed to the front of the unit. As an example, the GBU 8 has an electro-optical guidance system attached to a MK-84 bomb. The GBU-10, by contrast, is a MK-84 or BLU 109 that uses laser guidance. The target is designated by a laser contained in either the delivery aircraft, another airborne source, or from a targeting team on the ground. Though the weapon is dropped using "dumb bomb" delivery techniques, when it gets close enough to the target to detect the laser, it will home in on it; the GBU-12 is its 500 lb. bomb equivalent. The GBU 24 Paveway, a laser guided MK-84/BLU-109 variant, is the weapon of choice in almost any delivery situation due to its standoff capability and options. It the best solution when an extremely low altitude delivery is required due to weather or threats. However, the GBU-24 is much more expensive than the GBU-10 or general purpose bombs.

Certain GBUs have unique uses. The GBU-15, for instance, is an F 15E system that employs either television guidance for daytime delivery or IIR for night or adverse weather conditions. In a direct delivery mode, the GBU15 is locked onto target before launch. This allows the aircraft to depart as soon as it is dropped. In the indirect mode, however, the WSO guides the GBU to the target based on the images displayed in his cockpit. Using a screen in the cockpit, the WSO guides the weapon to target. Another unique system is the GB U-27, a laser-guided 2,000 lb. weapon designed for the F-117. Finally, the GBU-28 is a nearly 5,000 lb. laser guided weapon that has the ability to penetrate 20 feet of concrete or 100 feet of dirt. Thus, it is used
against hardened targets such as command bunkers. The weapon can only be employed by the F-15E.

Cluster bomb units (CBUs) are weapons which contain a dispenser filled with bomblets. The bomblets are released at set altitudes causing them to be spread over a large area. Some explode immediately, while others have delayed fuzes. The explosive force and number of bomblets varies by type of CBU. Two early versions, the CBU 52 and CBU 58, have bomblets (220 and 650 respectively) which detonate upon impact, while the CBU 71 contains 650 bomblets that detonate randomly over a fixed time period following delivery. Typical CBU 52 and 58 targets include parked aircraft, fixed SAM sites and electronic installations, whereas the CBU 71 is especially effective against troops in the open. More complex is the CBU-87, Combined Effects Munition (CEM). It employs a mixture of fragmentary, incendiary, and armor-piercing bomblets which are effective against a multitude of targets using blast, heat, and penetration.

Some CBUs dispense mines. For example, the CBU 89 spreads either anti-tank or anti-personnel mines. The anti-tank version detonates when the mine's internal magnetic sensor detects a large metal object (or when it is disturbed). By contrast, the anti-personnel version spreads tripwires upon delivery and detonates whenever an individual activates the tripwire or the mine is disturbed. In both case, the mines self-destruct after a preset period. Another anti-tank weapon is the CBU-97, which is new and expensive. It dispenses 10 submunitions, each containing four high velocity, infrared sensing bomblets, over the target area. The 10 submunitions (components of a single weapon) separate from the CBU at a set altitude and drop by parachute. This increases the dispersal pattern and permits staggering of the release to minimize any interference they may cause each other. At a preset altitude, the descending submunitions release the four warheads, which in turn seek a target with their infrared sensors. The BL-755, with 147 armor-piercing bomblets, is also used for tank hunting. Another common system employed in the anti-tank role is the MK-20 Rockeye. Its 247 anti-tank bomblets contain a shaped charge which directs the force of the explosion forward upon detonation; by directing the force, the explosive effect is greatly multiplied.

There are a number of weapons under development which should be in the inventory in the not too distant future. The Joint Direct Attack Munition (JDAM) is being fielded in a three-phase program. In phase I, the MK-83, MK-84 and BLU-109 will be modified to be more accurate in adverse weather through addition of an INS/GPS guidance kit. Phase II will focus on the munition itself by enhancing the blast and fragmentation effect of the 500 lb. explosive. The final phase will include the development of terminal (last stage of "flight") guidance for poor weather conditions. JDAM will be carried by the F-15E, F-16 and F-117.

Also in development is the AGM-154A Joint Standoff Weapon (JSOW). Intended as a low cost standoff weapon that is day/night and adverse weather capable, it will have a high altitude range of 45+ miles and a low level range of 17 miles. There are two variants being designed. One will carry the same bomblet as the Combined Effects Munition CBU-87. The other will contain the BLU-109 concrete piercing bomb described above.

IV. THE PLANNING PROCESS
(or death by acronyms)

Now familiar with the aircraft and weapons used in fighter operations, attention can turn to the operations themselves. Step One is planning. In macro terms, planning occurs in one of two
ways - through deliberate or crisis action planning. /30/ Though judge advocates are certainly key players in the deliberate planning process, it is in crisis action planning that their mettle is truly tested. After all, the crisis planning process is designed for situations when deployment and/or employment of forces in response to an international flare-up is imminent. The event has moved from the hypothetical to the real, and getting the law wrong at this point is a failing of potentially international proportions. A plan without judge advocate input from start to finish is a plan at risk.

In a crisis, receipt of a warning order kicks off a planning process that ultimately results in an Operation Order (OPORD). The OPORD sets forth the mission, the Commander's concept of operations (how he sees the operation unfolding from start to finish), tasked units and their responsibilities, instructions on coordination between assigned units, logistics and administration, and command and control relationships. If the President decides to take military action, the Chairman of the Joint Chiefs of Staff (CJCS) will be authorized by the Secretary of Defense to issue an Execute Order. This launches the operation, which will usually be conducted by a joint task force (JTF), i.e., an organization composed of units from more than one service:

TFs are organized either functionally or by service (see figure 2). In both cases, the Joint Force Commander (JFC) will designate a Joint Force Air Component Commander (JFACC). /31/ The JFACC will flesh out a Concept of Operations - the "how to accomplish the mission" phase of planning. It is at this point that the JFC prioritizes targets, either individually or by type (target set). For instance, during Desert Storm initial high priority targets included enemy air defenses and command and control. It was only after Coalition forces enjoyed air superiority that the weight of effort shifted to Iraqi ground forces.

![Diagram of Joint Force Organization](image)

*Figure 2. Typical JTF Organization*
This highlights a second purpose of the concept of operations, phasing. In phasing, the JFACC determines the steps by which the campaign will progress. During Desert Storm the phases (broadly stated) proceeded from seizure of air superiority and disruption of command and control, to laying the groundwork for the land campaign, and finally to supporting ground operations. Of course, these phases overlapped throughout the campaign. The concept of operations also helps delineate the types of missions needed - SEAD, interdiction, close air support, etc.

Ultimately, the concept of operations results in a "Joint Air Operations Plan" (JAOP), sometimes referred to as the "air campaign plan." It incorporates those factors considered in the concept of operations: prioritization, phasing of operations, and the play of the various missions. The plan also includes a description of the situation; the "strategic concept," i.e., the overall campaign plan for deploying, employing, and sustaining air power; the command, control, and communications setup; and a description of the logistics system that will be used to support the operation.

Joint air operations plans are actually executed through Air Tasking Orders (ATO). An ATO organizes and sequences all flying missions for a particular 24-hour period. Normally developed by the JFACC and his staff, final approval of the ATO rests with the JFC. Reduced to basics, an air tasking order is the detailed game plan that sets out who is flying where and when, with whom, and for what purpose.

Building an ATO is an incredibly complex process requiring analysis of a vast array of information. For example, the average daily ATO during Operation Desert Storm tasked 3,000 sorties and was 170 pages long. Generally, ATOs are built on a 48-hour cycle. As a result, at any one time there are two in the works and another being "executed." The process begins at launch (execute) day minus 48 hours with "apportionment," the JFC's decision as to the weight of effort to be dedicated to certain types of operations or geographic areas. To make his apportionment decision, the JFC can resort to the Joint Integrated Prioritized Targeting List (JIPTL), a compilation of prioritized targets built by the JFACC's
staff based upon guidance received from the JFC's Joint Targeting Coordination Board (JTCB). These boards exists to coordinate and deconflict the desires and recommendations of commanders, all of whom are competing for finite resources. The end result is a JFC apportionment decision expressed in either percentages (e.g., 50% close air support) or priority (e.g., 1st priority is close air support). An apportionment decision is valid until the JFC determines it requires revision, e.g., after air supremacy is achieved and air operations pass into the next phase. Once apportionment is complete, a Master Attack Plan (MAP) is built. This marks the first step in the actual mission planning cycle. The MAP sets out the sequencing of operations, targets, and the type aircraft that will be used over a 24-hour period. Thus, it is the foundation for the Air Tasking Order (ATO), the most important planning document from the perspective of a flying unit.

Based on the Master Attack Plan and the JFC's apportionment decision, the JFACC now engages in a process labeled "allocation." Allocation involves matching available sorties (in a macro sense) to the missions they are to support. The ATO continues the process of refining the game plan into its definitive form. Most importantly, it is here that the planners determine which specific units will cover which targets. These decisions are often driven by the need to build a "package" (i.e., types and numbers of missions and aircraft) to achieve a particular objective. A package tasked with the destruction of an enemy command and control facility, for instance, might include various aircraft to strike the target, provide cover against aerial threats, attack ground based defenses that threaten the strike aircraft, jam enemy radar, provide airborne command and control, and refuel those participating. Factors considered in deciding on package composition range from enemy defenses and topography to weather and desired result (e.g., destroyed, neutralized, neutralized for a specific period, etc.).

In addition to timing and target location data, the ATO sets forth communications frequencies and IFF (identify friend or foe) mode squawks (codes). In many cases, it also includes a suggested weapons load. Further, airspace control and air defense information can be contained in an ATO.

At times, subordinate flying units may be granted the authority to either decide upon, or change, ATO directions which do not impact other units. One example might be weapons configurations on aircraft. However, certain aspects of the ATO cannot be changed absent authorization from the JTF commander. For instance, the time on target (TOT) is generally firm because an alteration of the fighter TOT will cause the timing of the myriad supporting missions to shift as well. It may also result in endangering aircraft from other packages operating in the area due to uncoordinated bomb blasts (frag deconfliction).

After approval, the ATO is transmitted in either message or computer format to all affected organizations and units. This should occur not later than 12 hours prior to launch of the first mission. Obviously, tasked flying units receive a copy of the ATO. So too do entities responsible for controlling airspace and aircraft. Such agencies may either be ground based (e.g., an aerial tactical operations center - ATOC ) or airborne (e.g., an airborne warning and control system AWACS). Additionally, air defense units require ATOs to avoid friendly fire incidents, whether through an inadvertent "blue on blue" aerial intercept or mistaken surface to air missile (SAM) firing.
In addition to the ATO, the JFACC may issue Special Instructions (SPINS). A SPIN sets forth operational constraints or procedures. Search and rescue information is often contained in SPINS, as is any required routing of missions (ingress and egress) to provide for safe passage through friendly air defense nets or to provide for deconfliction between missions and target areas. They may also establish no-fly areas or highlight special information regarding potential collateral damage, such as proximity of targets to hospitals, religious centers, cultural landmarks, and the like. SPINS can be "long" (in effect until rescinded) or issued daily. If JFACC operations are spread over multiple airfields, local SPINS can be issued by the commander at a specific location setting forth procedures in effect there. Examples might include directives on where to park or where to arm aircraft weapons.

As noted, the flying unit (usually a wing) receives the ATO electronically. Immediately on receipt, the group and squadron commanders will convene to look at the wing's overall tasking. It is also at this point that "mission (in actuality package) commanders" will be selected. Usually, the ATO indicates which mission numbers the package commander will fly. However, it is still necessary to determine who that individual will actually be. In many cases, the ATO may involve several "goes" (the sequenced launch of groups of aircraft comprising multiple packages) throughout the day. This occurs as aircraft land (recover), are rearmed and refueled, and then are launched again (turned).

The actual nuts and bolts planning at the wing level is generally performed by a Mission Planning Cell (MPC). Members of the cell typically come from the operational support squadron, the wing operations group staff, or the flying squadrons. The mission commander is present at the outset to get the group moving in his intended direction. He makes such determinations as routing to and from the target (ingress and egress) and the sequence of attack by the various aircraft. The mission commander also makes critical placement and timing decisions. It is his call, for example, as to where SEAD assets will be located to suppress enemy defenses and when and where air-to-air aircraft will enter the area to clear it of enemy planes (the fighter sweep). After providing this broad guidance, he will usually retire to avoid "busting" crew rest requirements (12 hours).

At this point, the weapons officers (typically two or three Fighter Weapons School graduates) take over to do much of the nuts-and-bolts weaponeering. Weaponeering involves ensuring selected weapons are appropriate to the target and calculating where they need to strike (aimpoint) to achieve the best results. These officers will also determine the best attack tactics to employ given the type of weapon to be used, the target area defenses, and the requirement to minimize collateral damage. Throughout the process, the MPC receives weather updates and intelligence on the threat. The team, assisted by targeting intelligence experts, then translates their game plan for executing the ATO into combat mission folders (CMFs). The CMF is taken by the pilot into the cockpit to guide him through the mission. Among its contents are a route map, line up card (i.e., the list of pilots and aircraft in the flight), communications frequencies, weapons delivery data, search and rescue (SAR) information, and other items unique to each aircraft.

The MPC works day and night to have the mission planning completed by the time the crews come out of crew rest. When they do, there are one to two hours to study the mission and double check the work that has been done by the MPC. This phase usually begins with a mass brief of all those in a "go" that outlines the overall operation and how the various packages fit together, describes who is performing what function, sets call signs and other necessary communications information, and reminds crews of airfield operating procedures (and any changes thereto). Wing, group, and squadron commanders
are usually present, as are representatives from maintenance, air traffic control, weather, intelligence, security police, and ground controllers. The goal is to address those issues common to the flying operation as a whole.

Once completed, the crews break into packages, flights (those flying a particular mission number), or groups of those performing similar functions (e.g., air defense). It is here that any last minute fine tuning occurs with others in, or in support of, your flight. This is also the time when secure telephone, "e-mail," or "chat" coordination takes place with "players" in or supporting your package from other bases or locations. These players typically include pilots and aircrews tasked with fighter sweep, CAP, jammers, SEAR, tankers, AWACS, JSTARS, and so forth. Topics can range from coordinating specific tactics to setting the flying formations that will be used. Once this process is completed, the crews are prepared to launch.

V. THE ART AND SCIENCE OF FLYING COMBAT MISSIONS

"Know your client." There is no more basic truism in the successful practice of law. It is a truism no less apropos in the practice of operational law. If you don't know what the fighter pilot is thinking about as he's executing the mission, it will be incredibly difficult to help him work through the self defense ROE, develop tactics that will minimize collateral damage and incidental injury, or even pick viable, and legal, targets.

Flying in a combat strike package like the one which will be described below is not unlike a pass-fail final examination. It requires long and constant training, extensive preparation, and an ability to anticipate the unexpected. In this section, we will describe what is on the pilot's mind as he prepares and executes his mission. Of course, the actual flying of a mission varies depending on an array of factors: mission type, aircraft used, supporting aircraft available, enemy defenses, weather, terrain, whether the mission is flown at day or night,
distance to target, and so forth. That said, there are certain constants, five of which are cardinal. /33/

Five Cardinal Rules of Flying

1) Maintain aircraft control;
2) Never hit the ground (or anything attached to it);
3) Never hit anything in the air;
4) Never run out of fuel; and
5) Never let anything shot from the ground or air hit your airplane.

A. Basics

Formation flying - keeping in position, "checking six" (watching out for threats coming up behind his or his wingman's aircraft), and "checking twelve for rocks" (making sure that he does not become so preoccupied that he runs into the ground) - is at the heart of what a fighter pilot does. On combat sorties, though, the act of simply "flying" the aircraft has to be second nature because the pilot's mental activity must be focused on gaining and maintaining "situational awareness" (SA) of the mission and what is happening around him. Should he fail to do so, the pilot risks becoming "task saturated" and, as a result, a combat statistic. Therefore, while flying in large formations, or at least as part of a large, coordinated force package, pilots must carefully apportion their attention among the complexities of communications, navigation, enemy threats, and his ultimate task - locating the target and precisely delivering his weapons.

B. Communications and IFF

At least until the "push" (discussed below), communications present a constant challenge as flights rapidly change frequencies to talk with various controlling and informational agencies. Complicating matters is the need to regularly use "secure" (scrambled) modes and the "Have Quick" (jam-resistant frequency hopping) system to keep the enemy from becoming aware of your intentions. Needless to say, getting everyone up on their designated frequencies is a task that requires repeated practice.

Perhaps even more critical is the importance of determining when and where to "squawk" (transmit) the IFF (Identify Friend or Foe) codes and what the proper codes are at any given time. The IFF system provides an electronic means of telling friendly ground agencies and aircraft who you are. For example, air supremacy aircraft such as the F-15 have the ability to "interrogate" the IFF systems of other aircraft to determine their identity. As might be expected, a "successful" interrogation is a major factor in their determination of how to apply the Rules of Engagement (ROE). Different IFF modes (there are four) mean different things. Mode I is a code, usually designated in the ATO, that is often used to signal friendly air superiority forces that you are a "friendly." By contrast, Mode II identifies your specific aircraft to ground control (GCI) or AWACS controllers./34/ Mode III is the identification and tracking code - normally issued by the controlling agency, such as air traffic control (ATC) or AWACS - that civilian and military aircraft use for flight separation. It provides aircraft position and, when enabled, altitude data. Finally, Mode IV is a classified and controlled code that identifies you as a friendly force; it is set by maintenance prior to flight, as is Mode II. The pilot can set Modes I and III inflight./35/ Understandably, failing to enter the proper IFF code can be an unforgiving error in a combat environment.

C. Navigation
Navigation and timing are the keys to achieving the hoped-for synergistic effect of a well-synchronized strike package. That said, a number of factors can foil synchronization: takeoff delays, refueling problems, difficulty rejoining the flight after tanking, and encountering weather or threats (airborne or surface) along the route. Hopefully, the strike plan has accounted for the need to be able to adapt to delays. Since that is not always so, some delays will necessitate a timing adjustment (a complicated proposition following launch) or possibly even cancellation of the attack. Fortunately, many of the newer model fighters are equipped with excellent systems (computers, inertial navigation systems, or even global positioning systems) to help the pilot get back on time and on track after a problem pops up.

Also problematic are night operations; some units are better equipped and trained to operate at night than others. For example, certain fighters (Block 40 F-16s and F-15E Strike Eagles) have infrared navigation and targeting systems (LANTIRN) that are specifically designed to ease night operations. Pilots in these and certain other aircraft may use night vision goggles (NVGs) to fly at night, even though NVGs provide less than perfect vision and pose their own unique problems for pilots in flight.

D. Air-to-Air Threats

Modern fighters are superbly equipped to detect and engage enemy fighters. Given the added capabilities of the AWACS aircraft and ground control agencies, there should be little cause for surprise, and even less for failure to accomplish a successful intercept and engagement. That said, there are still a number of ways the fighter pilot can find himself in trouble.

The successful "multi-bogey" close-in dogfight is a well-rehearsed communication and flying drill based on an understanding of who has "engaged" which opponent, and who is "supporting" whom in the individual dogfights. This requires complex intra and inter-flight radar/visual sorting and targeting. The difficulty of accomplishing these tasks increases exponentially when the fight "gets into the phone booth," i.e., becomes an overlapping array of close-in engagements in the same airspace. It is here that the fighter pilot's basic fighter maneuver (BFM) flying skills are put to the test. This is the essence of the fighter pilot's art and science. Once victory is achieved, or determined to be unachievable prior to "bingo fuel" (the fuel necessary to make it home), the fighters "bug out" (leave) for "home plate" (their base).

Of course, a major concern of fighter pilots is getting "shot in the lips," or hit in the face by a missile fired by an enemy before meeting at "the merge"; thus, they strive to take the first shot whenever possible. Obviously, if the ROE require a "visual" identification in order to shoot, the pilot may be at significant risk of getting shot first. As a result, much effort is going into research, development, and integration of "combat ID" systems that enable pilots to positively identify friendly and enemy aircraft beyond the range of the enemy's weapons.

Not surprisingly, compliance with the Rules of Engagement (ROE) is often a significant cause of concern (though it is the best way to contain conflict within prescribed political limits). For example, while the aircraft systems may indicate the presence of an enemy aircraft (bandit) many miles away, the ROE might require the pilot to visually confirm the contact as hostile prior to engaging it. Therefore, despite advanced systems which give the pilot the ability to detect and engage an opponent from over 30 miles away, pilots may have to withhold their shots until they are well inside the enemy's missile engagement zone - perhaps even until one is heading their way. That said, the rules are usually logical, for the alternative is even less tenable - mistakenly engaging a friendly aircraft. Fratricide is a particular concern in a dense combat environment.
where hundreds of aircraft are up at once. In such cases, the ability to reliably distinguish friend from foe with the aircraft's long range detection systems is marginal at best.

E. Surface Threats

Somewhere enroute to or from the target area, the flight is likely to encounter surface-to-air missiles (SAMs), anti-aircraft guns (AAA), or small arms fire. Good intelligence and route planning can often minimize these ground-based threats (or highlight the need to task other assets against them in advance of the ingress). Because many SAMs and all AAA are mobile or portable, the best approach is to stay outside of their threat envelope, i.e., at a distance or altitude they cannot reach. However, as this tactic is neither 100% reliable nor always conducive to mission accomplishment, the pilot must be constantly prepared to take appropriate defensive actions if a threat does surface.

For radar-guided threats, he may get an audible indication on his radar warning receiver, or "RWR" (pronounced "raw"), that he is being "painted," or detected. Of course, a pilot may also detect the threat visually. In response to a SAM launch, he may "jink" (a hard turn) or perform other similarly choreographed maneuvers. This will usually be accompanied by the use of expendable decoys, such as "chaff" (metallic filaments that cloud a radar by providing returns) or "flares" (to distract a heat seeking missile). The precise response differs depending on the fighter's proximity to target and the type of missile or gun encountered. In the target area, weapons delivery may take priority over self-defense: After all, if a pilot or aircrew doesn't concentrate on weapons delivery, the whole mission may be wasted. It is a basic cost-benefit risk assessment.

F. Delivering Weapons

As briefly mentioned earlier, pilots (and/or WSOs in Strike Eagles) can drop bombs in a number of ways. They can be eyeballed (released at a precomputed location), radared, lasered, IR'd, IIR'd, or aided by GPS/INS. Depending on the method selected, the aircraft might be climbing, diving or flying straight and level at weapons release. In most cases, the process involves first locating the target and positively identifying it, either visually or by using some radar or video display. Once located, a "piper" (target indicator) is lined up on the target. This helps the pilot maneuver his aircraft to the precise weapons release point, where he "mashes" the appropriate switches) to release his ordnance. Throughout this process, Murphy is often hard at work, particularly for young (or exceptionally old) pilots.

There is always a risk of "fragging" yourself with your own bomb, i.e., releasing at too low of an altitude and then flying through the bomb's "frag (fragmentation) pattern." While possible, this is a common problem for the delivery aircraft; indeed, avoiding your own frag is a basic component of fighter air-to-ground training. However, it is a significant problem with multiple aircraft in a common target area, all of whom, in the fog and friction of war, must ensure sufficient vertical, horizontal, or time separation from everyone else's bombs.

Another problem with dropping a bomb too low or otherwise out of parameters is that it might not be able to properly arm itself due to built-in safety features, and thereby malfunction - a "dud" results. While duds are seldom dangerous to anyone, the mission fails. This could, depending on the target, increase the risk to other aircraft in the package or necessitate a reattack at a later time.

Finally, there is a danger of misidentifying a surface target. Therefore, pilots devote as much time and preparation as possible to studying target area photos, maps, and descriptions. Additionally, each target run is briefed in detail prior to take-off to highlight potential identification problems and ensure the pilot knows exactly what to look for as he attacks. Nonetheless, trucks, tanks, and even small
buildings or infrastructure nodes may appear no larger than a small "dot" when viewed from typical bomb release ranges - somewhere between one and four miles away. While modern aircraft and navigation systems are reaching an impressive degree of accuracy, they are not, despite CNN film footage from the Gulf War, fail safe; the systems neither always work, nor do the munitions always properly guide. Collateral damage is still a facet of conflict we cannot eliminate completely.

G. Recovery to Landing

Beyond the target lies the egress point and the route back home. Basically, the operation is reversed, e.g., by conducting an outbound sweep and sanitization along the egress route. Supporting aircraft also head home unless required to support other packages in the vicinity. The resulting congestion in the home base's air traffic pattern is not unlike driving on the DC Beltway, with the exception that everyone returning from a combat mission is probably low on fuel. This places very definitive limits on delays in landing. While running out of gas on the Beltway would be an embarrassing nuisance, doing the same while airborne is an infinitely more stressful event. Complicating matters are three conditions which can significantly impair the base's ability to recover aircraft quickly: heavy weather, a runway closed due to battle damage (or currently under attack), or an aircraft emergency. When these occur, a divert to another base becomes necessary if the recovering aircraft have insufficient fuel to orbit until the airfield is reopened. Once recovery is complete, the entire process starts over, as both the aircraft and pilot are prepared for another "go" - very likely one of several that day.

VI. A HYPOTHETICAL MISSION

In this final section, we will put all the pieces together through the use of a hypothetical mission designed to illustrate typical key events and considerations. Though purely fictional, we hope that it gives non-flyers a feel for the employment of the aircraft and weapons described earlier, as well as the execution of a typical tasking. The JAG who understands the how and why of this mission is ready for fighter based operational law taskings.

A. The Mission

Our hypothetical scenario occurs on the Jagmanian Peninsula. Hostilities broke out after military forces of North Jagmania attacked South Jagmanian outposts along the border between the two adversaries. The UN condemned the action and the Security Council has authorized member States to use "all necessary means" to expel the North Jagmamans. At the moment, the United States has the lion's share of military force capable of immediate response in the region, primarily air assets at three locations: permanent bases located in South Jagmania pursuant to a mutual defense pact, naval air afloat, and aircraft stationed in other countries of the region, all of which have granted authorization for US forces to conduct combat operations from their territory.

It is early in the conflict and North Jagmanian forces have not penetrated deeply into friendly territory. Intelligence estimates indicate that the North Jagmanians possess an effective SAM network and a potent air force, and Coalition forces do not yet enjoy air superiority. Therefore, the JFACC's immediate goal is to seize control of the air. In order to do so, a large percentage of allied assets have been tasked as offensive counter-air missions, or are being flown in support of them.

Our particular package of missions is directed against an airfield approximately 150 miles north of the forward edge of the battle area (FEBA). The key target sets are the aircraft maintenance facilities/warehouses and the weapons storage area (WSA - "bomb dump"). Additionally, the package will be striking an SA-6 (short range radar-guided surface-to-air
missile) site and a 57mm anti-aircraft gun that together provide point defense of the airfield. This should suppress target area defenses while the primary objectives are attacked; it will also facilitate any restrike of the targets that may prove necessary.

The entire mission will be flown in a heavy threat environment. Tasked aircraft will pass through the threat envelope of an SA-5 long-range radar guided missile, as well as medium range radar guided SA-2s and SA-3s: Other ground-based threats include numerous portable short range electro-optical and infrared SAMs (often shoulder launched), and small arms fire from ground forces.

North Jagmanian MiG-23 Floggers and MiG-29 Fulcrums (in addition to a variety of older, less capable aircraft) comprise the aerial threat. The Flogger is a small, difficult to see interceptor with late 1960s-early 1970s era technology, whereas the newer Fulcrum has 1980s era capabilities not dissimilar those of the F-16 or F/A-18. Though a dual-use aircraft, its primary role is aerial combat. Both the Flogger and Fulcrum are armed with infrared and radar guided air-to-air missiles and internal guns.

### B. The Package

Given the threat and the distance to be traveled into enemy territory, a fairly robust package has been assembled; a total of 49 aircraft are either involved in the strike or in supporting it. Tasked against the maintenance facilities and the warehouses are two four-ship flights of F-16s flying out of Happy Air Base, each armed with two MK-84 2,000 lb. general purpose bombs. A third four-ship of F-16s from Glad AB will attack the 57mm AAA and the SA-6 SAM site with CBU-87 CEMs. For self-defense (or enemy targets of opportunity), each of the F-16s is configured with two AIM 120 AMRAAMs, two AIM-9 Sidewinders, and the 20mm gun. Because the weapons storage area is hardened, thereby requiring greater accuracy to destroy, it will be attacked by a four-ship of F-15E Strike Eagles, deployed to the theater from Coldcountry AFB, and a four-ship of Marine F/A (fighter/attack)-18Ds based at Semper Marine Corps Air Station (MCAS). In order to penetrate the WSA, each F-15E will carry four GBU-10s, while the F/A-18s will be armed with six BSU-50s per aircraft. Air-to-air capabilities for the F-15s include two AIM 7 Sparrows and four Sidewinders; the F/A-18s will carry two of each missile. Completing the OCA contingent will be four F16s and four F-5s of the South Jagmanian Air Force. Their mission is to attack aircraft parked in the open and bomb taxiway chokepoints, i.e., locations whose destruction can block airfield operations. The South Jagmanians will be armed with six MK-82 500 lb. iron bombs and two AIM-9s.

<table>
<thead>
<tr>
<th>Callsign</th>
<th># &amp; Type A/C Location</th>
<th>Mission</th>
<th>Munitions</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viper 01</td>
<td>4 F-16 Happy AB</td>
<td>OCA Strike</td>
<td>Mk 84</td>
<td>Mx Facilities</td>
</tr>
<tr>
<td>Viper 11</td>
<td>4 F-16 Happy AB</td>
<td>OCA Strike</td>
<td>Mk 84</td>
<td>Warehouse</td>
</tr>
<tr>
<td>Falcon 01</td>
<td>4 F-16 Glad AB</td>
<td>SEAD</td>
<td>CBU-87</td>
<td>57mm, SA-6</td>
</tr>
<tr>
<td>Striker 01</td>
<td>4 F-15E Forward AB</td>
<td>OCA Strike</td>
<td>GBU-10</td>
<td>WSA</td>
</tr>
<tr>
<td>Hornet 01</td>
<td>4 F/A-18 Semper MCAS</td>
<td>OCA Strike</td>
<td>BSU-50</td>
<td>WSA</td>
</tr>
<tr>
<td>Pakman 01</td>
<td>4 F-16 Jagman AB</td>
<td>OCA Strike</td>
<td>Mk-82</td>
<td>Acft in Open</td>
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<tr>
<td>Landy 01</td>
<td>4 F-5 Jagman AB</td>
<td>OCA Strike</td>
<td>Mk-82</td>
<td>Taxiways</td>
</tr>
<tr>
<td>Weasel 01</td>
<td>4 F-16 CJ Sea fog AB</td>
<td>SEAD</td>
<td>AGM-88</td>
<td>A/R</td>
</tr>
<tr>
<td>Shooter 01</td>
<td>4F-15 Tally Ho AB</td>
<td>Sweep</td>
<td>AIM-x</td>
<td>A/R</td>
</tr>
<tr>
<td>Longbow 01</td>
<td>4F-15 Tally Ho AB</td>
<td>Sweep</td>
<td>AIM-x</td>
<td>A/R</td>
</tr>
<tr>
<td>Zapper 01</td>
<td>2 EA-6B USS Unobtrusive</td>
<td>ESM/SEAD</td>
<td>EW/AGM-88</td>
<td>A/R</td>
</tr>
<tr>
<td>Exxon 01</td>
<td>2 KC-10 Snorkle AB</td>
<td>AAR</td>
<td>JP8</td>
<td>-</td>
</tr>
<tr>
<td>Arco 01</td>
<td>4 KC-135 Snorkle AB</td>
<td>AAR</td>
<td>JP8</td>
<td>-</td>
</tr>
<tr>
<td>Cluebird 01</td>
<td>1 E-3B Snorkle AB</td>
<td>AWACS</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
The support portion of the package is equally impressive. OCA "sweep" (see below) missions will be handled by two four-ship flights of F15Cs deployed from Snorkle AB. Each Eagle's air-to-air missile complement will include two AMRAAMs, two AIM 7 Sparrows and four AIM-9 Sidewinders. Part of the SEAD support is a four-ship of F-16s from Sea fog AB, each with two AGM-88 HARMs. As with the F-16s above, they will also have a full complement of air-to-air missiles, enabling them to assist the F 15Cs in providing air cover for the package as necessary. Two EA-6B Prowlers will launch from the USS Unobtrusive, a Navy carrier located off the coast of Southern Jagmania, to provide electronic countermeasures (jamming) capability to the package. Tanker support will come from two KC-10 Extenders and four KC-135 Stratotankers, also based out of Snorkle AB. A single AWACS is tasked with battle management.

C. Concept of Operations

First to launch are the tankers and the AWACS. The tankers will fly to a point off the east coast of South Jagmania where an orbit will be established. The orbit point was selected because it is outside of any North Jagmanian threat envelope, yet close enough to the target area to provide the fighters plenty of fuel as they ingress. This is essential, for should the fighters become involved in any extended air-to-air engagements, they could burn far more fuel than planned. Planners chose a combination of KC-10s and KC-135s because while 135s are more numerous, only the KC-10s can refuel the Marine aircraft. The ATO sets forth which aircraft take which tanker. Depending on fuel availability, the tankers may refuel missions other than those assembled for our package.

All aircraft in the package will join up on the tanker and refuel (except the South Jagmanian fighters, which generally do not refuel while airborne) before proceeding to push points located slightly further north and east off the South Jagmanian coast. Push points are preset locations and altitudes where the various components of the package orbit while awaiting their specific time to start (push) toward their targets (ingress). This coordinated approach is necessary because the attacks are synchronized by location, approach axis, effects, and time. While enroute to the push point, each flight commander will check in with the package commander. This ensures everyone is there, on time, operating on the right frequency, etc. In the event all is not proceeding as planned (e.g., if a flight is late coming off the tanker), the package commander may have to make adjustments, such as slipping everyone's assigned time over-target (TOT) or, in rare cases, aborting the mission.

To develop a "picture" of the threats and to furnish command and control, not only for this package, but for others across the day, the AWACS will already be in orbit before the launch of the first fighter. In this particular case, the orbit is over central South Jagmanian territory (a relatively secure location) for an eight hour window. All of our aircraft will talk to AWACS up to the push point to acquire a general sense of what AWACS is seeing. On board the AWACS there are multiple mission controllers (under the direction of a mission director) whose responsibilities have been divided functionally. Thus, air-to-air mission commanders talk primarily with those controllers responsible for monitoring the air-to-air picture, ground attack mission commanders will be in touch with controllers tasked with supporting them, and so forth. This division of labor is necessary because different missions require different types and quantities of information.

As the flights begin ingress from the push point, all aircraft switch their frequency to the appropriate ground or air (AWACS) controller. Even though they are all now tied into a specific controller's frequency, the information passed to the flight remains general in nature, for the controller
is occupied with working multiple missions or packages simultaneously. It is only when the air to
ground flights arrive in the immediate vicinity of the target, interceptors engage, or an aircraft gets in
trouble that controllers provide an aircraft specific-"tactical" picture.

First to "push North" from the push point are the SEAD four-ship of F 16CJ "wild weasels" and
one flight of four F-15Cs. The F-16s will move in and assume a "sniff and shoot" orbit at a
predetermined location. A number of factors go into selection of the position. For instance, the orbit
is generally
outside the immediate threat envelope of enemy SAMs, but close enough to them to detect (sniff) when
their search or fire control radars are activated. If that happens, the weasels need to be positioned to
quickly fire an AGM-88 HARM (shoot), which homes in on the SAM site's radar signal. Meanwhile,
the F-15s will sweep the area of operations to identify and engage any enemy aircraft, but in the
process attempt to avoid potential threats by flying around SAM threat rings or high enough to avoid
them if fired. The second flight of F-15Cs remain in an off-shore combat air patrol (CAP) orbit ready to
engage enemy aircraft if any rise to challenge the package.

EA-6Bs will precede the main strike portion of the package in order to provide jamming
support to cover (hide) its ingress. The next flight to push north consists of the F-16s and South
Jagmanian aircraft tasked against the airfield's air defenses (SA-6, 57 mm AAA, and aircraft) and
chokepoints. This occurs very soon (a couple of minutes) after the sweep and is time-coordinated
with the weasel and jamming operations. The objective is to render target area defenses impotent as the
core onslaught begins.

With enemy defenses down, the F-16s will attack the airfield's maintenance and warehouse
facilities. Once this phase is complete, the F-15Es and F/A18s will begin their attack on the WSA. This
occurs after the other attacks are complete because great accuracy is needed to strike a hardened
facility. Such accuracy depends on sufficient time to "lase" (designate) the target for the laser guided
weapons. Remaining stable during weapons guidance makes the flight path of the designating aircraft
somewhat predictable, which is not conducive to survival if under fire.

Once complete, the attack formations and the air-to-air aircraft will head home. Whether they "hit the
tankers" again on the outbound leg of the mission depends on their distance from home base. The
EA-6Bs may stay in the area to provided support to other in-bound packages; so too, in certain cases,
might the F-15s providing sweep and CAP. If the latter do so, they will likely refuel before resuming
their orbit. The tankers will maintain their orbit as long as needed providing they still have fuel, and the
AWACS, as noted, remains airborne for an eight hour block. Upon return to their bases, the F-16s
and F-15s will be turned, i.e., prepared for another sortie and launched. /36/ Ultimately, the air portion
of the JFC's campaign proves successful and North Jagmanian forces withdraw back over the border in
defeat.
Figure 6. Deep Interdiction

Figure 7. Close Air Support
VII. CONCLUDING THOUGHTS

By now your head is surely spinning. Yet, you must understand that, Nevertheless, if you do not understand the basics of fighter ops, you will very like law, the flying game seems complex ... because it is complex. quickly find yourself marginalized in the operational environment. And given the complexity of international relations in the 1990s and beyond, every judge advocate must expect to be called on to provide operational law advice at some point in his or her career. Whether it be Northern Watch, Southern Watch or some unforeseen operation on the horizon, your ability to do so will be directly dependent on your understanding of how we fly and fight. That makes you obligated to do everything you can to become a participant, not a spectator. Good luck and aim high!

APPENDIX I

SAMPLE COMBAT MISSION PLANNING CHECKLIST /37/

I. COLLECT INFORMATION

A. Current readiness posture (alert state)
B. Frag
   1. Mission number
   2. Target or mission objective
   3. Force structure
   4. Ordnance
   5. Routing factors
      a. AAR
      b. Rendezvous point
      c. CAP points
      d. Mandatory penetration points, altitudes
      e. Chaff corridors
   6. TOT/vulnerability period
   7. Frequencies
   8. IFF procedures
   9. Coordination/points of contact
C. Read file/SPINS (ROE)
D. Intelligence
   1. Home base threats
   2. Location of the FLOT/FEBA
   3. Location of suspected/known SAMs and AAA
   4. Fighter threat, GCI capability
   5. Comm jam
   6. E & E procedures
   7. Location of friendlies
   8. Enemy capabilities
      a. Readiness
      b. Aggressiveness
      c. Order of battle, tactics
E. Your resources
1. Aircraft - number and configurations
2. Munitions and fuzes
3. Pilots:
   a. Number, experience, proficiency
   b. Crew rest
4. Time available for planning
5. Ground support
   a. Personnel, AGE
   b. Runways (barriers)
   c. ATC facilities
6. GCI/AWACS
F. Mission environment
   1. Day/night
   2. Weather
      a. Cloud cover
      b. Visibility (haze)
      c. Sun angle
      d. Contrails
   3. Terrain
      a. Type
      b. Ground cover
G. Deconflict with other forces
H. Firm up timing at control points (takeoff, AAR, jump-off)

II. CREATE ADMINISTRATIVE PLAN
A. Ground ops
   1. Life support considerations (exposure suit)
   2. Times - brief, step, start, takeoff
   3. Taxi/ marshaling (comm out?)
   4. Aborts/spares
B. Airborne ops
   1. Takeoff sequence (takeoff data, weight)
   2. Join up
   3. Departure/recovery
      a. Routing
      b. Airspeed
      c. Altitudes
      d. Formations
      e. Systems checks (switches)
      f. R/T
      g. Threats and contours
   4. Rendezvous with escorts
   5. AAR data (pre/post strike)
   6. Joker/bingo fuels (for target, AAR, alternate fields)
   7. Go/no-go decisions
a. Systems
b. Forces
c. Weather
8. Code words (fuels, abort, IFE, chattermark, freq)
9. Inflight reports
10. Recall/divert procedures
11. Air aborts
12. Emergency fields
13. SAR

III. CREATE TACTICAL PLAN

A. Target Destruction
1. Target vulnerabilities
   2. Appropriate munitions, fuzes
      a. types and numbers (JMEM)
      b. fuze settings
3. Impact angle and spacing
4. Delivery mode
5. Attack axis
6. Flight frag deconfliction
7. Weaponeering (complete worksheet to get release altitude that will ensure fuze arming and safe escape)
8. Delivery parameters
9. Backup delivery, parameters

B. Target area tactics
1. Select definable IP
2. IP-to-target routing (threat avoidance, DR)
3. Aimpoints (first impacts downwind)
4. Attack plan
   a. Airspeeds (use of burner)
   b. Formations
   c. Sequence, timing
5. Delivery considerations
   a. Employment limits
   b. Techniques
6. Flight reform after delivery
   a. Airspeed
   b. Maneuvering, calls
   c. Visual pickup point
7. Timing considerations
8. Use of support forces
9. Threats - counters, ECM/ECCM
10. Contingency plans
    a. Missed IP or missed target (reattack)
    b. Battle damage
    c. No release (dump target, higher fuel flows)

C. Ingress/ Egress tactics
1. Routing (deconflict from other forces)
2. Altitudes (deconflict from other forces)
3. Airspeeds (timing)
4. Formations
5. Responsibilities
a. Navigation
b. Formation
c. Visual, radar lockout
d. R/T (discipline)

6. Counters/reactions

a. Comm jam (chattermark freq)
b. Threats
   1) Flight maneuvering
   2. Use of RWR, ECM
   3) Defensive ordinance (switches)
c. Store limitations
   1) Carriage
   2) Jettison

IV. COORDINATE WITH

A. Base units
   1. Maintenance and weapons
   2. Intel
   3. Weather (brief)
   4. Air base defenses
   5. Command post
   6. ATC facilities
B. Off-base units
   1. GCI/AWACS
   2. Tankers
   3. Escort
   4. Supporting units (weasels, FAC)
   5. SAM forces

V. ASSEMBLE PILOTS AND COMPLETE MISSION PLANNING

A. Assign duties to accomplish
   1. Map preparation and weaponeering
   2. Form 70 or equivalent /39/
   3. Photo study
   4. E & E materials
   5. Authenticators

B. Allow adequate time for route and target area study

C. "What if" the plan -
   1. Aborts, IFEs
   2. Weather
   3. Takeoff delays (single runway)
   4. Late or no-shows
      a. Tanker
      b. AWACS
      c. Escort
      d. CAP
      e. FAC
   5. Comm out plan

VI. BRIEFING

VII. POST-MISSION DUTIES
APPENDIX II
ABBREVIATIONS AND ACRONYMS

AAA ..................................... anti-aircraft artillery
AAR ........................................ air-to-air refueling
ABCCC ...................................... airborne battlefield command and control center
AGE ........................................ aircraft ground equipment
AGL ......................................... above ground level
AGM ....................................... air-to-ground missile
AI ............................................ air interdiction
AIM ......................................... air intercept missile
AMRAAM ................................ advanced medium range air-to-air missile
ATC .......................................... air traffic control
ATO .......................................... air taking order
AWACS .................................... airborne warning and control system
BDA ......................................... battle damage assessment
BFM ......................................... basic fighter maneuver
BVR .......................................... beyond visual range
CAS ......................................... close air support
CBU .......................................... cluster bomb unit
CEP .......................................... circular error probable
CSAR ....................................... combat search and rescue
DNIF ....................................... duty not involving flying (temporarily grounded, usually medically)
DR ........................................... dead reckoning
ECM/ESM/EW  electronic countermeasures/electronic support measures/electronic warfare
ECCM ........................................ electronic counter-counter measures
E&E .......................................... escape and evasion
EO ........................................... electro-optical
FAC .......................................... forward air controller
FEBA ....................................... forward edge of the battle area
FLIR ......................................... forward looking infrared
FLOT ......................................... forward line of own troops
FRAG ...................................... fragmentation (also portion of the ATO)
FSCL ....................................... fire support coordination line
GBU .......................................... guided bomb unit
GCI .......................................... ground controlled intercept
GPS .......................................... global positioning system
IFE .......................................... inflight emergency
INS ......................................... inertial navigation system/set
IP ............................................. initial point or instructor pilot
IR/IIR ....................................... infrared/imaging infrared
JMEM ...................................... Joint Munitions Employment Manual
LANTIRN .................................. low altitude navigation and targeting infrared night
LAT/LONG .................................. latitude/longitude
LOC ......................................... line of communication
MPC ......................................... mission planning cell
NM ........................................... nautical miles
Pk ............................................ probability of kill
ROE .......................................... rules of engagement
R/T .......................................... receive/transmit (communicate)
RWR ........................................ radar warning receiver
APPENDIX III
GLOSSARY

ATTACK RESTRICTION - Ingress, ordnance delivery, or egress restrictions depending on situation, i.e., threats, weather, terrain, training rules, etc.
CAP - Combat Air Patrol; Refers to either a specific phase of an air-to-air mission or the geographic location of the fighter's surveillance orbit during an air-to-air mission prior to committing against a threat.
CHAFF - A passive form of electronic countermeasures consisting of expendable metallic fragments used to deceive airborne or ground based radar.
CLOCK CODE - Description of position using the aircraft as a reference; the nose is twelve o-clock, the tail in six o'clock.
COMM JAMMING - Attempt to interrupt communications.
ELEMENT - A flight of two aircraft.
ENGAGEMENT - Maneuvers by opposing aircraft attempting to achieve/prevent weapons firing positions.
HOSTILE - A contact positively identified as enemy in accordance with command rules of engagement.
HUNTER-KILLER - Flight mix of Wild Weasel and strike aircraft employed in SEAD operations.
INTERCEPT - A phase of an air-to-air mission between the commit and engagement. To cut off an enemy's advance.
JINKING - Aircraft maneuvers designed to change the flight path of the aircraft in all planes at random intervals (usually to negate a gun attack).
LETHAL ENVELOPE - The envelope within which the parameters can be met for successful employment of a munition by a particular weapons system.
LINE UP - List of aircraft and pilots in a flight.
MERGE - The meeting of adversarial aircraft. An intercept leading to an engagement where some or all of the aircraft are in the same area.
ON-STATION - In position, ready for mission employment.
POPEYE/IMC - Flying in clouds or area of reduced visibility.
SANITIZE - Clear the area of threats.
SCRAMBLE - Takeoff as quickly as possible.
SEPARATION - Distance between an attacker and defender; can be lateral, longitudinal, or vertical.
SORTING - Using all available information such as radar presentation, GCI information, etc., to determine which flight member will keep track of (and usually target/attack) which bandit.
WILD WEASEL - Dedicated radar defense suppression aircraft.
APPENDIX IV
CODE AND BREVITY WORDS

The following is a list of code and brevity words for use during flight to minimize radio transmissions. They are often also used in regular conversation among flyers.

ABORT - Direction to cease action/attack/event/mission.
ARM/ARMED (Safe/Hot) - Select armament (safe/hot), or armament is safe/hot.
AS FRAGGED - Fighter, FAC, mission package, or agency will be performing exactly as stated by the air tasking order.
AUTHENTICATE - To request or provide a response for a coded challenge as a means of identification.
BANDIT (Radar/Heat/Striker) - Known enemy aircraft and type ordnance capability, if known.
BINGO - Fuel state at which return to base must commence.
BOGEY - A radar/visual contact whose identity is unknown.
BREAK (Right/Left) - Directive to perform an immediate maximum performance turn in the indicated direction. Assumes a defensive situation.
BROKE LOCK - Loss of radar/IR lock-on (advisory).
BUGOUT (Direction) - Separation from that particular engagement/attack; no intent to reengage.
BURNER - Directive to select/deselect afterburner.
CHATTERMARK - Begin using briefed radio procedures to counter comm jamming.
CLEAN - No radar contacts.
CLEARED - Requested action is authorized (no engaged/support roles are assumed).
CLEARED HOT - Ordnance release is authorized.
CLOSING - Bandit/bogey/target is getting closer in range.
COMMITTED/COMMIT - Fighter intent to engage/intercept; weapons director continues to provide information.
CONTACT - Radar/IR contact at the stated position; should be in bearing, range, altitude (BRA), bull's eye, or geographic position format.
ENGAGED - Maneuvering with the intent of achieving a kill or negating the threat. If no additional information is provided (bearing, range, etc.), engaged implies visual/radar acquisition of the threat.
EXTEND (Direction) - Directive to gain distance with the possible intent of returning.
FEET WET/DRY - Flying over water/land.
FURBALL - A turning fight involving multiple aircraft.
GO SECURE - Directive to activate secure voice communications.
GORILLA - Large force of indeterminable numbers and formation.
HIT - Radar return in search (air-to-air). Weapons impact within lethal distance (air-to-ground).
HOME PLATE - Home airfield.
JOKER - Fuel state above bingo at which separation/bugout should begin.
KILL - Clearance to fire on target.
KNOCK IT OFF - Stop attacking/defending and recover to a safe altitude and vector.
LOCKED (BRA/Direction) - Final radar lock-on (bearing/range/altitude).
NO JOY - Aircrew does not have visual contact with the target/bandit; opposite of "TALLY."
PAINT - Interrogation of another aircraft's IFF return indicates that it is friendly.
PARROT - IFF transponder.
PICTURE - Situation briefing which includes real-time information pertinent to a specific mission.
PRESS - Directive to continue the attack; mutual support will be maintained. Appropriate engaged and supporting roles will be assumed.
ROGER - Indicates aircrew understands the radio transmission; does not indicate compliance or reaction.
SHOOTER - Aircraft designated to employ ordnance.
SICK - Described equipment is degraded.
SPIKE - RWR indication of AI threat.
SPLASH - Target destroyed (air-to-air); weapons impact (air-to-ground).
SPOOFLING - Notification that voice deception is being employed.
SQUAWK () - Operate IFF as indicated or IFF is operating as indicated. (mode __).
TALLY - Sighting of a target/bandit; opposite of "NO JOY."
**TUMBLEWEED** - Indicates limited situation awareness; no tally, no visual, a request for information.

**VISUAL** - Sighting of a friendly aircraft; opposite of "BLIND."

**WEEDS** - Indicates that aircraft are operating close to the surface.

**WILCO** - Will comply with received instructions.

**WINCHESTER** - No ordnance remaining.
APPENDIX V
ROB AND MIKE'S GUIDE TO FIGHTER SPEAK
(phrases fighter pilots use in normal conversation that no one else understands)

CHECK SIX/WATCH YOUR SIX - Be alert to a threat behind you; figuratively, be alert to someone trying to take advantage of you.
CRASH AND BURN - Fail miserably.
CUT TO THE CHASE - To get straight to the point.
DRIVER - Pilot.
ENGAGE - To involve oneself.
FIGHT'S ON - An event/intercept/air-to-air practice engagement; figuratively, to begin.
GO BALLISTIC - To lose control, as in becoming extremely angry.
IN THE FIGHT - Involved.
IN THE WEEDS - Dealing with minutiae.
HARD BROKE - Very difficult to correct; not repairable.
HIGH UP ON MY SCOPE - Of much importance to me.
KNOCK IT OFF - Stop.
LAWN DART - F-16.
NO TALLY/NO CLUE - Does not understand/no knowledge.
PITCH OUT - To uninvolve oneself.
PRESS - Continue.
PULL CHOCKS - Leave.
SA (SITUATIONAL AWARENESS) - To understand the context in which an event is occurring.
SHAKE THE STICK - Take charge.
SHOE CLERK - Non-flyer.
SH_T HOT - Most excellent.
TENNIS COURT - F-15.
THROTTLE BACK - Slow down; take it easy.
VFR DIRECT - To go straight to someplace or someone.
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2 Air and space superiority is control over what moves through air and space. It is this control which shields friendly forces from attack through the air or from space, while allowing us to attack the enemy in and from those media. Global attack is the Air Force's capability of attacking anywhere at any time. Precision engagement is the ability to surgically apply force in a very discriminating fashion. Information superiority involves the acquisition of quality information and intelligence ranging from weather to the enemy order of battle, while denying the same to the enemy. Though the catch phrase "information warfare" is often associated with information superiority, it might also includes such traditional operations as attacks on enemy radar facilities. Rapid global mobility reflects the ability to quickly deploy combat forces worldwide, whereas agile combat support involves logistics issues (the "tail" in the tooth to tail relationship).


4 The recently activated Air Force Doctrine Center at Maxwell AFB is developing a series of Air Force Doctrine Documents (AFDD) which will redefine roles, missions, and functions to better match the definitions in DOD and JCS publications.

5 Air superiority should be distinguished from air supremacy. Superiority occurs when one side is clearly dominant. Supremacy, by contrast, is a degree of superiority that implies total control of the skies; enemy air forces have been rendered essentially impotent.

6 The aircraft may also be tasked with cruise missile defense, though this is not often done.

7 The level of war is determined by the objective to be achieved by the specific strike or action. Strategic strikes are designed to have impact upon the enemy's national or theater war making capability. Operational level strikes, in this case air interdiction, are synchronized and integrated with other operational level activities to achieve theater objectives of a large scale, which would decisively affect the outcome of a major operation or campaign. Tactical strikes, such as CAS or specific air-to-air engagements, contribute to the success of a regional battle.

8 LOCs are simply routes of transport; attacking a port, a rail head or bridge are all examples of strikes against LOCs.

9 As such, it, is under the tactical control of the Joint Force Land Component Commander (JFLCC) if one is designated Tactical control, or TALON, is the command authority over forces made available for tasking, and is limited to the direction and control necessary to accomplish assigned missions. TALON provides authority to control and direct tactical use of combat support assets, but does not provide authority over organization, administration; or logistics. Operational Control, or OPCON, exceeds TALON in its authority to command subordinate forces; it, include all aspects of military operations, training, organization and logistics.

10 For example, B-52s were used for CAS purposes in the defense of Khe Sanh during the Vietnam War.
11 As can other intelligence, surveillance, and reconnaissance (ISR) platforms, such as the U2/TR-1 and the RC-135 "Rivet Joint."

12 F-16s performed the CSAR "Sandy" role in Southwest Asia (SWA).

13 See article by Professor Jack Grunawalt, Naval War College, in this edition of the A.F.L. REV.

14 In actuality, the F-117 functions more in strategic bomber than in classic fighter roles.

15 Inertial navigation systems derive an aircraft's position and velocity vectors based upon knowing its initial position and adding the movements of the aircraft over time. Those movements are determined by precisely measuring subtle (and not-so-subtle) changes in the inertia of the aircraft relative to a stable nearly-frictionless mass. Older systems used a spinning mass, while newer systems use a laser gyro. The Global Positioning System measures an aircraft's position relative to a constellation of navigational satellites, and derives velocity vector information based upon changes in measured position. In many of the newer fighter aircraft, the INS and GPS information is integrated into the aircraft's navigation and fire control computers to provide extremely accurate navigation and weapons delivery information to the pilot.

16 In statutory miles (5,280 feet per mile). The reader should be aware that in planning missions, nautical miles (6,076 feet) are used.

17 "Mach" is a measure of the speed of sound. Therefore, Mach 4 equals four times the speed of sound. Mach varies with temperature, which is a function of altitude. At sea level, Mach 1 is about 750 miles per hour.

18 Including Iraqi helicopter kills. The overall record of the F-15 world-wide in air-to-air engagements is approaching 100-0. The F-16 has a similarly impressive record in combat aircraft engagements.

19 Laser designation illuminates, much like a tightly focused flashlight, a coded beam of laser light onto the specific desired aimpoint of a target. The seeker on the front of the laser-guided bomb (LGB) sees and recognizes the coded beam's reflection and steers the bomb exactly to the illuminated point.

20 The aircraft is also used for forward observation (using the nomenclature "OA-10"), and combat search and rescue.

21 "Flares" are typical countermeasures for IR threats; ejected from canisters mounted along the lower surface or pylons of the aircraft, their short-lived but intense heat signature decoys IR missiles away from the aircraft. "Chaff," or bundles of reflective material cut into measured strips to provide a return to enemy radars, can be ejected from the same canisters to confuse or decoy radar-guided threats (missiles or AAA).

22 450 if Air National Guard (ANG) and Air Force reserve (AFRES) aircraft are included.

23 In that, the topic of weapons is extremely complex, the discussion here should be considered illustrative, not exhaustive. Additionally, there are weapons other than those cited; only the ones most likely to be encountered have been included, and then only in their most common configuration.

24 During normal "search" operations, a fighter's radar antenna "sweeps" from side to side, allowing it to "paint" targets throughout a usually large, designated area. The pilot can "lock on" his radar to a specific target, which focuses the antenna and its radar beam only on that target. Once that target is "locked," the radar will automatically follow that target, usually in spite of his maneuvers or countermeasures, until the pilot "breaks lock" or the target exceeds the limits of the radar antenna's range of motion. A locked condition provides the most accurate information to the fire control computer for missile firing. Recent updates to fighter radars allow accurate missile employment in a "track-while-scan" (TWS) mode without a lock-on.
25 Since all air-to-air missiles in the inventory are BVR capable, the decision to take a shot BVR or WVR (within visual range) is often driven by the ROE.

26 Most infrared, or IR, seekers track a distinct contrast of a hot target against a cooler background or a cold target against a warmer background. The newer Maverick seekers are imaging infrared, or IIR (commonly called "double IR"). With this technology, an image is displayed digitally and the seeker can match the scene without requiring distinct contrasts.

27 When bombs are dropped ballistically, their course is determined by the laws of physics (gravity, speed, direction, etc.)

28 Nominally out to 1/2 mile from detonation.


30 For an extensive discussion of deliberate and crisis action planning, see The Joint Staff Officer's Guide, Armed Forces Staff College Publication 1, chs. 6-7 (1993). See also JCS, Doctrine for Planning Joint Operations (Joint Publication 5.0) (1995).

31 On the role and functions of the JFACC, see Deputy Chief of Staff, Plans and Operations, Headquarters, USAF, JFACC Primer (2d ed. 1994).

32 In some Joint Task Forces, the JTCB builds the JIPTL. Whatever the case, it is an important tool for the JFACC in making his apportionment recommendation to the Joint Force Commander. Note that not all joint/combined task forces employ a JTCB. For example, a no fly operation generally would not, absent related ground operations. It is a need based entity.


34 The US Navy uses Mode II to identify aircraft type for carrier operations.

35 Two different Mode IV settings, "A" & "B," are loaded into the aircraft, and the pilot must switch from one to the other if his sortie continues through midnight (local) or 2400 (zulu) as determined by the SPINS in the ATO.

36 Usually, the newer fighter aircraft can fly five or six sorties each day, but the pilots are normally limited to three in order to stay within the twelve hour duty day and reasonable stamina limits. Therefore, there will usually be two sets of fighter aircrews to cover the combat flying period.

37 Adapted from the 432 Tactical Fighter Wing Weapons Guide (Change 1), May 1986, at A1 A5. Unique details would be added or changed for specific aircraft types, missions, munitions, etc.

38 Only the air-to-ground variant is included.

39 A Form 70 is a flight planning form used to provide the pilot with the headings, distances, time, and fuel computed to fly the planned route.

International Agreements: A Primer for the Deploying Judge Advocate

LIEUTENANT COLONEL ARTHUR C. BREDEMEYER, USAF /*/
Currently, the Air Force is increasing the role of expeditionary forces to maintain its global engagement capability. In the future, capabilities based in the continental United States will likely become the primary means for crisis response and power projection as long-range air and space-based assets increasingly fill the requirements of the Global Attack core competencies. /1/

I. INTRODUCTION

After World War II, U.S. military strategy for achieving national security objectives included a large, forward-deployed, permanent military presence in strategic overseas locations. As a result of the end of the Cold War, the drawing down of U.S. military forces, and the changing international environment, the size of the United States' permanent overseas presence has remarkably decreased /2/ The need to quickly deploy U.S. military forces abroad, both permanently and temporarily, is still essential to U.S. national security strategy and will be into the foreseeable future. /3/ During the 1990s alone, the United States has been involved in one major regional conflict (MRC) (i.e., the Gulf Conflict) and a wide range of "contingencies short of war" (CSOW) in support of U.S. interests. /4/ Examples of these new contingencies include: smaller-scale combat operations, multilateral peace operations, counterdrug operations, counterterrorism operations, sanctions enforcement, noncombatant evacuation operations (NEOs), humanitarian operations and disaster relief operations. /5/

Considering the current state of affairs, it is prudent for all judge advocates (JAGS) to be prepared to deploy to another country and advise a deploying military force on operational law issues. Even if you are not deploying with the force, you still need to be prepared to advise forces on a number of varied pre-deployment legal issues. While there are a number of operational law issues with which you must be well versed, one of the most important is an understanding of international agreements. Today, JAGs face ever more complex operational law issues because of the growing use of joint forces. In the future, most deployments will be part of a Joint Task Force (JTF), a Coalition force involving more than one country, a United Nations sponsored force, or a NATO-sponsored force.

This article is a primer on international agreements and a tool for the Air Force judge advocate deploying with a military force or advising a deploying military force. It provides a general overview and basic understanding of international agreements, reviews the questions and issues that must be addressed when dealing with them, educates you on the legal requirements within the Department of Defense (DOD) and the Department of the Air Force for negotiating and concluding international agreements, and discusses their interpretation and implementation. The effective use of international agreements will greatly enhance the probability of a deployed military force's mission success.

II. INTERNATIONAL AGREEMENTS

A. Fundamentals

Except where a deployment to another country is covered by the contemporary and conventional laws of armed conflict, the deploying military force cannot operate within the territorial boundaries of another country without some sort of legal authority. In peacetime, whether the military force is permanently deployed in a country or temporarily deployed for a contingency short of war or military exercise, the United States deploys its military forces into a country only with the country's permission. /6/ Such permission, plus the terms and conditions of the deployment, are usually contained in a multilateral
or bilateral international agreement. These agreements are important because they define the rights and obligations of the deploying military forces. In countries where U.S. forces are permanently based or frequently deployed, you will usually already find a Status of Forces Agreement (SOFA). In countries where U.S. forces are permanently based or frequently deployed, you will usually already find a Status of Forces Agreement (SOFA). However, with more and more crisis deployments in support of contingencies short of war, you will most likely not find an international agreement in place concerning the deployment.

Advance preparation is essential to advising commanders and the deploying military forces. You must have a basic understanding of international agreements, the process for negotiating and concluding them, the legal reporting requirements, how to interpret and implement them, and where to get expert assistance when necessary. Armed with this basic understanding, you should begin your pre-deployment analysis by familiarizing yourself with the proposed mission and anticipating the deployment's problems that should be resolved through an international agreement. You should then determine whether a SOFA or other international agreement currently exists that answers the anticipated problems. If no agreement currently exists, or the current agreement is inadequate, you should try to get an acceptable agreement negotiated and concluded prior to the deployment. Negotiating international agreements for permanent deployments involve many issues and usually take a long time to accomplish. However, the United States is occasionally able to expedite the negotiation and conclusion of international agreements covering most temporary deployment concerns, especially in contingencies short of war where the receiving country urgently wants the deployed force in place. Finally, if deployed, you will have to continually follow a similar analysis process to identify potential or existing problems that need to be addressed by an international agreement.

B. General Background

Before examining the procedural directives on negotiating and concluding international agreements, it is important to have a basic understanding of international agreements and the applicable law. There are two types of international agreements commonly recognized by U.S. law, and there are significant differences between them. The two types of agreements are treaties and executive agreements. The most notable difference between the two is that a treaty must undergo the "advice and consent" process by the U.S. Senate and receive a two-thirds vote for approval. Executive agreements, on the other hand, do not require Senate approval. They can be negotiated by the President or his designee and go into effect upon Presidential approval. Although not expressly stated in the U.S. Constitution, the resident's authority for executive agreements is well established in U.S. law. Another difference between the two is that once a treaty receives Senate approval, and as long as it does not violate the U.S. Constitution, it is the supreme law of the land per the U.S. Constitution's supremacy clause. This means the treaty takes precedence over executive orders, regulations, and laws passed by the individual states.

There may be a treaty affecting your deployment. However, the majority of international agreements affecting your deployment will be executive agreements. They are negotiated and concluded by an authorized representative of the President, acting under one of at least three types of recognized substantive authority: (1) an existing treaty; (2) existing U.S. law (or subject to legislation to be enacted by Congress); or (3) pursuant to the President's constitutional authority.

C. Status of Forces Agreements (SOFAs)
The most commonly recognized international agreement for defining the status of military forces present within the territorial boundaries of another country is the SOFA. A SOFA can be in the form of either a treaty or an executive agreement. It may be a long-standing arrangement or a short-term one. The arrangement can be created by a separate document, or it may be imbedded in any number of broader agreements, such as mutual defense agreements (MDAs), defense and economic cooperation agreements (DECA), or defense cooperation agreements (DCAs). Keep in mind, however, that SOFAs are not basing or access agreements, and do not by themselves authorize the presence of the military forces. 

Generally, there are three arrangements for establishing the rights and responsibilities of our temporarily or permanently stationed military forces within the territorial boundaries of another country: (1) Administrative and Technical (A&T) Status; (2) the SOFA; and (3) the mini-SOFA. Determining which arrangement is best under the circumstances depends upon the nature and duration of the military activity within the host country, the maturity of the relationship between the sending and receiving states, and the prevailing political situation in the host nation.

A&T status provides the deployed military forces with certain immunities, the most important of which is complete immunity from the receiving state's criminal jurisdiction and immunity from their civil jurisdiction to the extent that the act giving rise to the action was done in the performance of official duty. A&T status is usually only available for temporarily deployed military forces, such as those involved in joint military exercises and humanitarian relief operations. The process of obtaining A&T status is very simple and can be accomplished merely through an exchange of notes. A&T status can also be granted in the context of the overall agreement authorizing the activity itself. The Department of Defense (DOD) requests A&T status with such frequency that they have been granted a blanket delegation of authority from the U.S. Department of State (DOS) to negotiate and conclude international agreements on A&T status. While the process is easy to accomplish, A&T status is not always easy to obtain because it provides such broad immunities.

The SOFA is the most extensive of the three types of status arrangements and is most often used when there is a large temporarily deployed military force or a permanently deployed military force in the receiving country. In both these cases, there is usually a need for a number of support services. The standard SOFA will usually try to address the following areas: (1) respect for law and sovereignty, (2) entry and departure procedures, (3) wearing of the uniform, (4) the carrying of arms, (5) driving licenses and registration, (6) criminal jurisdiction, (7) civil jurisdiction, (8) arrest and service of process, (9) claims, (10) duties, taxes, and other charges, (11) importation, use and exemption of personal property, (12) personal tax exemption, (13) morale, welfare, and recreation activities, (14) health care, (15) postal services, (16) use of transportation, (17) use of currency and banking facilities, (18) contractor employees, (19) local procurement, (20) utilization of local labor, (21) customs, (22) governing agreement, and (23) duration and termination. The United States always requests legal protection for our military forces being deployed to foreign countries, especially in a bilateral situation. The North Atlantic Treaty Organization (NATO) SOFA, which is a treaty, and the Partnership for Peace (PfP) SOFA are the United States' only fully reciprocal SOFAs, meaning their protections and responsibilities are reciprocal among the signatories.

The third type of status arrangement is the mini-SOFA. It is designated as such because it does not address all the areas commonly contained in a full SOFA agreement. At a minimum, the mini-SOFA will usually address: (1) respect for law and sovereignty, (2) entry and departure procedures, (3) carrying of arms, (4) criminal jurisdiction, (5) civil jurisdiction, (6) claims,
duties, taxes, and other charges, (8) local procurement, (9) customs, and (10) duration and
termination. /23/ The mini-SOFA is ideal for small scale deployments and those of short duration,
not requiring large support services. It is excellent for use in exercises and is sometimes referred to
as an "exercise SOFA."

Lately, there has been a blurring of the distinction between requesting A&T status and the
mini-SOFA. Officials are now trying to achieve mini SOFA status via requests for A&T status.
While A&T status provides the deploying force with certain immunities, its key protection is
immunity from the receiving state's criminal and most of its civil jurisdiction. /24/The DOS recently
sent a request for A&T status via a draft message forwarded through its embassies to the
governments of Botswana, Mali, Namibia, and Senegal. The message requested A&T status for
military personnel deploying into those
countries for the FLINTLOCK 1997 Exercise. In this message, the United States requested much
broader rights than traditional A&T status. The request included authorization from the receiving
state for entrance and exit privileges, wear of the uniform, the right to carry arms while on duty,
duty free
importation and exportation, exemption from internal taxation, and for vessels to be exempt from
port fees and landing, parking, navigation or overflight charges. /25/ Although the request was for
A&T status, officials now appear to be folding as many status issues as possible into such requests.

With worldwide U.S. military commitments, the United States is constantly negotiating status
arrangements. As of 2 June 1997, the United States is negotiating some form of status arrangement with
Argentina, Bangladesh, Botswana, Benin, Brazil, Cameroon, Congo, Czech Republic, Ecuador, El
Salvador, Eritrea, Fiji, France, Gabon, Ghana, Guyana, Ivory Coast, Jordan, Kenya, Korea, Malaysia,
Mali, Namibia, Paraguay, the Partnership for Peace countries, the Philippines, Russia, Saudi Arabia,
Singapore, United Arab Emirates, and Zaire. /26/ Currently, the United States has some form of formal
SOFA with 87 countries. /27/ When the content of a SOFA is politically sensitive for the receiving state's
government, the agreement may be classified. The United States is party to classified SOFAs with ten
nations, including four in Southwest Asia. The very fact a SOFA exists may be classified, although none
currently are.

Generally, Air Force JAGs will not represent the United States as negotiator during a SOFA negotiation. They may,
however, be assigned as members of a negotiating team. Because SOFAs are considered agreements with "policy
significance," there is no delegation of authority for such negotiations. This is due to the important impact a SOFA
can have on the international relations between the United States and the receiving country. /28/ DOS has authority
to negotiate SOFAs and DOD must request authority using the Circular 175 Procedure. /29/ The process is designed
to ensure substantive legal authority exists for the agreement, appropriate departments and agencies get timely
consultation, the proper person signs at the proper time, and all reporting requirements are satisfied. /30/ Whether
you are involved in the negotiation of a complete SOFA or merely establishing a less comprehensive status
agreement, you still must obtain Circular 175 authority.

III. NEGOTIATING, CONCLUDING, REPORTING, AND
MAINTAINING INTERNATIONAL AGREEMENTS

Although you may not be directly involved in a SOFA or other type of status negotiation,
there is a high likelihood that while deployed with a military force you will be involved in
negotiating other types of international agreements and implementing and interpreting them. Other
areas where international agreements are usually needed include logistics support, prepositioning of
material, cryptological support, personnel exchange programs, and security assistance programs.
/31/
A. Authority to Negotiate

To properly negotiate an international agreement or advise someone that is doing so, you must know the type of international agreement sought, the type of military force being deployed, and the chain of command. You must ask yourself whether you are a single-service force or a joint force? Is the military force part of a coalition operation? Is this a United Nations-sponsored or NATO-sponsored operation? Once these questions are answered, you will be able to identify the proper procedural guidance applicable to your negotiation. Guidance for DOD personnel is contained in a number of procedural directives, however, they are very similar because they all derive their authority from DOD Directive 5530.3. /32/

DOD Directive 5530.3 is the main source for DOD personnel negotiating international agreements. There are additional specific directives which govern certain specialized agreements. Most, however, would not apply to the deployment of a military force. Also, each separate Service and the Joint Chiefs of Staff (JCS) have its own directive based upon DOD Directive 5530.3 and should be consulted in appropriate deployments. /33/ DOD Directive 5530.3 assigns responsibility within DOD for negotiating and concluding international agreements with foreign governments and other international organizations. It also establishes the procedures for complying with the reporting requirements of the Case-Zablocki Act. /34/ This Act requires the Secretary of State (SECSTATE) to report to the Congress all international agreements other than treaties within 60 days after their entry into force with respect to the United States. All directives within DOD dealing with international agreements have a Case-Zablocki Act reporting requirement. /35/ Also, remember that all DOD directives pertaining to international agreements are only procedural. Substantive legal authority for each obligation assumed by the United States must be found in constitutional, statutory, or other legal authority applicable to the subject matter of the proposed agreement. /36/

The authority to negotiate and conclude most international agreements involving DOD has been delegated in DOD Directive 5530.3 to the Service Secretaries for Service-specific agreements, various DOD agencies, and the Chairman of the Joint Chiefs of Staff (CJCS) for joint operations agreements. /37/

This authority has been redelegated by the Service Secretaries within their respective Services and by the CJCS to the Unified Command Commanders-in-Chief (CINCs). /38/ There are, however, limitations on these delegations of authority, /39/ the most significant being a prohibition on agreements "having policy significance." /40/ This term should be interpreted broadly. Similar restrictions are contained in the redelegations of authority within DOD." Thus, it would be prudent when embarking upon a negotiation to insure that the person negotiating for DOD has the proper authority for the subject matter being negotiated.

In the Air Force, the Secretary of the Air Force, has redelegated authority to negotiate and conclude international agreements for predominantly Air Force matters within their authority and responsibility to commanders of major commands (MAJCOMs), field operating agencies (FOAs), and the heads of major Air Staff organizations. /42/ This authority can be further delegated to subordinate commanders, but it does not relieve the delegating authority from responsibility. /43/ One of the most frequently used categories of international agreements available to the delegate involves "[t]echnical, operational, working, or similar agreements or arrangements, to be concluded pursuant to a treaty or executive agreement that entails implementing arrangements." /44/ This category is useful when the proposed agreement is merely implementing an already existing agreement. Although this can be broadly interpreted, especially by a creative judge,
advocate, the directive contains warnings against an overbroad interpretation of this delegation. /45/ The other listed categories may also be encountered when deploying with a military force. /46/ Whenever exercising the delegated authority to negotiate and conclude an international agreement, you must involve and consult with all Air Force and DOD organizations that have an interest in the subject matter of the agreement. /47/

B. Procedures for Negotiating and Concluding an International Agreement

Prior to negotiating /48/ with any foreign government or international organization, either orally or in writing, you must obtain the written concurrence of either the Secretary of the Air Force's Assistant General Counsel for International Matters and Civil Aviation (SAF/GCI) or the responsible staff judge advocate. /49/ The Air Force Judge Advocate General's International and Operations Law Division (HQ USAF/JAI) should also be contacted and copied on all communications from the field with SAF/GCI. In addition, any international agreement which includes a financial obligation or has any other cost or fiscal implication must be submitted to the comptroller at the level of negotiating authority. /50/

When the proposed international agreement must be dealt with at the Secretarial or Air Staff level, you must submit a request for authority to negotiate or conclude the agreement to the appropriate Office of the Secretary of the Air Force (OSAF) or functional Air Staff element. They will ensure that SAF/GCI and HQ USAF/JAI get copies of all communications. It would be greatly appreciated, however, if copies were sent from the requester directly to each of the two legal offices. /51/ Such a request must be made by letter or message and include: (1) a draft text, outline, or complete description of the proposed international agreement; (2) a legal memorandum stating the Constitutional, statutory, or other legal authority for each proposed obligation that the United States would assume in the agreement and an explanation of other relevant legal considerations; (3) a fiscal memorandum stating the estimated cost of each proposed obligation that the DOD would assume in the agreement, the source of funds to be obligated, and reference to foreign currency payment provisions, if applicable; (4) a Technology Assessment and Control Plan per DOD Directive 5530.3, Section I, paragraph 3d; and (5) a quid pro quo analysis that fully addresses the benefit to be derived by each signatory to all proposed agreements involving cooperative research, development, testing, evaluation, technical data exchange, and related standardization matters. /52/ If you already have the authority, or you have received written authority from the appropriate authority, the international agreement can be negotiated and concluded. The conclusion occurs when both parties indicate its acceptance of the international agreement by signing, initialing, responding, or otherwise indicating its acceptance. /53/

C. Additional Issues, Reporting and Maintaining the International Agreement

When negotiating and concluding the international agreement, no matter at which level of authority, you should remember that amendments to an existing international agreement must be approved in the same manner as the agreement being amended. /54/ Also, oral agreements can constitute binding international agreements and, therefore, must comply with the same directive requirements as a written agreement. /55/ In addition, the international agreement cannot be in a foreign language unless it contains provisions that expressly provide that the English text version controls any conflicts, or the agreement expressly provides that the English text and the foreign
The Case-Zablocki Act requires that all nontreaty international agreements be reported to Congress. Each organizational element of the Air Force that concludes an international agreement must send the original or certified copies of the agreement to the Office of the Assistant Legal Advisor for Treaty Affairs, Department of State, not later than 20 days after signature of the agreement. AFT 51-701, Attachment 3, contains a list of addresses as well as what must be contained in the letter of transmittal. Note that Unified Commands with geographical authority should also receive a copy.

The organization that negotiates an international agreement is responsible for compiling and maintaining the negotiation history. HQ USAF/JAI is the single office of record for the Air Force and maintains copies of each agreement covered by AFT 51-701.

**D. Acquisition and Cross-Servicing Agreements**

When deployed, acquisition and cross-servicing agreements will be very important to the logistic support of your military force. As you know, without sufficient logistic support the deployed military force will usually not accomplish its mission. In any deployment of more than a few people, it is likely that logistic support, service, and supplies will have to be obtained at the deployed site through the receiving state. This used to be a difficult process because of certain legislative restrictions which were eliminated by the passage of the NATO Mutual Support Act of 1979 (NMSA).

With the passage of the NMSA, DOD obtained the authority to acquire logistic support without the restraint of complex domestic U.S. law. Additionally, it authorized DOD, after consultation with DOS, to enter into cross-servicing agreements with NATO allies and subsidiary organizations for reciprocal logistic support. While originally geographically restricted, subsequent changes to the NMSA have made its application world-wide and expanded the list of eligible countries to include the United Nations and many non-NATO countries. NMSA legislation provides three types of legal authority: (1) acquisition; (2) cross-servicing; and, (3) waiver. However, this authority is not without limitations. For example, DOD cannot use NMSA authority to procure goods or services reasonably available from U.S. commercial sources. In addition, it cannot be used to purchase goods or services that DOD is already prohibited by law from purchasing, and the contracts must be free from self-dealing, bribery, and conflict of interests.

**E. What Are Not International Agreements**

Just as important as knowing what constitutes an international agreement and the procedures that must be followed when dealing with them, is knowing what does not constitute such an agreement. There are a number of different agreements the deploying force will usually make within the receiving state or with the receiving state that do not constitute international agreements. These include: (1) contracts made under the Federal Acquisition Regulation (FAR); (2) Foreign Military Sales Credit Agreements; (3) Foreign Military Sales Letters or any authorized substitute document; (4) certain Standardization Agreements; (5) certain types of leases; (6) agreements concluded solely to establish administrative procedures; and (7) acquisitions or orders pursuant to cross-servicing agreements made under the authority of NMSA or DOD Directive 2010.9. In the case of non-
international agreements, you must still comply with the appropriate procedural requirements for the agreement being negotiated and concluded.

IV. DEPLOYED

Section II of this article briefly discussed a pre-deployment and deployment analysis for determining the need for an international agreement, especially regarding status and the adequacy of any existing applicable international agreement. This section will examine this analysis in more depth.

Again, prior to deployment you need to know whether or not a status agreement exists that covers the deploying military force that you are advising. Also, you need to anticipate other deployment issues and determine if an existing international agreement resolves those issues. This is true no matter what the size or type of deployment. If a status agreement exists, you must determine whether it is applicable to your deploying force and whether the coverage is adequate. If no agreement exists, you must explore whether one can be obtained prior to the deployment. If not, you should be aware and advise the deploying military force that there is great risk associated with deploying into the territorial boundaries of another country without the protection of a status agreement. It is the consensus of The Judge Advocate Generals (TJAGs) and their International Law staffs that we should not deploy into a receiving state without a status arrangement. This also appears to be the direction in which the Office of the Secretary of Defense (OSD) is going on this important issue. /68/

Clearly, it is dangerous to deploy into a receiving state without a status arrangement protecting the deploying military force. It is U.S. government policy to maximize the exercise of criminal jurisdiction by U.S. forces over its personnel assigned to duty in foreign countries through the negotiation of a status arrangement, /69/ but sometimes it is impossible to obtain one. In such cases, the decision to deploy without the status agreement is a policy decision to be made at the highest level of command. In rare instances, where past experience has proven both the good will and the effective authority of the receiving state's government, the U.S. will accept an oral understanding that things will be worked out if a problem occurs. A continuing example of such a relationship is with Thailand and the Air Force's annual Cobra Gold exercises. Even without such assurances, if the U.S. considers the deployment of significant importance, it will sometimes forego a status arrangement. Some receiving states, especially in the case of major exercises, have little incentive to conclude a status agreement. This is because the United States is unlikely to cancel the exercise even when the deploying force has no legal protection. Many countries that will not agree to a status arrangement are using their refusal as leverage in other negotiations. Also, many are fearful of the political backlash they feel will occur should a deployed military member commit an offense and they be forced to turn the "criminal" over to the sending state. If faced with a situation where the deploying military force does not have the protection of a status agreement, you should consult with the higher headquarters staff judge advocate or HQ USAF/JAI. Also, you should brief the deploying force on their lack of protection and what to do if they are involved in a criminal or civil legal action within the receiving state.

Once deployed, there may be issues that can only be resolved through an international agreement. In such instances, you should be mindful of the regulatory requirements for negotiating, concluding, and reporting international agreements. Whenever possible, however, you need to be proactive. This includes discovering what international agreements already exist, and anticipating what issues will need to be addressed by new international agreements. It is always better to try and resolve these issues.
prior to deployment because of the availability of resources and support. Also, the deployed force's mission is more likely to succeed with the issues already resolved. Poor advance preparation results in needless energy and resources being spent focusing on these issues, rather than on the deployed mission.

There are a wealth of resources available to assist you in discovering the existence of applicable international agreements, interpreting them, or when accomplishing new international agreements. The first place you should look for international agreements applicable to the deployment is the Unified Command having geographical authority for the receiving state. In addition, you can contact HQ USAF/JAI which is the repository for all Air Force-related international agreements completed under the guidance of AFI 51-701. A recently added resource to the HQ USAF/JAI inventory of resource tools is a compilation of status agreements onto CD-ROM disks. Some of these CD ROM disks have been distributed to MAJCOMS. If you cannot locate one in the field, you can get access to them through HQ USAF/JAI or FLITE. Of course, other available resources include various Internet sites, WESTLAW, and LEXIS-NEXIS.

Your duties will include reviewing proposed international agreements prior to requesting authority to negotiate and conclude. An excellent checklist for your evaluation is contained in the Army's Operational Law Handbook. Although the checklist is helpful, you are still responsible for complying with the requirements of the applicable directive on international agreements. Additionally, you are responsible for assisting the deployed military force in interpreting existing international agreements as well as with resolving disputes. When resolving disputes, you should attempt to get them resolved at the lowest possible level. This may include informal discussion between the affected parties. If it cannot be resolved at this level, you should send a report to SAF/GCI, with a copy to HQ USAF/JAI. Remember, you have no authority to resolve issues having "policy significance."

V. CONCLUSION

Being deployed as a judge advocate or advising a deploying military force can be the ultimate test for a judge advocate and is what sets them apart from non-military lawyers. One of your most important deployed missions is to assist the commander and military force in accomplishing their operational mission. As stated in the beginning of the article, one of the most important areas in either assisting operational mission accomplishment or impeding it is the area of international agreements. Now that you are armed with a basic background in international agreements, you are primed and ready to use international agreements for operational mission success.

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4 Id. at 6. "Contingencies short of war" is defined as "[m]ilitary operations that go beyond the routine deployment or stationing of U.S. forces abroad but fall short of large-scale theatre warfare." Id. CSOW appears to be the term in use for what was commonly referred to as "Operations Other Than War" or OOTW. One military expert, General Hartzog, Commander, U.S. Army Training and Doctrine Command (TRADOC), has stated that the military should stop using catch-all terms like OOTW and use instead more precise terms which describe the operation, such as "peace keeping" or "disaster relief." See OPERATIONAL LAW HANDBOOK, Army Judge Advocate General's School publication JA 442, CHAPTER 13, pg. 13-1, n.3. (1996) [hereinafter ARMY HANDBOOK].

5 Defense Report, supra note 3, at 6-10.

6 Does not include what are now referred to as "Peace Enforcement" operations (PEO). CHAIRMAN OF THE JOINT CHIEFS OF STAFF, JOINT PUBLICATION 3-07, JOINT DOCTRINE FOR MILITARY OPERATIONS OTHER THAN WAR, III-13 (16 June 1995) defines PEO as "[t]he application of military force, or threat of its use, normally pursuant to international authorization, to compel compliance with resolutions or sanctions designed to maintain or restore peace and order ... [s]uch operations do not require the consent of the states involved or other parties to the conflict."

7 See infra text accompanying notes 15-30.

8 Department of Defense Directive 5530.3., encl. 2 (11 June 1987) defines "international agreement" as: Any agreement concluded with one or more foreign governments (including their agencies, instrumentalities, or political subdivisions) or with an international organization, that: (1) is signed or agreed to by personnel of any DOD Component, or by representatives of the Department of State (DOS) or any other Department or Agency of the U.S. Government; (2) signifies the intention of its parties to be bound in international law; and (3) is denominated as an international agreement or as a memorandum of understanding (MOU), memorandum of agreement (MOA), memorandum of arrangements, exchange of notes, exchange of letters, technical arrangement, protocol, note verbal, aide memoir, agreed minute, contract, arrangement, statement of intent, letter of intent, statement of understanding or any other name connoting a similar legal consequence."

Id. [hereinafter DODD 5530.3]. Furthermore, DODD 5530.3 states that any oral agreements meeting the above criteria are also international agreements. Id. See generally Air Force Pamphlet 110-20, (27 July 1981). This pamphlet is a compilation of the most important treaties. Unfortunately it is no longer in print; however, some copies are still available at base legal offices.


10 U.S. CONST. art. 11, § 2, cl. 2.

11 Erickson, supra note 9, at 53-54, n.26-31.

12 U.S. CONST. art. VI, cl. 2.

13 Erickson, supra note 9, at 47-51.


16 Id. at 141 - 143.

17 Id. at 142. See also Vienna Convention on Diplomatic Relations of April 18, 1961, 22 U.S.T. 3227, T.I.A.S. 7502, 500 U.N.T.S. 95. A&T status is also appropriate when the presence involves only a few persons on a permanent basis, and a SOFA does not otherwise exist. An example would include military personnel assigned to the U.S. Military Group and Security Assistance Offices located in many U.S. Embassies.

18 The exchange of notes process usually begins with a request from DOD to the Department of State (DOS). The request indicates the activity requiring the note, its duration, and has a legal memorandum attached. DOS is responsible for coordinating the request with its regional bureaus, political-military section, its legal department, and any other interested agencies. The vehicle for this coordination process is the Circular 175 action memorandum. After proper coordination, DOS sends a cable to the appropriate U.S. Embassy containing the text of the note to be exchanged. The U.S. Embassy and the host country's Foreign Ministry then discuss the note and if willing, they exchange the note which creates a binding international agreement. The U.S. Embassy reports conclusions of the exchange to DOS, who reports to DOD.

19 Erickson SOFA, supra note 15, at 142.

20 Id. at 143.

21 Id. at 147-152. See also ARMY HANDBOOK, supra note 4, at 3-1 to 3-34. Compare Major Manuel E. F. Supervielle, The Legal Status of Foreign Military Personnel in the United States, THE ARMY LAWYER (Department of the Army Pamphlet 27-50-258), 3 (May 1994) (discussing status treatment by United States of foreign military personnel serving within U.S. territory).

22 Supervielle, supra note 21, at 3. See also Erickson SOFA, supra note 15, n.45; and North Atlantic Treaty, Apr. 4, 1949, 63 Stat. 2241, T.I.A.S. 1964, 34 U.N.T.S. 243; and Partnership for Peace SOFA originally signed by initial participants on 19 June 1995 (United States is not a party to the Additional Protocol which prohibits the imposition of the death penalty). See ARMY HANDBOOK, supra note 4, at 3-33, n.34.

23 Erickson SOFA, supra note 15, at 143.

24 See sources cited supra note 17.

25 Draft message from DOS to the American Embassies in Gaborone, Windhoek, Dakar, Bonn, and Bamako (17 April 1997) (on file with author).


27 HQ USAF/JAI SOFA Report (2 June 1997) (on file with author). The United States has some sort of formal SOFA with Albania (Partnership for Peace or PFP SOFA), Antigua and Barbuda, Ascension Island, Australia, Bahamas, Bahrain, Belgium, Bermuda (lend lease), Bosnia-Herzegovina (respecting IFOR), Brunei, Bulgaria (PFP SOFA), Cambodia, Canada, Chad (activity specific), Colombia, Croatia (respecting IFOR), Czech Republic (PFP SOFA), Denmark, Diego Garcia (with the United Kingdom), Dominica (activity specific), Dominican Republic, Egypt, Estonia (PFP SOFA), Ethiopia, Federated Republic of Yugoslavia (respecting transiting IFOR), Federated States of Micronesia (Compact with the U.S.), France, Germany, Greece, Grenada (activity specific), Haiti, Honduras, Hungary (PFP SOFA), Iceland, Iran (activity specific), Israel, Italy, Jamaica (lend lease), Japan, Jordan, Kazakhstan (provisional application of PFP SOFA), Kenya, Korea, Kuwait, Latvia (PFP SOFA), Lithuania (provisional application of PFP SOFA), Luxembourg, Malaysia, Marshall Islands (Compact with the U.S.),
Moldova (provisional application of PFP SOFA), Mongolia (pending entry into force), Morocco, The Netherlands, New Zealand, Norway, Oman, Panama, Papua New Guinea, Paraguay, Peru (activity specific), Portugal, Qatar, Romania (PFP SOFA), Russia (nuclear activity specific), St. Kitts and Nevis, St. Lucia (lend lease), Saudi Arabia, Singapore, Slovak Republic (PFP SOFA), Slovenia (PFP SOFA), Solomon Islands, Somalia, Spain, Sri Lanka, Sudan, Switzerland (arms control delegations), Tonga, Trinidad and Tobago (lend lease), Turks and Caicos Islands, Turkey, Union of Soviet Socialist Republics (INF), United Arab Emirates, United Kingdom, Uzbekistan (provisional application for PFP SOFA), Western Samoa, and Zaire. Id.

28 Erickson SOFA, supra note 15, at 144.

29 Id. See also 11 FAM, supra note 14, at 720. According to Dr. Erickson, the Circular 175 process sets forth the issue to be decided, factors to be considered, and proposes a recommendation to the Secretary of State or his designated approval authority. The Circular 175 process takes the form of an action memorandum to the Secretary of State (SECSTATE) or their designee requesting authority to negotiate and conclude an international agreement. It is initiated by DOD in an action memorandum detailing the need for the agreement with an attached legal memorandum. DOS coordinates the request through its bureaus, political military affairs section, and legal documents. DOS will also coordinate with other interested U.S. agencies, e.g., Immigration and Naturalization Service (INS). The Circular 175 contains background information, the proposed text for the international agreement, a legal memorandum, and a recommended negotiation strategy. Once approved, DOS will work with DOD to organize the negotiating team (when negotiation is required). The head of the team will serve as chief negotiator and their authority is derived from SECSTATE.

30 Erickson SOFA, supra note 15, at 144 -147 (describing Circular 175 authorized negotiation process).

31 See ARMY HANDBOOK, supra note 4, at 3-5 to 3-6.

32 DODD 5530.3, supra note 8.

33 See Chairman of the Joint Chiefs of Staff Instruction 2300.01, International Agreements, (15 September 1994) [hereinafter CJCSI 2300.01]; Air Force Instruction 51-701, Negotiating, Concluding, Reporting, and Maintaining International Agreements, (6 May 1994) [hereinafter AFI 51-701]; Department of the Army (DA) Regulation 550-51, Authority and Responsibility for Negotiating, Concluding, Forwarding, and Depositing of International Agreements, (1985) [hereinafter DA Reg. 550-51]; Secretary of the Navy Instruction (SECNAVINST) 5710.25A, International Agreements, (2 February 1995) (applies to Secretariat Staff only); Operations Naval Instruction (OPNAVINST) 5710.24, International Agreements Navy Procedures, (28 April 1978); and OPNAVIST 5710.25, International Agreements OPNAV Procedures, (28 April 1978) (both apply to Chief of Naval Operations and Navy, but note that they are currently under revision as OPNAVIST 5710.25A).

34 Case-Zablocki Act, 1 U.S.C. § 112(b).

35 See, e.g., AFI 51-701 Para. 7, supra note 33.

36 DODD 5530.3, supra note 8, at 5; see also, similar provisions in directives supra note 33.

37 Id. at 12-14.

38 See, e.g. CJCSI 2300.01, supra note 35, at Encl. A (stating this includes such as USACOM, USSOUTHCOM, USEUCOM, USEUCOM, and USPACOM, etc.); see also, AFI 51-701, supra note 35, at Para. 1.1.1.

39 See, e.g. DODD 5530.3, supra note 8, at 5-8; see also, similar provisions in directives cited supra note 32.

40 DODD 5530.3, supra note 8, at 7. Agreements "having policy significance" include those agreements that: (1) specify national disclosure, technology-sharing or work-sharing arrangements, coproduction of military equipment or offset commitments as part of an agreement for international cooperation in the research, development, test, evaluation, or production of defense articles, services, or technology; (2) because of their intrinsic importance or sensitivity, would directly and significantly affect foreign or defense relations between the United States and another
government; (3) by their nature, would require approval, negotiation or signature at the Office of the Secretary of Defense (OSD) or the diplomatic level; and (4) would create security commitments currently not assumed by the United States in existing mutual security or other defense agreements and arrangements, or which would increase U.S. obligations with respect to the defense of a foreign government or area. The list is not exhaustive and the term "having policy significance" should be read very broadly. Id.

41 See, e.g. AM 51-701, supra note 33, at Para. 1.1.4.1. (providing nonexhaustive list of agreements having "policy significance" and indicates that any subject which has reached the Assistant Secretary of Defense level in either government is included). A definition of agreements having "policy significance" is also provided by the Instruction. Id. at sec. C "Terms."

42 AFI 51-701, supra note 33, at Para. 1.1.1. Note that any international agreement concerning operational command of joint forces requires prior approval from CJCS.

43 Id. at 1.1.3.

44 Id. at 1.1.1.

45 Id. DODD 5530.3 warns against "[a]ssuming that if an agreement merely implements an existing agreement it is not a new international agreement and the requirements of DOD Directive 5530.3 do not apply, or that authority to negotiate has already been delegated. The delegation of authority for this category of agreements is to be very narrowly interpreted (emphasis added). In particular, authority is not delegated for implementing agreements which in any way expand or deviate from the basic agreement, or which address SOFA rights or place restrictions on operating rights." DODD 5530.3, supra note 8.

46 Other categories include: (1) cooperative or reciprocal operational, logistical, training or other military support including the shared use or licensing of military equipment, facilities, services, or nonphysical resources; (2) combined military planning, command relationships, military exercises and operations, minor and emergency force deployments, or exchange programs (personnel exchange agreements must be approved by the Office of the Under Secretary of Defense for Policy (USD(P))); (3) collection and exchange of military information or data, other than military intelligence; (4) health and medical matters, including cooperative research, development, testing, evaluation, technical data exchange, and related standardization agreements concerning health and medical matters, provided that such agreements are not to be implemented through the Security Assistance Program; and (5) sharing or exchange of DOD communications equipment, facilities, support, services, or other communications resources with a foreign country or alliance organization such as NATO, the use of U.S. military frequencies or frequency bands, and the use of U.S. communications facilities and systems by foreign organizations, whether overseas or in the United States (such agreements must be approved in advance by the Assistant Secretary of Defense for Command, Control, Communications and Intelligence (ASD[C3I]) if such agreement does not consist mainly of Air Force matters.).

47 Id. at Para. 1.1.2. Note that any international agreement that involves significant changes in logistic support for U.S. Armed Forces and affects joint plans and programs (including base adjustments) should be coordinated with the Joint Chiefs of Staff (JCS).

48 DODD 5530.3 defines "negotiation" as:

Communication by any means of a position or an offer, on behalf of the United States, the Department of Defense, or on behalf of any officer or organizational element thereof, to an agent or representative of a foreign government, including an agency, instrumentality, or political subdivision thereof, or of an international organization, in such detail that the acceptance in substance of such position or offer would result in an international agreement. The term "negotiation" includes any such communication even though conditioned on later approval by the responsible authority. The term "negotiation" also includes provision of a draft agreement or other document, the acceptance of which would constitute an agreement, as well as discussions concerning any U.S. or foreign government or international
organization
draft document whether or not titled "agreement." The term "negotiation" does not include preliminary or exploratory discussions or routine meetings where no draft documents are discussed, so long as such discussions or meetings are conducted with the understanding that the views communicated do not and shall not bind or commit any side, legally or otherwise." (emphasis added).

DODD 5530.3, supra note 8, at enclosure 2. See also AM 51-701, supra note 32, at sec. C "Terms."

49 AFI 51-701, supra note 33, at Para. 2.

50 Id.

51 Id.

52 Id. at atch. 2.

53 Id. at sec. C "Terms."

54 Id. at Para. 3.

55 Id. at Para. 4.

56 Id. at Para. 5.

57 Id. at Para. 6.

58 Id. at Para. 7.

59 Id. at Para. 8.

60 Id. at Para. 9.

61 ARMY HANDBOOK, supra note 4, at 3-14.


65 ARMY HANDBOOK, supra note 4, at 3-15. Acquisition-only authority is found at 10 U.S.C. § 2341; Cross-servicing authority is found at 10 U.S.C. § 2342; and Waiver authority at 10 U.S.C. §§ 2343 and 2344.


67 AFI 51-701, supra note 33, sec. C "Terms."

68 Memorandum from Walter B. Slocombe, USD(P), (17 January 1997) (suspects military activity in the Philippines except on a case-by-case basis until the two governments reach a status agreement) (letter on file with author). See also Message from SECSTATE (051527Z Jan.1996) that prohibits post-1995 U.S. participation in combined exercises in PfP countries that do not have formal status arrangements, either through adherence to the
PfP SOFA on a provisional basis, formal ratification of that document, or a legally binding diplomatic exchange of notes granting A&T status. Exceptions are limited and require the Unified Command CINC to initiate the process by determining that the risk of an unfair trial or inhumane treatment is minimal in comparison to the value of an exercise in the particular country. Waiver can only be granted through the CJCS by the SECDEF or DEPSECDEF. Also, the USD(P) can initiate the waiver process (message on file with author). Currently, DOD is working on a similar worldwide policy.

69 Id. at SECSTATE MESSAGE Section 3.

70 AFI 51-701, supra note 33. Other research tools available for identifying applicable international agreements include: Treaties in Force (an annual DOS publication containing unclassified treaties and executive agreements); United States Treaties and Other International Agreements (UST), as supplemented by Treaties and Other International Acts Series (TIAS) (basic sources for locating published texts of U.S. treaties and executive agreements); Air Force Pamphlet 110-20, Selected International Agreements (27 July 1981); International Legal Materials (ILM) (published bimonthly by the American Society of International Law); and D. SCHINDLER & J. TOMAN, THE LAWS OF ARMED CONFLICT (1988).

71 ARMY HANDBOOK, supra note 4, at 3-10 to 3-12.

72 AFI 51-701, supra note 33, at Para. 10.

73 Id.