PLANNING CONSIDERATIONS

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Counterair planning may be conducted at every echelon of command and across the range of military operations. Counterair planning should take into account the capabilities of all the Services, joint force components, and interagency and multinational partners. Counterair planning is conducted using the joint operation planning process for air. For details on this process, see Annex 3-0, *Operations and Planning* and JP 3-30, *Command and Control of Joint Air Operations*. During joint intelligence preparation of the operational environment, planners should determine the adversary's active and passive counterair capabilities, as well as his intent to contest control of the air with those capabilities, if possible. This, in turn, should inform the joint force air component commander's (JFACC's) and joint force commander's (JFC's) decision-making efforts during mission analysis and course of action (COA) development.

Normally, **the JFACC's first priority should be to define—in both time and space—that level of control of the air needed to achieve the JFC's objectives**. Once defined, the JFACC should identify the current level of control in the air (parity, superiority, or supremacy) and what actions are required to reach the desired level of control. This determination will drive the priorities for air operations center (AOC) planners. The JFACC must inform the JFC as to which level of control of the air is realistically achievable given current capabilities and allocation of assets. When analyzing forces available, it is important to consider the capabilities of other joint force components and multinational partners.

Offensive Counterair

Offensive counterair (OCA) may be the highest payoff air component mission when the enemy has the capability to significantly threaten friendly forces with air and missile assets. Given finite resources, the JFACC should judiciously allocate them in order to meet the JFC's objectives. Successful OCA results in greater freedom *from* attack, enabling increased freedom of action, and freeing assets for other operations against the enemy. In other words, the initial investment in OCA operations to achieve the desired level of control of the air may pay significant dividends toward overall mission accomplishment. Determining which enemy capabilities hinder control of the air is fundamental to successful OCA operations. For instance, it may not be necessary to completely destroy a given capability, but only temporarily degrade it in order to achieve

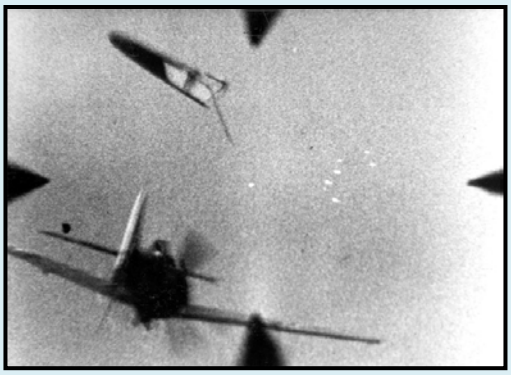
desired effects. The latter may require much less effort, thereby freeing up assets for other missions. This type of analysis may vary from one operation to another but often results in an effective set of target priorities and an efficient use of assets to achieve the desired effects.

Offensive Counterair Example

To gain control of the air, friendly forces must counter enemy airborne threats not only to assure full force protection, but also to enable full flexibility to conduct parallel operations across the operational environment. The flexibility of air power may tempt commanders to divert it to other tasks. The theater commander must correctly balance requirements; it is the role of the air component commander to articulate the crucial enabling role of air, space, and cyberspace superiority. Relaxing pressure on the enemy's air forces may allow them to gain air superiority with disastrous results. For example, Hitler's decision during World War II to divert the Luftwaffe from direct attack of the Royal Air Force (RAF) to the bombing of cities allowed the RAF breathing space it desperately needed to reconstitute and eventually win the Battle of Britain.

What the Luftwaffe failed to do was to destroy the fighter squadrons of the Royal Air Force, which were, indeed, stronger at the end of the battle than at the beginning.

—Air Chief Marshal Sir Hugh C.T. Dowding
Fighter Command, Royal Air Force



The nature of airpower is such that offensive combat power can frequently be "massed" by *distributing* forces. In fact, the most effective OCA efforts may be achieved as part of a broader, parallel attack on the adversary as a system-of-systems with all available assets, to include cyberspace and space capabilities. For instance, attacking electrical power and isolating national military leadership may aid the operation's overall OCA effort while also helping achieve other objectives. However, as with other operations, care must be taken not to dilute the OCA effort to the point where it is ineffective. Concentration of effort in the context of space and time will ensure that direct effects

allowing access are balanced with indirect effects that degrade the overall enemy system over time. If the OCA effort is spread too thin, the JFACC risks losing the initiative and the benefits of airpower's offensive nature. When considering counterair assets available, it is important to give full consideration to the assets and capabilities of other components.

Planners should utilize intelligence to determine the adversaries' capabilities and expect at a minimum that adversaries will have at least a rudimentary integrated air defense system (IADS), consisting of both active and passive defenses, even if they do not possess any significant offensive air potential. IADS range from coordinated fire from small-caliber antiaircraft artillery, man-portable air defense system (MANPADS) missiles and small arms fires (which may, nonetheless, employ sophisticated passive measures such as camouflage and concealment), to complex, integrated, and highly redundant systems such as the Israelis encountered in the 1973 Yom Kippur War and the US encountered in North Vietnam, Serbia, and Iraq during Operation SOUTHERN WATCH. In all cases, strategists and planners should develop means of neutralizing these systems, or negating their effectiveness, in order to create a permissive air environment at desired places and times. In the case of the more complex IADS, attacking the larger enemy system in parallel (versus concentrating on the IADS alone) will likely be more effective and may yield cascading failures within the IADS, as systems it relies upon also fail. Ironically, more rudimentary or "primitive" defense systems may be harder to defeat because they are more distributed and easily concealed (or otherwise protected), and may be rendered ineffective only by imposing operating restrictions on friendly forces (since such defense systems are typically short-ranged).

The following considerations are important for determining OCA targeting priorities and methods:

- **Threat.** The threat posed by specific enemy capabilities (aircraft, theater missiles, etc.) includes an assessment of the urgency or the need to counter that threat. A Weapon of Mass Destruction-capable missile launcher would normally merit diversion of assets from a less immediate threat, such as a surface-to-air missile (SAM) site.

- **Direct effects.** First-order results of actions with no intervening effects between action and outcome. These are usually immediate, physical, and readily recognizable (e.g., weapon employment results). These are important in determining whether friendly tasks were accomplished. Planning for them must also consider such factors as collateral damage potential and rules of engagement restrictions.

- **Indirect effects.** Second, third, or higher-order effects created through intermediate effects or causal linkages following causal actions. These may be physical, psychological, functional, or systemic in nature. They may be created in a cumulative, cascading, sequential, or parallel manner. They are often delayed and typically are more difficult to recognize and assess than direct effects.

Understanding these and the causal linkages between them may be vital for achieving objectives.

- **Forces available.** The forces available are assessed against the number, types, and priority of targets that can be attacked. Sufficient and capable forces should be provided to ensure the desired results are obtained.

- **Time available and time required.** Time constraints are integral to prioritization and planning. The time allowed to achieve the direct and indirect effects as well as the duration required of those effects will influence the number and type of forces required.

- **Risk.** Risk calculation involves weighing the risk to friendly forces against expected gains from target attack. Risk calculation should also consider the risks entailed in *not* taking planned actions. Different objectives and circumstances drive different acceptable levels of risk.

- **Measures and indicators.** These are the essential component parts of assessment; the means of evaluating progress toward creating effects and achieving objectives. They should be determined during planning.

The types of resources available to perform OCA tasks are only "tools" in a planner's "toolkit." Desired effects should drive planning efforts and there may be many ways to impose a particular effect. The means may be chosen based on a number of criteria, including desired higher-order indirect effects. For example, there are multiple ways to suppress a SAM site. One may simply jam its communications and radars if short term local suppression is needed or if resources needed to create the intended effects are not available. One may destroy or degrade the operations center that controls the site, forcing the enemy to autonomous operations that often present less of a threat to friendly forces. One may destroy the site outright if its autonomous operation represents a sufficient threat to friendly operations. Planners and commanders should choose means carefully in order to satisfy requirements relating to the timing and tempo of operations, persistence of threats, and "opportunity costs" of using OCA assets for other purposes.

Planning for OCA usually takes place in the AOC as part of the joint operation planning process for air. In early stages of planning, the JFACC, along with the AOC's strategy and intelligence, surveillance, and reconnaissance (ISR) divisions, will determine objectives, desired effects, and relative priorities. Planners in the strategy, combat plans, and ISR divisions will determine enemy systems, capabilities, and assets that can be used to contest control of the air. Combat plans and combat operations personnel will use this information to match desired effects to targets provided by the ISR division, and match targets with friendly forces to create tactical tasks. Planners should develop a prioritized target list before hostilities begin, continually updating it once the battle rhythm is established based on current intelligence and progress of the operation. Planners should also build procedures to handle higher priority re-taskings, such as diversions to strike JFC-designated time-sensitive targets (TSTs), which for

counterair, may be such targets as enemy ballistic missiles or the most modern SAMs that represent significant threats to friendly air operations. Planners must be able to rapidly retask OCA missions in order to take appropriate action against TSTs and similar fleeting, emerging, or higher-priority OCA targets. For example, it may be necessary to pull a flight of aircraft off of attacking an enemy aircraft fuel facility to strike (or monitor) a probable ballistic missile launch site that is of higher priority to the JFACC and JFC. A frequently used best practice is to designate on-call aircraft with appropriate weapons loads to loiter, awaiting the call to strike a fleeting target, then striking a pre-planned OCA (or other) target if no call comes. Against fixed, often highly defended, targets deep within enemy territory, OCA planners should place great emphasis on detailed, accurate, and timely intelligence, target analysis, time-over-target deconfliction, active and passive defenses available to the enemy, and rules of engagement (ROE). Mission planners at the unit level should study these thoroughly to avoid fratricide and mission interference, and enhance mission effectiveness.

The following considerations are important for OCA planning at the AOC and unit mission planning levels:

- **Enemy threat, location, and capabilities.** The enemy threat to air operations needs proper consideration in the planning, positioning, and timing of OCA mission details. Specific threats to the OCA effort (aircraft, missiles, AAA, electronic attack) may require substantial emphasis be placed on their disruption prior to striking intended targets.

- **Friendly C2 capabilities.** Theater C2 assets such as AWACS and JSTARS, are tasked by numerous units and agencies. As such, OCA planners should not assume that complete C2 capabilities will be available for every OCA mission. In all cases, C2 instructions should be carefully monitored, because this is the avenue through which higher-priority re-tasking will come.

- **Rules of engagement.** ROE (and related special instructions [SPINS]) found in tasking orders, as well as rules for use of force, often used in situations such as homeland defense and civil support missions) may critically affect how missions are performed. All levels, from the JFACC down to individual aircrews, should understand the ROE that apply to the accomplishment of their missions.

- **Weaponeering.** Assigning the correct weapons and platforms to target sets is critical to achieve the desired effects. Accurate weaponeering increases the chances of achieving desired effects.

- **Deconfliction.** The sheer number of airborne assets—manned, unmanned, and ballistic—demands that planners deconflict to protect friendly forces from unnecessary risk.

- **Environmental conditions.** The significance of environmental conditions on counterair cannot be overstated. Weather can limit sensor or seeker sensitivity and ultimately limit the planner's munitions selection. Likewise, varying terrain can be a

challenge to pilots or offer refuge to an adversary. Terrain will often limit munitions selection. Planners should address the need for sufficient counterair assets to offset the loss of capability and desired effects due to environmental factors.

- **Distance, timing, and refueling.** OCA and defensive counterair (DCA) air assets typically require refueling support for sustained presence. Refueling coordination requires constant management by planners, and details need to be stated in ATO SPINS. See *Air Mobility Operations*, Annex 3-17 for more detail on refueling considerations.

Defensive Counterair

While OCA seeks to affect enemy counterair systems close to the enemy location, DCA seeks to affect those same systems closer to the friendly locations. In some cases, DCA may also be the only allowed means of countering air and missile threats due to constraints imposed by the political situation. Effective OCA greatly reduces the DCA requirement, freeing assets for more offensive operations, but some degree of DCA is normally necessary in every operation. DCA operations defend friendly lines of communication, protect friendly forces and assets by denying the enemy the freedom to carry out offensive attacks from the air, and provide a secure area from which all elements of the joint force can operate effectively. DCA operations can be conducted in conjunction with or independent of OCA operations and generally fall into one of two categories: Active or passive defense.

Just as in OCA operations, DCA planners prioritize which assets and capabilities to defend. Planners at all levels identify enemy targets and capabilities to defend against, while matching available forces against the threat. They use many of the same OCA planning considerations. Planners determine which mission-critical assets and capabilities to protect, which will vary from operation to operation.

Active Air Defense

Active air defense is direct defensive action taken to destroy, nullify, or reduce the effectiveness of hostile air and missile threats against friendly forces and assets (JP 1-02). Active air defense operations are conducted using a mix of weapon and sensor systems, supported by secure and highly responsive C2 systems, to find, fix track, target, and destroy or reduce the effectiveness of hostile airborne threats. These operations attempt to neutralize or degrade the effectiveness of enemy attacks and protect friendly forces and interests through the **direct employment** of weapons systems. Active air defense targets include any airborne threat that negatively impacts friendly operations.

Integrated employment of air-to-air and surface-to-air defense systems through coordinated detection, identification, engagement, and assessment of enemy forces is necessary to defeat enemy attacks and protect friendly forces. Planners should keep in mind the complexities of airspace control in a DCA environment. Airspace control in an

active air defense environment is extremely difficult and becoming more complicated with the proliferation of UAS. Rapid, reliable, and secure means of identification are critical to the survival of friendly aircraft and to facilitate an effective defense against enemy air and missile attacks.

The efficient execution of air defense operations requires the ability to quickly detect a potential air defense threat, identify it, target and track it, and attack it. DCA engagements may occur inside friendly airspace, requiring careful deconfliction between friendly assets, such as fighters in the DCA role and friendly SAMs. An agile ISR capability is essential to provide continuous surveillance and reporting of real time and near-real time target track data. To maximize damage to the enemy force, the engagement process is continuous throughout the threat's approach, entry into, and departure from the friendly operational area. Target track production is a sequential process that begins with the surveillance function.

Near-real time surveillance and threat analysis depends on the ability to fuse all-source sensor data (ground, air, sea, and space-based sensors) into an accurate theater attack assessment. As a track is detected, it is identified and labeled; this information is then disseminated as rapidly as possible. The track data provided should be sufficiently detailed and timely to permit the C2 system to evaluate the track, determine the significance of the threat, and designate air defense forces for interception. The optimum employment of air defense weapon systems involves the earliest possible discrimination of friend from foe to maximize beyond-visual-range engagement. **To prevent fratricide, great caution should be exercised when employing autonomous CID in DCA operations.**

If no IADS is established, procedural means should be used to permit the safe passage of friendly aircraft while still allowing for the use of air defense weapons (fighter engagement zones, missile engagement zones, and joint engagement zones). Since many DCA assets are owned by different Services and coalition partners, standardized integration, coordination, and airspace control procedures are required to enable or enhance the capabilities of the various systems. Finally, ROE should remain simple, giving air defense systems the flexibility to operate beyond the constraints of procedural control measures.

Passive Air Defense

Unlike active air defense measures, passive air defense does not involve the employment of lethal weapons. Rather, these measures improve the survivability of friendly forces by reducing the potential effects of enemy attacks. Passive air defense measures are designed to provide protection for friendly forces and assets by complicating the enemy's identification, surveillance, and targeting processes and by countering the enemy's planned effects.

The first step of passive air defense is to hide valuable assets from the enemy or to encourage him to attack decoys. Like active air defense measures, a thorough passive

defense should include layered defense in depth. Passive measures can work concurrently to achieve this goal. These measures include camouflage, concealment, and deception; hardening; reconstitution; dispersal; electronic and infrared countermeasures; and low observable (LO) or stealth technologies. Passive air defenses are often an additional means of defense should active air defense efforts fail.